TSMC

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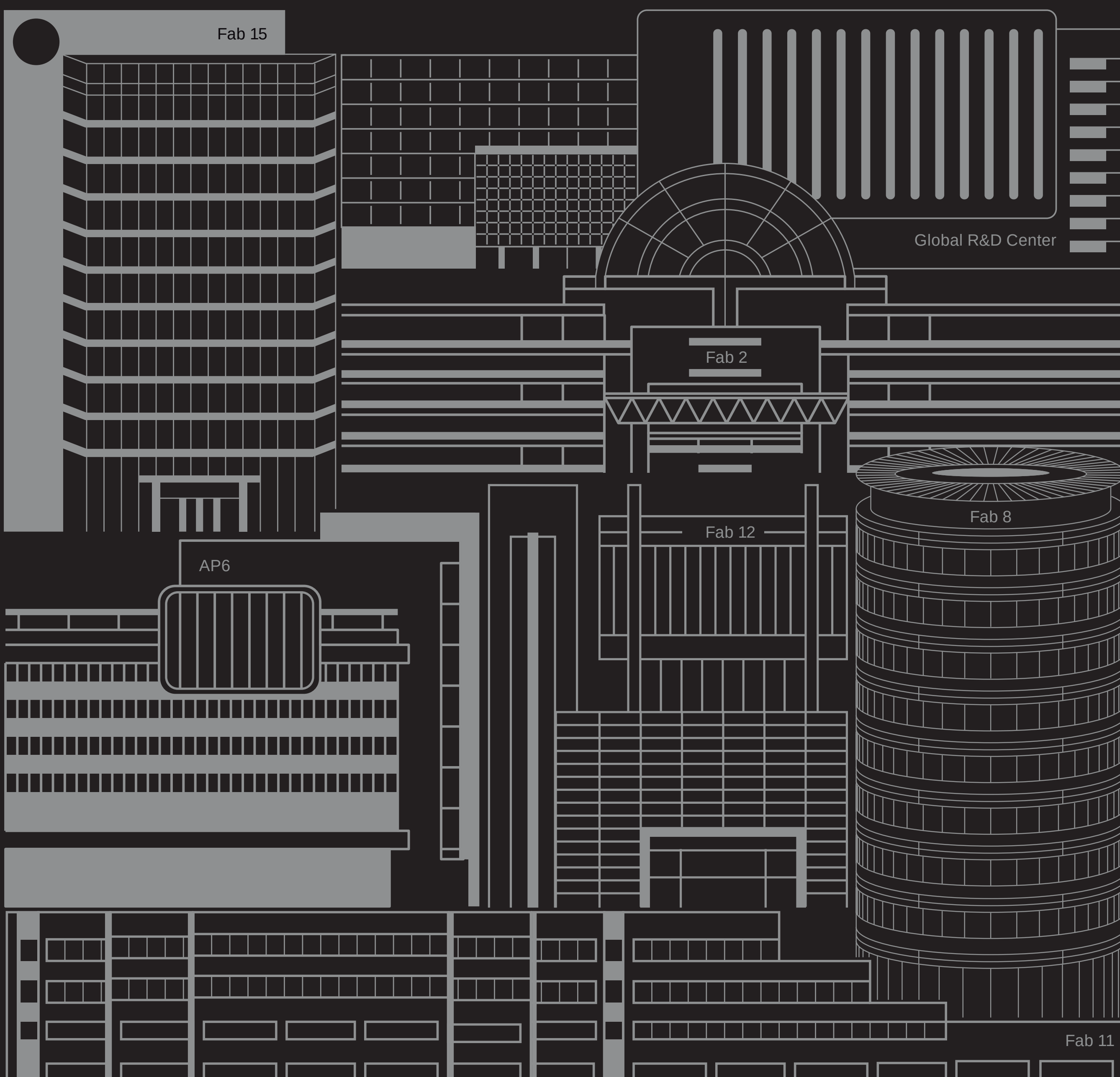

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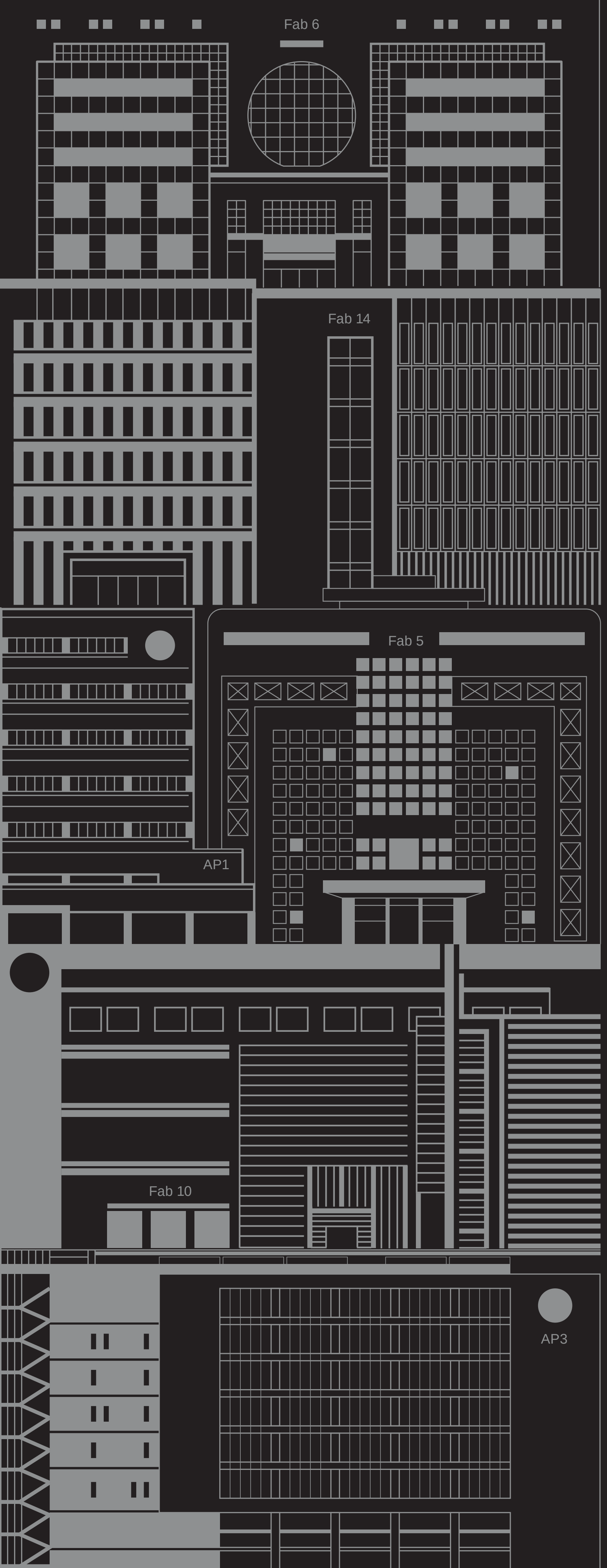

TSMC
Vision, Mission & Core Values

TSMC's Vision

Our vision is to be the most advanced and largest technology and foundry services provider to fabless companies and IDMs, and in partnership with them, to forge a powerful competitive force in the semiconductor industry. To realize our vision, we must have a trinity of strengths:

1. Be a technology leader, competitive with the leading IDMs
2. Be the manufacturing leader
3. Be the most reputable, service-oriented and maximum-total-benefits silicon foundry

TSMC's Mission

Our mission is to be the trusted technology and capacity provider of the global logic IC industry for years to come.

TSMC's Core Values

Integrity

Integrity is our most basic and most important core value. We tell the truth. We believe the record of our accomplishments is the best proof of our merit. Hence, we do not brag. We do not make commitments lightly. Once we make a commitment, we devote ourselves completely to meeting that commitment. We compete to our fullest within the law, but we do not slander our competitors and we respect the intellectual property rights of others. With vendors, we maintain an objective, consistent, and impartial attitude. We do not tolerate any form of corrupt behavior or politicking. When selecting new employees, we place emphasis on the candidates' qualifications and character, not connections or access.

Commitment

TSMC is committed to the welfare of customers, suppliers, employees, shareholders, and society. These stakeholders all contribute to TSMC's success, and TSMC is dedicated to serving their best interests. In return, TSMC hopes all these stakeholders will make a mutual commitment to the Company.

Innovation

Innovation is the wellspring of TSMC's growth, and is a part of all aspects of our business, from strategic planning, marketing and management, to technology and manufacturing. At TSMC, innovation means more than new ideas, it means putting ideas into practice.

Customer Trust

At TSMC, customers come first. Their success is our success, and we value their ability to compete as we value our own. We strive to build deep and enduring relationships with our customers, who trust and rely on us to be part of their success over the long term.

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TSMC Arizona

1 Letter to Shareholders

TSMC's Mission

Our mission is to be the trusted technology and capacity provider of the global logic IC industry for years to come.

Dear Shareholders,

2023 was a challenging year for the global semiconductor industry, but we also witnessed the rising emergence of generative AI-related applications, with TSMC as a key enabler. As the world re-emerged from more than two years of pandemic-induced slowdown, weakening global macroeconomic conditions and higher inflation and interest rates prolonged the semiconductor inventory adjustment cycle. Despite the near-term challenges, our technology leadership enabled TSMC to outperform the foundry industry in 2023. We are well-positioned to capture the future AI and high-performance computing (HPC)-related growth opportunities.

In 2023, Generative AI took the world by storm, with ChatGPT gaining over 100m active users in just two months, becoming the world's fastest growing consumer application. Generative AI requires high computing power and interconnect bandwidth, which drives semiconductor content increase. TSMC is a key enabler of AI applications. Today, the AI application is only in its nascent stage, and no matter which AI approach is taken, AI chips require the use of leading edge technologies and advanced packaging solutions, a strong foundry design ecosystem, and high yield to support larger die sizes. All of these are to TSMC's strengths, and thus all roads lead to working with TSMC.

The surge in AI-related demand in 2023 supports our already-strong conviction on energy-efficient computing. Thus, the value of our technology position is increasing.

To address the insatiable demand for energy-efficient computing power in a highly competitive market, customers rely on TSMC to provide a dependable and predictable cadence of technology offering and high quality manufacturing service.

For TSMC, today around ~70% of our total revenue is 16nm and more advanced nodes. With rising contribution from 3nm and 2nm technologies in the next several years, this number will only increase. Thus, our mature node exposure is around ~20% of our total revenue.

Our focus on mature nodes is to build high yield capacity for specialized technologies, rather than just nominal capacity. In 2023, we worked closely with our customers to introduce specialty technologies such as N6RF+ for smartphones, CMOS Image Sensors for cameras, and 22nm MRAM for automotive and industrial applications. Our mature node strategies will continue to focus on working closely with strategic customers to develop specialty technology solutions to meet their requirement, and create differentiated and long-lasting value to customers.

In 2023, we inaugurated our new R&D center in Taiwan, and further enhanced our R&D intensity and technology development. Our industry-leading 3-nanometer technology entered high volume production with a strong ramp in the second half of 2023. We are also providing continuous enhancements of our N3 technology, including N3E, N3P and N3X, and expect an even greater contribution in 2024 and the years beyond, supported by robust demand from multiple customers.

Our 2-nanometer is on track for volume production in 2025. It will be the most advanced technology in the semiconductor industry in both density and energy efficiency, when it is introduced. N2 will adopt nanosheet transistor structure, and deliver full-node performance and power benefits, to address the increasing need for energy-efficient computing. As part of N2 technology platform, we also developed N2 with backside power rail solution, which is better-suited for specific HPC applications, to be available in the second half of 2025 to customers, with production in 2026.

We are observing a strong level of customer interest and engagement at our N2, higher than N3 at a similar stage, from both HPC and smartphone applications. With our strategy of continuous enhancements, N2 and its derivatives will further extend our technology leadership well into the future.

The insatiable demand for energy-efficient computing power not only requires leading edge process technologies, but also advanced packaging technologies to enable large-scale interconnectivity for lower power consumption, at affordable costs. TSMC's industry-leading 3DFabric® backend technologies include the CoWoS® and InFO family of advanced packaging technologies, with CoWoS® technology seeing robust demand from multiple customers' AI chips in 2023. Our frontend 3DIC technologies, TSMC-SoIC® (System on Integrated Chips), also entered mass production in 2023 to enable customers' next generation flagship AI products.

We are working closely with our customers in a disciplined manner to plan our capacity, based on the long-term market demand profile, and investing in leading edge and specialty technologies, to support their structural growth.

Part of this strategy is to expand our global manufacturing footprint to increase customer trust, expand our future growth potential, and reach for more global talents. Our overseas decisions are based on our customers' needs, and a necessary level of government support. This is to maximize the value for our shareholders.

In the U.S., we are making good progress on our first fab in Arizona in terms of the fab infrastructure, utilities and equipment installation. We are on track for volume production of N4 technology in the first half of 2025, with the same level of manufacturing quality and reliability in Arizona as from our fabs in Taiwan.

We are also building a 12-inch specialty technology fab in Kumamoto, Japan, which is on track for volume production in the fourth quarter of 2024. We also announced plans to build an automotive and industrial specialty fab in Dresden, Germany, with construction starting in the fourth quarter of 2024.

While the initial costs of overseas fabs are higher than TSMC's fabs in Taiwan, we are confident to manage and minimize the cost gap, so that we can continue to maximize the value for our shareholders.

We are also placing a strong focus on our digital excellence initiatives, which includes leveraging big data and AI to increase our fab productivity and operational efficiency and quality. By driving digital excellence at TSMC, our fabs are transforming to become engineer-centric rather than operator-centric. As we expand globally, we will continuously enhance the intelligence of our fabs, so that we can control and manage fab operations from anywhere in the world, and deepen our service to support our customers.

Highlights of TSMC's accomplishments in 2023:

- Total wafer shipments were 12.0 million 12-inch equivalent wafers as compared to 15.3 million 12-inch equivalent wafers in 2022.
- Advanced technologies (7-nanometer and beyond) accounted for 58 percent of total wafer revenue, up from 53 percent in 2022.
- We deployed 288 distinct process technologies, and manufactured 11,895 products for 528 customers.
- TSMC produced 28 percent of the world semiconductor excluding memory output value in 2023, as compared to 30 percent in the previous year, mainly due to the semiconductor industry inventory correction.

2023 Financial Performance

Consolidated revenue reached NT$2,161.74 billion, a decrease of 4.5 percent over NT$2,263.89 billion in 2022. Net income was NT$838.50 billion and diluted earnings per share were NT$32.34. Both decreased 17.5 percent from the 2022 level of NT$1,016.53 billion net income and NT$39.20 diluted EPS.

TSMC generated net income of US$26.88 billion on consolidated revenue of US$69.30 billion, which decreased 21.1 percent and 8.7 percent respectively from the 2022 level of US$34.07 billion net income and US$75.88 billion consolidated revenue.

Gross profit margin was 54.4 percent as compared with 59.6 percent in 2022, while operating profit margin was 42.6 percent compared with 49.5 percent a year earlier. Net profit margin was 38.8 percent, a decrease of 6.1 percentage points from 2022's 44.9 percent.

In 2023, the Company further raised its total cash dividend payments to NT$11.25 per share, up from NT$11.0 a year ago.

Environmental, Social and Governance

In addition to driving profitable growth in our core business, TSMC continues to cultivate green manufacturing, build a responsible supply chain, create an inclusive workplace, attract and develop talent, and care for the underprivileged, fulfilling the Company's responsibilities as a corporate citizen.

Maintaining the highest standard of corporate governance is an essential part of our core values. In February 2023, TSMC's Board of Directors approved the establishment of the "Nominating, Corporate Governance and Sustainability Committee." The Committee is actively involved in developing TSMC's sustainability strategies, to lay the foundation for our future sustainable development. In addition, the Committee focuses on reviewing and improving TSMC's corporate governance structure, including recommending independent director candidates to the Board.

In 2023, we also announced an acceleration of our RE100 sustainability timetable, pulling forward our target for 100% renewable energy consumption for all global operations from 2050 to 2040. We also raised our 2030 target for company-wide renewable energy consumption from 40% to 60%, demonstrating our determination to achieve our environmental sustainability goals at a faster pace.

Corporate Developments

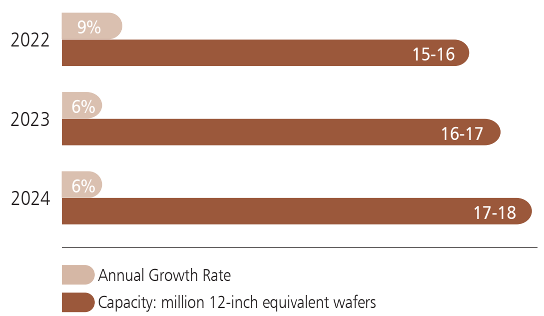
In August 2023, TSMC announced its plan to invest in European Semiconductor Manufacturing Company (ESMC) GmbH, in Dresden, Germany, along with Robert Bosch GmbH, Infineon Technologies AG, and NXP Semiconductors N.V., to build a specialty technology fab focusing on automotive and industrial applications. ESMC is expected to have a monthly capacity of 40,000 wafers on TSMC's 28/22 nanometer planar CMOS and 16/12 nanometer FinFET process technology.

In December 2023, TSMC announced that Dr. Mark Liu plans to retire from TSMC in June 2024, and will not seek re-election to the board of directors. During his tenure, Dr. Liu has reaffirmed the Company's commitment to its mission and focused on enhancing corporate governance and competitiveness particularly in technology leadership, digital excellence, and global footprint. TSMC's Nominating, Corporate Governance and Sustainability Committee recommends Dr. C.C. Wei, while remaining as CEO, to succeed as TSMC's next Chairman, subject to the election of the incoming board in June 2024.

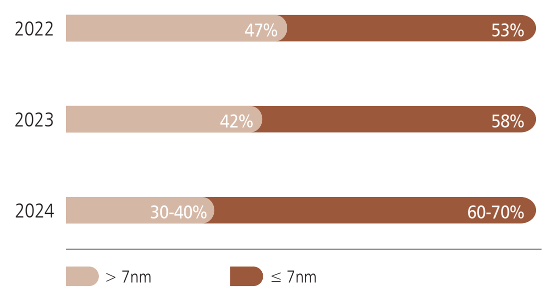
Honors and Awards

TSMC received recognition for achievements in innovation, corporate governance, sustainability, investor relations and overall excellence in management from organizations including *Forbes*, *Fortune Magazine*, *CommonWealth Magazine*, Taiwan Stock Exchange, and Taiwan Institute for Sustainable Energy. For innovation, TSMC was recognized as 3rd in IFI Claims Patent Services' "2023 Top 50 U.S. Patent Assignees." TSMC was also recognized by *Fortune Magazine* as "2023 World's Most Admired Companies." In sustainability, we were chosen once again as a component of the Dow Jones Sustainability Indices, becoming the only semiconductor company to be selected for 23 consecutive years. We also received MSCI ESG Research's AAA Rating, CDP's "2022 CDP Supplier Engagement Leader," Morningstar's "The Best Sustainable Companies to Own in 2024," S&P Global's Corporate Sustainability Assessment – Top 10% S&P Global ESG Score, ISS-oekom Corporate Rating's "Prime" status, *Financial Times* and Statista's "Asia-Pacific Climate Leaders 2023," and *Forbes*' "World's Best Employers 2023." Meanwhile, we remained a major component in various MSCI ESG and FTSE4Good indices. In investor relations, TSMC continued to receive multiple awards from *Institutional Investor Magazine*.

Capacity Plan



Wafer Sales Plan



2024 wafer shipment is expected to be 13-14 million 12-inch equivalent wafers.

Outlook

Entering 2024, macroeconomic weakness and geopolitical uncertainties persist, potentially further weighing on consumer sentiment and end market demand. Against that backdrop, our business is expected to be supported by the continued strong ramp of our industry-leading 3nm technologies and robust AI-related demand, and we expect 2024 to be a healthy growth year for TSMC.

Recent developments, such as growing national security concerns, the reshaping of global supply chains, and the intensifying competition in the quest for AI supremacy, have deepened geopolitical uncertainties.

At the same time, as AI technology evolves to use more complex AI models, the amount of computation required for training and inference continues to increase. As a result, AI models need to be supported by more powerful semiconductor hardware, which use the most advanced semiconductor process technologies.

TSMC's success is predicated on providing the industry's most leading edge process technologies at scale, in the most efficient and cost-effective manner, to enable innovators to successfully offer the best products to the world.

As we become a technology leader in the semiconductor industry, we are shouldering a greater responsibility of R&D and investment in the industry. With our strong technology leadership in leading edge process technologies and advanced packaging solutions, we are able to capture a greater portion of the industry's growth opportunities.

We focus on the fundamentals of our business, and will execute our global manufacturing footprint strategy purposefully, to support our customers' growth and increase their trust. We will continue to drive digital excellence across all our fabs globally and work towards fully intelligent and automated manufacturing. We are determined to be the most efficient and cost-effective manufacturer, no matter where we operate.

As the world grows more complex, semiconductor technology is the foundational technology for the modern digital economy. The semiconductor value in the global supply chain continues to increase, providing greater value for our customers, and greater value opportunities for TSMC.

We do not take our role and responsibility in the global semiconductor industry lightly. We will not deviate from our pure-play foundry business model, which has demonstrated time and again to be a win-win model for TSMC and our customers. We will continue to uphold our Trinity of Strengths of Technology Leadership, Manufacturing Excellence, and Customer Trust, to enable our customers to unleash their innovations in their end markets.

We will hold ourselves to the highest standards of corporate governance, and will adhere to our core values of Integrity, Commitment, Innovation and Customer Trust, no matter where we operate, while pursuing a sustainable future. We deeply value your trust in TSMC through the challenges of 2023. We are very excited about our future, and will work hard to run our business well, deliver good results and continue to maximize the value for our shareholders in the years to come.

Mark Liu
Chairman

C.C. Wei
Chief Executive Officer

TSMC Financial, Operational, and Sustainability Performance Highlights

Financial Highlights

Consolidated revenue reached **NT$2,161.74 billion**

Diluted earnings per share were **NT$32.34**

Total cash dividend payments raised to **NT$11.25** per share, up from NT$11.0 a year ago

Gross profit margin was **54.4%**

Net income was **NT$838.50 billion**

Sustainability Highlights

The world's **1st** semiconductor company to join the RE100, TSMC has committed to **100%** renewable energy by 2040

Chosen once again as a component of the Dow Jones Sustainability Indices, becoming the only semiconductor company to be selected for **23** consecutive years

TSMC Taiwan fabs **first** in global semiconductor industry to jointly obtain platinum rating for UL 2799 waste recycling standard

TSMC's first Zero-Waste Manufacturing Center commenced operation

In terms of patent grants, TSMC had accumulated over **62,000** patents worldwide as of the end of 2023. The company was ranked **3rd** among U.S. patentees and **1st** among patentees in Taiwan

Operational Highlights

Advanced technologies (N7 and beyond) accounted for **58%** of total wafer revenue

Frontend 3DIC technologies, **TSMC-SoIC®** (System on Integrated Chips) entered mass production

Manufactured **11,895** different products using **288** distinct technologies for **528** different customers

Investment in R&D reached **US$5.85** billion

TSMC produced **28%** of the world semiconductors excluding memory output value

JASM

2 Company Profile

TSMC's total wafer shipments were 12 million 12-inch equivalent wafers in 2023.

2.1 An Introduction to TSMC

Established in 1987 and headquartered in Hsinchu Science Park, Taiwan, TSMC pioneered the pure-play foundry business model with an exclusive focus on manufacturing its customers' products. By choosing not to design, manufacture or market any semiconductor products under its own name, the Company ensures that it never competes with its customers. Based on this founding principle, the key to TSMC's success has always been to enable its customers' success. TSMC's foundry business model has led to the rise of the global fabless industry and, since its inception, TSMC has been one of the world-leading semiconductor foundries. In 2023, the Company manufactured 11,895 different products using 288 distinct technologies for 528 different customers.

TSMC-made semiconductors serve a global customer base that is large and diverse entailing a wide range of applications. These products are used in a variety of end markets including high performance computing, smartphones, the Internet of Things (IoT), automotive, and digital consumer electronics. Such strong diversification helps to smooth fluctuations in demand, which in turn allows TSMC to maintain high levels of capacity utilization and profitability, and generate healthy returns for future investment.

The annual capacity of the manufacturing facilities managed by TSMC and its subsidiaries exceeded 16 million 12-inch equivalent wafers in 2023. These facilities include four 12-inch wafer GIGAFAB® fabs, four 8-inch wafer fabs, and one 6-inch wafer fab – all in Taiwan – as well as one 12-inch wafer fab at a wholly owned subsidiary, TSMC Nanjing Company Limited, and two 8-inch wafer fabs at wholly owned subsidiaries, TSMC Washington (previously called WaferTech) in the United States and TSMC China Company Limited.

In August 2023, TSMC announced its plan to jointly invest in European Semiconductor Manufacturing Company (ESMC) GmbH, in Dresden, Germany, to build a specialty technology fab focusing on automotive and industrial applications. 70% of ESMC's equity stake is owned by TSMC, with Robert Bosch GmbH, Infineon Technologies AG, and NXP Semiconductors N.V. each holding 10% equity stake. Total investments are expected to exceed 10 billion Euros. The planned fab is expected to have a monthly capacity of 40,000 300mm (12-inch) wafers on TSMC's 28nm/22nm planar complementary metal oxide semiconductor (CMOS) and 16nm/12nm FinFET process technology. ESMC aims to begin construction of the fab in the second half of 2024 with production targeted to begin by the end of 2027.

The Company continues to execute its plan to construct and operate two fabs in Arizona, the United States. Production of the first fab is targeted for the first half of 2025 and construction of the second fab is ongoing. TSMC is also building a new fab in Kumamoto, Japan, with production projected for late 2024.

TSMC provides customer support, account management and engineering services through offices in North America, Europe, Japan, China, and South Korea. At the end of 2023, the Company and its subsidiaries employed more than 76,000 people worldwide.

The Company is listed on the Taiwan Stock Exchange (TWSE) under ticker number 2330, and its American Depositary Shares (ADSs) are traded on the New York Stock Exchange (NYSE) under the symbol TSM.

2.2 Market/Business Summary

2.2.1 TSMC Achievements

In 2023, TSMC maintained its leading position in the foundry segment of the global semiconductor industry by accounting for 28% of the worldwide semiconductor market excluding memory, a decrease from 30% in 2022, mainly due to the semiconductor industry inventory correction.

The Company's strong market position stems in great part from its leadership in advanced process technologies. In 2023, 58% of TSMC's wafer revenue came from advanced manufacturing processes – defined as geometries of 7nm and smaller – up from 53% in 2022.

TSMC offers a comprehensive technology portfolio and continues to invest in advanced technologies, specialty technologies, and advanced packaging and silicon stacking technologies, to provide customers more added value.

In addition to its leadership in advanced process and specialty technologies, TSMC offers TSMC 3DFabric®, a comprehensive family of 3D silicon stacking and advanced packaging technologies to complement its process technology offerings. TSMC 3DFabric® provides customers greater chip design flexibility to unleash innovation and is another differentiating competitive advantage for the Company.

2.2.2 Market Overview

TSMC estimates that the worldwide semiconductor market excluding memory reached US$481 billion in revenue in 2023, representing a 2% decline from 2022. In the foundry segment of the semiconductor industry, total revenue fell to US$114 billion in 2023, a 13% year-over-year decrease.

2.2.3 Industry Outlook, Opportunities and Threats

Foundry Industry Demand and Supply Outlook

In 2023, TSMC's revenues in the foundry segment declined, primarily due to the weak electronic equipment (EE) end demand and supply-chain inventory corrections. Although industry megatrends, such as 5G, artificial intelligence (AI), and accelerating digital transformation remained intact, macro-economic uncertainties dampened both consumer and business spending, resulting in reduced demand for many EE devices, such as smartphones and personal computers (PCs). In addition, the electronics supply chain experienced severe inventory corrections throughout 2023 to digest the excess inventory that had accumulated over the past two years due to supply uncertainties, impacting the growth of foundry segment and TSMC.

Looking ahead to 2024, macro-economic and geopolitical uncertainties remain high. However, TSMC expects end demand for many EE products such as smartphones and PCs to gradually recover with mild growth spurred in part by the pent-up demand after consecutive declines in the past two years. In addition, the acceleration of AI related adoptions will also fuel demand for semiconductors. The Company also expects the overall excess inventory in the system and IC companies to be largely digested and back to healthy levels by the first half of 2024, establishing a solid base for growth in 2024. For the longer term, driven by the above-mentioned megatrends and increasing semiconductor content in most EE devices, TSMC projects a high single-digit compound annual growth rate for the worldwide semiconductor market excluding memory from 2023 through 2028. Furthermore, the Company expects foundry segment revenue growth to outpace the growth of semiconductors excluding memory, fueled by continuing market share gains by fabless companies, increases in integrated device manufacturer (IDM) outsourcing, and the expanding use of in-house application-specific integrated circuits (ASIC) by systems companies.

As an upstream supplier in the semiconductor supply chain, the foundry segment is tightly correlated with the market health of all major platforms including high performance computing (HPC), smartphones, Internet of Things (IoT), automotive, and digital consumer electronics (DCE).

- High Performance Computing (HPC)

The HPC platform includes PCs, tablets, game consoles, servers, base stations and more. Major HPC unit shipments declined 14% in 2023 due to prolonged high inflation, macro-economic uncertainty and continued inventory correction, all resulting in weak demand on the consumer side. Meanwhile, demand for servers and data centers equipped with accelerators was relatively healthy, to fulfill the rapidly expanding types and needs of AI applications, especially generative AI, and continued 5G base station deployment.

Moving into 2024, despite lingering macro-economic uncertainty, TSMC projects low-single-digit growth in HPC unit shipments driven by normalized inventory levels, pent-up demand resulting from declines in the past two years, and the ongoing AI arms race. Longer term, an increasingly intelligent and more connected 5G world will demand massive computing power as well as increasingly energy-efficient computing. Both of these require higher performance and more power-efficient central processing units (CPUs), graphics processor units (GPUs), Network Processing Units (NPUs), AI accelerators, and related ASICs, which will drive the overall HPC platform towards richer silicon content, more advanced process technologies and advanced 3D packaging. These trends are all favorable to TSMC given TSMC's technology leadership in these areas

- Smartphones

Due to higher inflation, a soft global economy and the ongoing Russo-Ukrainian war, smartphone unit shipments declined 6% in 2023, reflecting a slowdown in the pace of 5G commercialization as well, thus prolonging the replacement cycle of 4G. The long supply chain inventory correction having subsided, smartphone growth is expected to return due to greater demand from emerging countries as well as cyclical recovery. TSMC therefore projects a low-single-digit growth for the smartphone market in 2024. Over the longer term, however, the inevitable migration to 5G, together with improved performance, longer battery life, biosensors and more edge AI features, will all continue to propel smartphone sales growth going forward.

High performance and power efficient IC technologies are essential requirements among handset manufacturers, and highly integrated chips and advanced 3D packaging designs are the preferred solutions to optimize cost, power and form factor (IC footprint and thickness). The migration to advanced process technologies will certainly continue, spurred by the need for higher performance chips to run edge AI applications and various complex software computations as well as higher resolution images and video. TSMC is an acknowledged leader in process technology for manufacturing highly integrated chips and advanced 3D packaging designs and, as such, is very well positioned to serve the evolving smartphone market.

- Internet of Things (IoT)

The IoT platform includes various types of smart connected devices ranging from wearables and health monitors to home and industrial automation devices. After the pandemic, digital transformation has resumed, refueling IoT growth momentum. Consumer and enterprise spending, however, was also held back by global inflation and economic slowdown. The end result was a modest 3% growth rate in IoT device shipments in 2023, with smart health and smart retail devices as the major drivers.

As IoT devices incorporate more AI features, the IoT industry is expected to maintain long-term growth. The first half of 2024 is projected to remain somewhat depressed, with growth momentum expected to recover in the second half. Overall, TSMC projects IoT unit shipments will enjoy a high-single-digit growth in 2024. Additionally, as more AI functions to be incorporated, IoT devices will require chips with higher performance and lower power consumption. TSMC offers various manufacturing processes that supports the need of IoT industry, including advanced technology, ultra-low power (ULP), and various special process technologies, to support customers in providing differentiated, innovative and competitive products, and fulfill requirements of sustainability development.

- Automotive

The global automotive market continues to recover from the supply constraints of the past couple years. Worldwide car unit production grew 9% in 2023, supported by pent-up consumer demand and OEM inventory restocking as supply chains normalized. The ongoing headwinds of high inflation and macro-economic uncertainty, however, are expected to hold global car unit production to low-single-digit decline in 2024.

The megatrend in the automotive industry today is moving toward "greener, safer and smarter," which will accelerate the adoption of electric vehicles (EVs), advanced driver assistance systems (ADAS) and smart cockpit/infotainment systems, along with new electrical/electronic (E/E) architecture. All these will lead to further boost demand for Application Processor (AP)/Microcontroller Unit (MCU)/ASIC processors, in-car networking, sensors, and power management ICs (PMICs), thus continuously increasing the silicon content per car. TSMC is well-positioned to support the automotive industry's megatrend transition, by providing advanced process technologies and manufacturing solutions that enable customers to develop competitive products for the automotive market. In addition, TSMC also offers a range of automotive-grade manufacturing processes, including those with AEC-Q100 and ISO 26262 certification, to ensure the highest levels of quality and reliability for automotive applications.

- Digital Consumer Electronics (DCE)

The global DCE market declined 3% in 2023 as overall demand was sluggish for TVs, set-top boxes (STB) and other consumer products that sold well during pandemic. Fighting longer replacement cycles, as well as high inflation squeezing consumer budgets, the TV market had a modest upswing of shipments in the U.S. due to restocking of low channel inventory but it was offset by weak demand in China, where economic growth has slowed and consumer spending fell due to a variety of factors including a weakened housing market, low marriage rates, and the US-China decoupling.

In 2024, the DCE market is expected to have gradual recovery in Europe and emerging regions. Therefore, TSMC forecasts shipments to show a low-single-digit annual growth rate. Potential growth drivers of the DCE market include large screens, 120Hz/165Hz high frame rate Gaming TVs, voice AI control, and WiFi 6 connectivity. Regardless of the timing of the recovery, TSMC's advanced technologies will continue to enable DCE customers to create and differentiate their innovative products.

Supply Chain

The electronics industry features a long and complex supply chain, the elements of which are correlated and highly interdependent. At the upstream manufacturing level, IC vendors need to have sufficient and flexible supply deliveries to handle fluctuating demand dynamics. Foundry vendors play an important role in maintaining the health and effectiveness of the supply chain. As a leader in the foundry segment, TSMC provides advanced technologies and large-scale capacity to complement the innovations created in the downstream chain.

2.2.4 TSMC Position, Differentiation and Strategy

Position

TSMC is a global semiconductor foundry leader in advanced and specialty technologies and in advanced packaging technologies. In 2023, TSMC accounted for 28% of the worldwide semiconductor market excluding memory, a decrease from 30% in 2022, mainly due to the semiconductor industry inventory correction. Net revenue by geography, calculated mainly on the country in which customer companies are headquartered, was: 68% from North America; 12% from China; 8% from the Asia Pacific region, excluding China and Japan; 6% from Europe, the Middle East and Africa; and 6% from Japan. Net revenue by platform was: 43% HPC; 38% smartphones; 8% the IoT; and 6% automotive. In addition, 2% came from DCE, while other segments accounted for the remaining 3%.

Differentiation

TSMC's leadership position is based on three defining competitive strengths and a business strategy rooted in the Company's heritage. The Company distinguishes itself from the competition through its technology leadership, manufacturing excellence, and customer trust.

As a technology leader, TSMC is consistently first among dedicated foundries to provide leading-edge, next-generation technologies. The Company also maintains a leadership position in more mature technologies by applying the lessons learned in developing advanced technologies to enrich its specialty technologies. Beyond process technology, TSMC has established frontend and backend integration capabilities to create the optimum power/performance/area "sweet spot" to help customers achieve faster time to production.

TSMC is well recognized for industry-leading manufacturing capabilities and further extends its leadership through its Open Innovation Platform® (OIP) and Grand Alliance initiatives. The Company's OIP initiative accelerates the pace of innovation in the semiconductor design community and among the Company's ecosystem partners, as well as in its own IP, design and technology co-optimization (DTCO) capabilities, process technology and backend services. A key element is a set of ecosystem interfaces and collaborative components initiated and supported by the Company to more efficiently empower innovation throughout the supply chain and drive the creation and sharing of new revenue and profits. The TSMC Grand Alliance is one of the most powerful forces for innovation in the semiconductor industry, bringing together customers, electronic design automation (EDA) partners and IP partners, along with the partners in the new 3DFabric® Alliance, and key equipment and material suppliers – all to achieve new, higher levels of collaboration. Through this collaboration, the Grand Alliance's objective is to help customers, Alliance members and TSMC improve competitiveness and win business.

The foundation for customer trust is a commitment TSMC made when it opened for business in 1987 to never compete with its customers. In keeping this commitment, the Company has never designed, manufactured or marketed any integrated circuits under its own name, but instead has focused all of its efforts and resources on becoming the trusted foundry for its customers.

Strategy

TSMC is confident that its competitive advantages will enable it to prosper from the foundry segment's many attractive growth opportunities. For the five major markets, namely smartphones, high performance computing, the Internet of Things, automotive, and digital consumer electronics, and in response to the fact that the focus of customer demand is shifting from a process-technology-centric to a product-application-centric approach, the Company has constructed five corresponding technology platforms to provide customers with comprehensive, competitive logic process technologies, specialty technologies, IPs and packaging and testing technologies to shorten customers' time to design and time to market. These five platforms are:

High Performance Computing (HPC): Driven by data explosion and AI application innovation, HPC has become one of the key growth drivers for TSMC's business. TSMC provides customers, including both fabless IC design companies and system companies, with leading-edge logic process technologies such as 3nm FinFET (N3), 4nm FinFET (N4), 5nm FinFET (N5), 6nm FinFET (N6), 7nm FinFET (N7), and 12nm/16nm FinFET (N12/N16), as well as comprehensive IPs including high-speed interconnect IPs, to meet customers' product requirements for transferring and processing vast amounts of data anywhere at any time. Specifically, the Company introduced its HPC focused technologies, N4X and N3X, representing the ultimate performance and maximum clock frequencies in TSMC's 5nm and 3nm families, respectively. Based on advanced process nodes, a variety of HPC products have been launched, such as AI accelerators (AI GPUs and AI ASICs), PC CPUs, consumer GPUs, field programmable gate arrays (FPGAs), server processors, and high-speed networking chips, etc. These products can be used in current and future 5G/6G infrastructures, AI, Cloud, and enterprise data centers. The Company also offers multiple TSMC 3DFabric® advanced packaging and silicon stacking technologies, such as CoWoS®, Integrated Fan-Out (InFO), and TSMC-SoIC®, to enable homogeneous and heterogeneous chip integration to meet customer requirements for high performance, high compute density and high energy efficiency, low latency, and high integration. TSMC will continue to optimize its high performance computing platform and strengthen collaboration with customers to help them capture market growth in HPC markets.

Smartphone: For customers' premium product applications, TSMC offers leading logic process technologies such as N3 Enhanced (N3E), N3, N4 Plus (N4P), N4, N5 Plus (N5P), N5, as well as comprehensive IPs to further enhance chip performance, reduce power consumption, and decrease chip size. For mainstream product applications, the Company offers a broad range of logic process technologies, including N6, 7nm FinFET Plus (N7+), N7, 12nm FinFET compact plus (12FFC+), 12nm FinFET compact (12FFC), 16nm FinFET compact plus (16FFC+), 16nm FinFET compact (16FFC), 28nm high performance compact (28HPC), 28nm high performance mobile compact plus (28HPC+), and 22nm ultra-low power (22ULP), in addition to comprehensive IPs, to satisfy customer needs for high performance and low power chips. Furthermore, for premium and mainstream product applications, the Company offers highly competitive, leading-edge specialty technologies to deliver specialty companion chips for customers' logic application processors, including radio frequency (RF), RF frontend, embedded flash memory, emerging memory, power management ICs, sensors, and display chips, as well as TSMC 3DFabric® advanced packaging technologies, such as industry-leading InFO technology.

Internet of Things (IoT): To serve the three megatrends of the IoT, "everything connected, smart and green," TSMC not only provides customers with solid logic technologies, including 5nm, 6nm, 7nm, 12nm, 16nm, and 28nm, but also builds a leading, complete and highly integrated ULP technology platform based on its logic technologies to enable customers' product innovations for the artificial intelligence of things (AIoT).

TSMC's industry-leading ULP technologies, including the new FinFET-based 6nm technology – N6e™ and 12nm technology – N12e™, feature both energy efficiency and high performance. These technologies provide more computing power and AI inferencing capability while reducing system power consumption. In addition, the planar transistor based mainstream technologies, such as 22nm ultra-low leakage (ULL), 28nm ULP, 40nm ULP, and 55nm ULP technologies, have been widely adopted by various IoT system-on-a-chip (SoC) and battery-powered products to extend battery life.

TSMC's ULP technology platform also provides customers with comprehensive specialty technologies, covering RF, enhanced analog devices, embedded flash memory, emerging memory, sensors and display devices, and power management ICs, as well as multiple TSMC 3DFabric® advanced packaging technologies, including InFO technology. In doing so, TSMC supports the demand of various and rapidly growing AIoT product applications, including AP and edge computing MCU, wireless connectivity, Bluetooth, baseband processor, radio frequency identification (RFID), display devices and PMICs. For extreme low power product application requirements, TSMC has also extended its low operating voltage (Low Vdd) offerings and has provided simulation program with integrated circuit emphasis (SPICE) models with wide-range operating voltages and design guidelines to lower the adoption barrier and reduce product lead time to help customers successfully launch innovative products.

Automotive: TSMC offers a comprehensive spectrum of technologies and services to support the automotive industry's three megatrends – building vehicles that are "safer, smarter and greener". The Company is also an industry leader in providing a robust automotive IP ecosystem, which covers 5nm FinFET, 7nm FinFET, and 16nm FinFET technologies, for ADAS, advanced in-vehicle infotainment (IVI), as well as zonal controllers for new E/E architecture in the next generation vehicles (internal combustion engine (ICE) and EV). In 2023, TSMC introduced its N3 Auto Early (N3AE) program, providing automotive process design kits (PDKs) to support automotive customers to adopt the industry's most advanced 3nm technology early on to design automotive application products.

In addition to its advanced logic platform, TSMC offers a broad array of competitive automotive-grade specialty technologies including 28nm embedded flash memory, 28nm, 22nm, and 16nm mmWave RF, high sensitivity CMOS Image Sensor (CIS)/light detection and ranging (LiDAR) sensors, and PMICs. The emerging technology of magneto-resistive random access memory (MRAM) has demonstrated automotive Grade-1 capability on 22nm and has passed automotive Grade-1 requirements on 16nm in 2023. All these technologies are applied to TSMC's automotive process qualification standards based on AEC-Q100 standards of Automotive Electronic Council (AEC) and/or meeting customers' technology specifications.

Digital Consumer Electronics (DCE): TSMC provides customers with leading, comprehensive technologies to deliver AI-enabled smart devices for DCE applications, including smart digital TVs (DTV), STB, AI-embedded smart cameras and associated wireless local area networks (WLAN), PMICs, and timing controllers (T-CON) . The Company's leading N6, N7, 16FFC/12FFC, 22ULP/22ULL and 28HPC+ technologies have been widely adopted by leading global makers of 8K/4K DTV, 4K streaming STB/over-the-top (OTT), digital single-lens reflex (DSLR) devices, and so on. TSMC will continue to make these technologies more cost competitive through die size shrink for customers' digital intensive chip designs and to drive lower power consumption for more cost-effective packaging.

TSMC continually strengthens its core competitiveness and deploys both short- and long-term plans for technology and business development and assists customers in taking on the challenges of short product cycles and intense competition in the electronic products market to meet return on investment (ROI) and growth objectives.

- Short-Term Semiconductor Business Development Plan

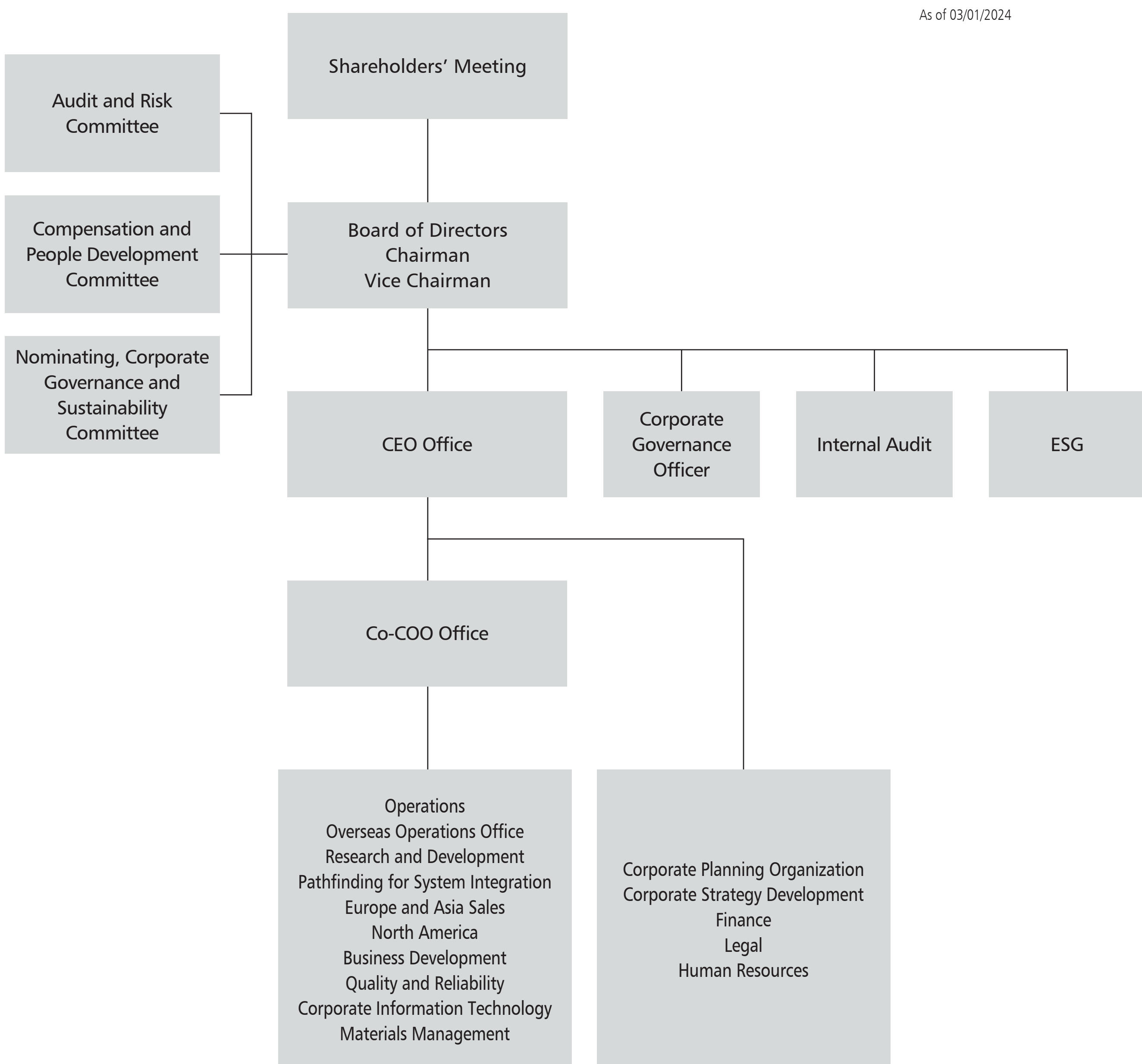
1. Substantially ramp up the business and sustain advanced technology market segment share by continually increasing capacity and R&D investments.
2. Maintain mainstream technology market segment share by expanding business to new customers and market segments.
3. Continue to enhance the competitive advantages of the Company's technology platforms in HPC, smartphones, IoT, automotive, and digital consumer electronics to expand TSMC's dedicated foundry services in these product applications.
4. Further expand TSMC's business and service infrastructure into emerging and developing markets.

- Long-Term Semiconductor Business Development Plan

1. Continue developing leading-edge technologies at a predictable pace to achieve greater energy-efficient computing.
2. Broaden specialty business contributions by further developing derivative technologies.
3. Provide more integrated services, covering system-level integration design, design technology definition, design tool preparation, wafer processing, TSMC 3DFabric® advanced packaging and silicon stacking technologies, and testing services, and so on, all of which deliver more value to customers through optimized solutions.

2.3 Organization

2.3.1 Organization Chart



2.3.2 Major Corporate Functions

Operations
- Includes managing all fabs in Taiwan and overseas; manufacturing technology development; product engineering, advanced packaging technology development, production and service integration

Overseas Operations Office
- Support the expansion of our global footprint and oversee TSMC Arizona Organization, JASM Organization and ESMC Organization

Research and Development
- Advanced technology development, exploratory research, and design and technology platform development, specialty technology development

Pathfinding for System Integration
- System Integration Technology Pathfinding

Europe and Asia Sales
- Customer business, technical marketing, and regional market development in Europe and Asia (China, Japan, South Korea and Taiwan); immediate and comprehensive technical support, as well as customer service including customers in North America

North America
- Sales and market development, field technical solutions and business operations for customers in North America

Business Development
- Identification of market trends and new applications that shape the technology roadmap and portfolios for the Company; also provides key support in strengthening customer relationships along with Company branding management

Quality and Reliability
- Assurance of the quality and reliability of the Company's products by resolving issues at the developmental stage; improving and managing product quality at the production stage; providing solutions to customers' quality related issues; and providing services for advanced materials and failure analysis

Corporate Information Technology
- Integration of the Company's technology and business IT systems; infrastructure development; implementing big data and machine learning to improve the Company's productivity and accelerate R&D delivery

Materials Management
- Procurement, warehousing, import and export, and logistics support

Corporate Planning Organization
- Planning for operational resources, as well as for production and demand; integration of business processes, corporate pricing, market analysis and forecasting

Corporate Strategy Development
- Risk Management
  Implementation of Enterprise Risk Management, Business Continuity Management and Crisis Management

- Corporate Environmental, Safety and Health
  Environmental protection, safety and health management and strategy formulation

- Corporate Information Security
  Communication services and assurance of IT security and service quality

Finance and Spokesperson
- Corporate finance, accounting and corporate communications; with the head of the organization also serving as the Company Spokesperson

Legal
- Corporate legal affairs including regulatory compliance, commercial transactions, patents and management of other intellectual properties, and litigation

Human Resources
- Personnel management, organizational development, physical security management, employee services and wellness management

Internal Audit
- Inspection and review of the Company's internal control system, its adequacy in design and effectiveness in operation, with independent risk assessment to ensure compliance with the Company's policies and procedures as well as with external regulations

ESG
- Identify ESG issues in relation to the Company's operations and stakeholders' concern, frame sustainability strategies, goals, action plans and track implementation results, continuing to create sustainability value

2.4 Board Members

2.4.1 Information Regarding Board Members

As of 02/29/2024

Title/Name	Gender Age	Nationality or Place of Registration	Date Elected	Term Expires	Date First Elected	Shares Held When Elected		Shares Currently Held		Shares Currently Held by Spouse & Minors		Selected Education and Professional Qualification Past Positions Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares (Note 1)	%	Shares (Note 1)	%	Shares (Note 1)	%		
Chairman Mark Liu	Male 66-70	U.S.	07/26/2021	07/25/2024	06/08/2017	12,913,114	0.05%	12,967,192	0.05%	-	-	**Selected Education and Professional Qualification** Bachelor Degree in Electrical Engineering, National Taiwan University Master Degree and Ph.D. in Electrical Engineering & Computer Science, University of California, Berkeley, U.S. Laureate, Industrial Technology Research Institute (ITRI) **Past Positions** President, Worldwide Semiconductor Manufacturing Corp. Senior Vice President, Advanced Technology Business, TSMC Senior Vice President, Operations, TSMC Executive Vice President and Co-Chief Operating Officer, TSMC President and Co-CEO, TSMC Chairman, Taiwan Semiconductor Industry Association (TSIA)	None
Vice Chairman C.C. Wei	Male 71-75	R.O.C.	07/26/2021	07/25/2024	06/08/2017	7,179,207	0.03%	6,392,834	0.02%	700,261	0.00%	**Selected Education and Professional Qualification** Bachelor and Master Degrees in Electrical Engineering, National Chiao Tung University Ph.D. in Electrical Engineering, Yale University, U.S. Honorary Ph.D., National Yang Ming Chiao Tung University Laureate, Industrial Technology Research Institute (ITRI) **Past Positions** Senior Vice President, Technology, Chartered Semiconductor Manufacturing Ltd., Singapore Senior Vice President, Mainstream Technology Business, TSMC Senior Vice President, Business Development, TSMC Executive Vice President and Co-Chief Operating Officer, TSMC President and Co-CEO, TSMC Chairman, Taiwan Semiconductor Industry Association (TSIA)	CEO, TSMC
Director F.C. Tseng	Male 76-80	R.O.C.	07/26/2021	07/25/2024	05/13/1997	34,472,675	0.13%	29,472,675	0.11%	5,132,855	0.02%	**Selected Education and Professional Qualification** Bachelor Degree in Electrical Engineering, National Cheng Kung University Master Degree in Electrical Engineering, National Chiao Tung University Ph.D. in Electrical Engineering, National Cheng Kung University Honorary Ph.D., National Chiao Tung University Honorary Ph.D., National Tsing Hua University **Past Positions** President, Vanguard International Semiconductor Corp. President, TSMC Deputy CEO, TSMC Vice Chairman, TSMC Independent Director, Chairman of Audit Committee & Compensation Committee Member, Acer Inc. Director, National Culture and Arts Foundation, R.O.C. **Current Positions at Non-profit Organizations** Chairman, TSMC Education and Culture Foundation Director, Cloud Gate Culture and Arts Foundation Director, Chu-Ming Medical Foundation	Chairman of: - TSMC China Company Ltd. (a non-public company) - Global UniChip Corp. Vice Chairman, Vanguard International Semiconductor Corp.
Director National Development Fund, Executive Yuan (Note 2)			07/26/2021	07/25/2024	12/10/1986	1,653,709,980	6.38%	1,653,709,980	6.38%	-	-		
Representative: Ming-Hsin Kung	Male 56-60	R.O.C.			07/24/2020 (Note 3)	779 (Note 3)	0.00%	779	0.00%	-	-	**Selected Education and Professional Qualification** Bachelor Degree in Statistics, Fu Jen Catholic University Master Degree in Economics, National Taiwan University Ph.D. in Economics, National Chung Hsing University **Past Positions** Adjunct Assistant Professor, Tamkang University Deputy Executive Secretary, Industrial Development Advisory Council, Ministry of Economic Affairs Research Fellow, Science and Technology Advisory Group, Executive Yuan Research Fellow, Taiwan Institute of Economic Research Vice President, Taiwan Institute of Economic Research Advisory Committee Member, Mainland Affairs Council, Executive Yuan Consultant, Ministry of Economic Affairs Member, National Stabilization Fund Management Committee, Executive Yuan Deputy Minister, National Development Council & concurrently Executive Secretary, National Development Fund, Executive Yuan Deputy Minister, Ministry of Economic Affairs Minister without Portfolio, Executive Yuan **Current Positions at Non-profit Organizations** Minister without Portfolio, Executive Yuan & concurrently Minister, National Development Council The Convener of National Development Fund, Executive Yuan	Director, Taiwania Capital Management Corp. (Representative of National Development Fund, Executive Yuan) (a non-public company)

(Continued)

Title/Name	Gender Age	Nationality or Place of Registration	Date Elected	Term Expires	Date First Elected	Shares Held When Elected		Shares Currently Held		Shares Currently Held by Spouse & Minors		Selected Education and Professional Qualification Past Positions Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares (Note 1)	%	Shares (Note 1)	%	Shares (Note 1)	%		
Independent Director Sir Peter L. Bonfield	Male 76-80	UK	07/26/2021	07/25/2024	05/07/2002	-	-	-	-	-	-	**Selected Education and Professional Qualification** Bachelor Degree in Engineering, Loughborough University Honorary Doctorate of Technology, Loughborough University Fellow of the Royal Academy of Engineering Knighted, 1996 Awarded Commander of the Order of the British Empire (CBE), 1989 Awarded the Order of the Lion of Finland Awarded the Gold Medal from the Institute of Management Awarded the Mountbatten Medal from the National Electronics Council Awarded the FT ODX Outstanding Director Award, 2019 11 Honorary Doctorate Degrees in total **Past Positions** Semiconductor Engineer, Texas Instruments Inc. (T.I.), U.S. Chairman and CEO, ICL Plc, UK CEO and Chairman of the Executive Committee, British Telecommunications Plc Vice President, the British Quality Foundation Director, Mentor Graphics Corp., U.S. Director, Sony Corp., Japan Director, L.M. Ericsson, Sweden Chairman, GlobalLogic Inc., U.S. Senior Advisor, Hampton Group, London Chair of Council and Senior Pro-Chancellor, Loughborough University, UK Board Member, EastWest Institute, New York Chairman, NXP Semiconductors N.V., the Netherlands Senior Advisor, Alix Partners LLP, London Advisory Board Member, The Longreach Group Ltd., HK Board Mentor, Chairman Mentors International (CMi) Ltd., London	Non-Executive Director of: - Imagination Technologies Group Ltd., UK (a non-public company) - Darktrace Plc, UK
Independent Director Kok-Choo Chen	Female 76-80	R.O.C.	07/26/2021	07/25/2024	06/09/2011	-	-	-	-	-	-	**Selected Education and Professional Qualification** Inns of Court School of Law, England Barrister-at-law, England Advocate & Solicitor, Singapore Attorney-at-law, California, U.S. **Professional Experience** Lawyer, Tan, Rajah & Cheah, Singapore (1969-1970) Lawyer, Sullivan & Cromwell, New York, U.S. (1971-1974) Lawyer, Heller, Erhman, White & McAuliffe, San Francisco, California, U.S. (1974-1975) Partner, Ding & Ding Law Offices, R.O.C. (1975-1988) Partner, Chen & Associates Law Offices, R.O.C. (1988-1992) Vice President, Echo Publishing, R.O.C. (1992-1995) President, National Culture and Arts Foundation, R.O.C. (1995-1997) Senior Vice-President and General Counsel, TSMC (1997-2001) Founder and Executive Director, Taipei Story House (2003-2015) Advisor, Executive Yuan, R.O.C. (2009-2016) Director, National Culture and Arts Foundation, R.O.C. (2011-2016) Chairman, National Performing Arts Center (2014-2017) Founder and Executive Director, Museum207, Taipei (2017-2022) **Academic Experience** Lecturer, Nanyang University, Singapore (1970-1971) Associate Professor, Soochow University (1981-1998) Chair Professor, National Tsing Hua University (1999-2002) Professor, National Chengchi University (2001-2004) Professor, Soochow University (2001-2008) **Current Positions at Non-profit Organizations** Director, Republic of China Female Cancer Foundation Founder and Chairman, Artspace K, Hong Kong (2020-)	None
Independent Director Michael R. Splinter	Male 71-75	U.S.	07/26/2021	07/25/2024	06/09/2015	-	-	-	-	-	-	**Selected Education and Professional Qualification** Bachelor and Master Degrees in Electrical Engineering, University of Wisconsin-Madison Honorary Ph.D in Engineering, University of Wisconsin-Madison Awarded 2013 Robert N. Noyce Award by Semiconductor Industry Association Member of the National Academy of Engineering Recognized as NACD (National Association of Corporate Directors) Directorship Certified^{TM}, 2020 **Past Positions** Executive Vice President of Technology and Manufacturing Group, Intel Corp. Executive Vice President of Sales and Marketing, Intel Corp. CEO, Applied Materials, Inc. Chairman, Applied Materials, Inc. Director, The NASDAQ OMX Group, Inc. Director, Silicon Valley Leadership Group Director, SEMI Director, Meyer Burger Technology Ltd., Switzerland Chairman of the Board, NASDAQ, Inc. Director, Pica8 Inc., U.S. Director, University of Wisconsin Foundation, U.S. Chairman of the Board, US-Taiwan Business Council **Current Positions at Non-profit Organizations** Chair of Industrial Advisory Committee, National Institute of Standards and Technology, Department of Commerce, U.S.	Lead Independent Director, NASDAQ, Inc. Independent Director and Compensation Committee Chair, Gogoro Inc., Cayman Islands Independent Director, Compensation Committee Chair, and Nominating and Corporate Governance Committee Member, Tigo Energy, Inc., U.S. Independent Director, Kioxia Holdings Corp., Japan (a non-public company) General Partner of: - WISC Partners LP, U.S. - MRS Business and Technology Advisors, U.S. (a non-public company)

(Continued)

Title/Name	Gender Age	Nationality or Place of Registration	Date Elected	Term Expires	Date First Elected	Shares Held When Elected		Shares Currently Held		Shares Currently Held by Spouse & Minors		Selected Education and Professional Qualification Past Positions Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares (Note 1)	%	Shares (Note 1)	%	Shares (Note 1)	%		
Independent Director Moshe N. Gavrielov	Male 66-70	U.S.	07/26/2021	07/25/2024	06/05/2019	-	-	-	-	-	-	**Selected Education and Professional Qualification** Bachelor Degree in Electrical Engineering, Technion - Israel Institute of Technology Master Degree in Computer Science, Technion - Israel Institute of Technology **Past Positions** In a variety of engineering and engineering management positions, National Semiconductor Corp. and Digital Equipment Corp., U.S. In a variety of executive management positions, LSI Logic Corp. for nearly 10 years, U.S. CEO, Verisity, Ltd., U.S. Executive Vice President and General Manager of the Verification Division, Cadence Design Systems, Inc., U.S. President and CEO, Xilinx, Inc., U.S. Director, Xilinx, Inc., U.S. Executive Chairman, Wind River Systems, Inc., U.S. (2018-2022) Director, San Jose Institute of Contemporary Art, U.S.	Chairman of: - SiMa Technologies, Inc., U.S. (a non-public company) - Foretellix, Ltd., Israel (a non-public company) Independent Director, NXP Semiconductors N.V., the Netherlands
Independent Director Yancey Hai	Male 71-75	R.O.C. U.S.	07/26/2021	07/25/2024	06/09/2020	-	-	-	-	-	-	**Selected Education and Professional Qualification** Master Degree in International Business Management, University of Texas at Dallas Laureate, Industrial Technology Research Institute (ITRI) **Past Positions** Country Manager, GE Capital Taiwan Vice Chairman and CEO, Delta Electronics, Inc. (2004-2012) Chair, Strategic Steering Committee, Delta (2012-2021) **Current Positions at Non-profit Organizations** Senior Strategy Consultant, Cloud Computing & IoT Association in Taiwan Director, Taiwan Business Council for Sustainable Development Director, Delta Electronic Foundation Supervisor, Felix Chang Foundation Director and Finance Committee Member, Chiang Ching-Kuo Foundation for International Scholarly Exchange Chairman, Taiwan Climate Partnership	Chairman, Delta Electronics, Inc. (Delta), 2012- Chair of ESG Committee, Delta Director of Delta's subsidiaries: - Delta Electronics (Shanghai) Co., Ltd. (a non-public company) - Delta Networks, Inc. (a non-public company) - Delta Electronics Capital Company (a non-public company) - Cyntec Co., Ltd. (a non-public company) Independent Director, Audit Committee member, ESG Committee member and Convener of Remuneration Committee, USI Corporation Director and Commissioner of ESG & Net Zero Committee, CTCI Corporation
Independent Director L. Rafael Reif	Male 71-75	U.S.	07/26/2021	07/25/2024	07/26/2021	-	-	-	-	-	-	**Selected Education and Professional Qualification** Ingeniero Eléctrico Degree, Universidad de Carabobo, Valencia, Venezuela Master Degree and Ph.D. in Electrical Engineering, Stanford University Honorary Doctor of Laws Degree, The Chinese University of Hong Kong (2015) Honorary Doctorates from Tsinghua University (2016), the Technion (2017), Arizona State University (2018) and University of Miami (2022) Member of Tau Beta Pi, the Engineering Honor Society Member of the Electrochemical Society Fellow of the Institute of Electrical and Electronics Engineers (IEEE) Member of the American Academy of Arts and Sciences, the National Academy of Engineering and the Chinese Academy of Engineering Fellow of the National Academy of Inventors Awarded with United States Presidential Young Investigator Award (1984) Awarded with the Semiconductor Research Corporation's Aristotle Award (2000) Awarded the Tribeca Disruptive Innovation Award (2012) Awarded the Frank E. Taplin, Jr. Public Intellectual Award by the Woodrow Wilson National Fellowship Foundation (2015) Awarded with Engineer of the Year from Great Minds in STEM (2018) Awarded the Simon Ramo Founders Award by the U.S. National Academy of Engineering (2022) Inventor or co-inventor on 13 patents, editor or Co-editor of 5 books, and supervisor to 38 doctoral theses **Past Positions** Assistant Professor, Universidad Simón Bolívar, Caracas, Venezuela Visiting Assistant Professor of Electrical Engineering, Stanford University Faculty, Massachusetts Institute of Technology (MIT), since 1980 IBM Faculty Fellowship, MIT Center for Materials Science and Engineering Analog Devices Career Development Professorship, MIT Electrical Engineering Fariborz Maseeh Professor of Emerging Technology, MIT (2004-2012) Director of Microsystems Technology Laboratories, MIT Associate Department Head of Electrical Engineering, MIT Head of the Department of Electrical Engineering and Computer Science (EECS), MIT Provost, MIT Board Director, Schlumberger Limited President, MIT (2012-2022) **Current Positions at Non-profit Organizations** President Emeritus, MIT, since 2023 Ray and Maria Stata Professor of Electrical Engineering and Computer Science, MIT, since 2023 Member of Board of Trustees, Carnegie Endowment for International Peace Director, Council on Foreign Relations, U.S. Director, Waverley Street Foundation, U.S. Member, Board of Trustees, Instituto Tecnológico de Monterrey, Mexico	Co-Chair of Growth Technical Advisory Board, Applied Materials, Inc.

Remarks:
1. No member of the Board of Directors held TSMC shares by nominee arrangement.
2. Managers or Directors who are spouses or within second-degree relative of consanguinity to the directors: None.
3. Chairman and President (or someone with an equivalent job responsibility, i.e. the highest ranking manager of the company) are not (1) the same person, (2) in a marital relationship with each other, or (3) within one degree of consanguinity.

Note 1: Does not include shares held in the form of ADSs.
Note 2: Major Shareholders of the Institutional Shareholder

Institutional Shareholder	Major Shareholders (Top 10 Shareholders) of the Institutional Shareholder
National Development Fund, Executive Yuan	Not Applicable

Note 3: Mr. Ming-Hsin Kung was appointed as the representative of National Development Fund on July 24, 2020.

2.4.2 Remuneration of Directors and Independent Directors (Note 1)

Unit: NT$

Title/Name	Director's Remuneration								Amount and Ratio of Total A, B, C and D to Net Income		Compensation to a Director Who is an Employee of TSMC or of TSMC's Consolidated Entities								Amount and Ratio of Total A, B, C, D, E, F and G to Net Income (Note 5)		Compensation to Directors from Non-consolidated Affiliates or Parent Company
	Base Compensation (A)		Severance Pay and Pensions (B) (Note 2)		Compensation to Directors (C) (Note 3)		Allowances (D) (Note 4)				Base Compensation, Bonuses, and Allowances (E) (Note 4)		Severance Pay and Pensions (F) (Note 2)		Profit Sharing (G)						
	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC		From All Consolidated Entities		From TSMC	From All Consolidated Entities	
															Cash	Stock (Fair Market Value)	Cash	Stock (Fair Market Value)			
Chairman Mark Liu	80,605,415	80,605,415	278,299	278,299	438,652,560	438,652,560	1,417,464	1,417,464	520,953,738 0.0621%	520,953,738 0.0621%	-	-	-	-	-	-	-	-	520,953,738 0.0621%	520,953,738 0.0621%	-
Vice Chairman C.C. Wei	-	-	-	-	-	-	-	-	-	-	328,137,656	328,137,656	278,299	278,299	219,326,280	-	219,326,280	-	547,742,235 0.0653%	547,742,235 0.0653%	-
Director F.C. Tseng	-	-	-	-	10,560,000	10,560,000	1,221,743	1,221,743	11,781,743 0.0014%	11,781,743 0.0014%	-	-	-	-	-	-	-	-	11,781,743 0.0014%	11,781,743 0.0014%	19,450,666
Director National Development Fund, Executive Yuan Representative: Ming-Hsin Kung	-	-	-	-	10,560,000	10,560,000	-	-	10,560,000 0.0013%	10,560,000 0.0013%	-	-	-	-	-	-	-	-	10,560,000 0.0013%	10,560,000 0.0013%	-
Independent Director Sir Peter L. Bonfield	-	-	-	-	16,445,264	16,445,264	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-	-	-	-	-	-	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-
Independent Director Kok-Choo Chen	-	-	-	-	13,200,000	13,200,000	-	-	13,200,000 0.0016%	13,200,000 0.0016%	-	-	-	-	-	-	-	-	13,200,000 0.0016%	13,200,000 0.0016%	-
Independent Director Michael R. Splinter	-	-	-	-	16,445,264	16,445,264	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-	-	-	-	-	-	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-
Independent Director Moshe N. Gavrielov	-	-	-	-	16,445,264	16,445,264	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-	-	-	-	-	-	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-
Independent Director Yancey Hai	-	-	-	-	13,200,000	13,200,000	-	-	13,200,000 0.0016%	13,200,000 0.0016%	-	-	-	-	-	-	-	-	13,200,000 0.0016%	13,200,000 0.0016%	-
Independent Director L. Rafael Reif	-	-	-	-	16,445,264	16,445,264	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-	-	-	-	-	-	-	-	16,445,264 0.0020%	16,445,264 0.0020%	-
Total	80,605,415	80,605,415	278,299	278,299	551,953,616	551,953,616	2,639,207	2,639,207	635,476,537 0.0758%	635,476,537 0.0758%	328,137,656	328,137,656	278,299	278,299	219,326,280	-	219,326,280	-	1,183,218,772 0.1411%	1,183,218,772 0.1411%	19,450,666

*Other than disclosure in the above table, Directors remunerations earned by providing services (e.g. providing consulting services as a non-employee of parent company/all consolidated entities/non-consolidated affiliates) to TSMC and all consolidated entities in the 2023 financial statements: Dr. F.C. Tseng for NT$17,783,760.

Note 1: Directors and Independent Directors' remuneration policies, procedures, standards and structure, as well as the linkage to responsibilities, risks and time spent:
- According to TSMC's Articles of Incorporation, the Board of Directors is authorized to determine the salary for the Chairman, Vice Chairman and Directors, taking into account the extent and value of the services provided for the management of the Corporation and the standards of the industry within the R.O.C. and overseas.
- The Articles of Incorporation also provide that the compensation to directors shall be no more than 0.3% of annual profits and directors who also serve as executive officers of TSMC are not entitled to receive compensation to directors. According to TSMC's Compensation and People Development Committee Charter, the distribution of compensation to directors shall be made in accordance with TSMC's "Rules for Distribution of Compensation to Directors" based on the following principles: (1) directors who also serve as executive officers of the Company are not entitled to receive compensation; (2) the compensation for independent directors may be higher than the other directors, as all independent directors also serve as members of the Audit and Risk Committee and the Compensation and People Development Committee and thus participate in the discussions as well as resolutions of related committee meetings in accordance with the charter of each committee; and (3) the compensation for overseas independent directors may be higher than domestic independent directors, as they require additional time to attend quarterly meetings in Taiwan.

Note 2: Pensions funded according to applicable law.

Note 3: The compensation of directors was expensed based on the estimated payment amounts. If the actual amounts subsequently paid differ from the above estimated amounts, the differences will be recorded in the year fully paid as a change in accounting estimate.

Note 4: The above-mentioned figures include expenses for Company cars and related reimbursements, but do not include compensation of Company drivers (totaled NT$5,034,409).

Note 5: Total remuneration of the directors from TSMC and from all consolidated entities in 2022, including their employee compensation, both accounted for 0.1365% of 2022 net income.

2.5 Management Team

2.5.1 Information Regarding Management Team

As of 02/29/2024

Title Name	Gender	Nationality	On-board Date (Note 1)	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Education and Selected Past Positions	Selected Current Positions at Other Companies	Managers Who Are Spouses or within Second-degree Relative of Consanguinity to Each Other (Note 3)		
				Shares (Note 2)	%	Shares (Note 2)	%	Shares (Note 2)	%			Title	Name	Relation
Chief Executive Officer C.C. Wei	Male	R.O.C.	02/01/1998	6,392,834	0.02%	700,261	0.00%	-	-	Ph.D., Electrical Engineering, Yale University, U.S. President and Co-Chief Executive Officer, TSMC Executive Vice President and Co-Chief Operating Officer, TSMC Senior Vice President, Business Development, TSMC Senior Vice President, Mainstream Technology Business, TSMC Senior Vice President, Chartered Semiconductor Manufacturing Ltd.	None	None	None	None
Senior Vice President Human Resources Lora Ho	Female	R.O.C.	06/01/1999	4,414,753	0.02%	2,059,530	0.01%	-	-	Master, Business Administration, National Taiwan University, Taiwan Senior Vice President, Europe and Asia Sales, TSMC Senior Vice President, Chief Financial Officer/Spokesperson, TSMC Senior Director, Accounting, TSMC Vice President & CFO, TI-Acer Semiconductor Manufacturing Corp.	Director and/or Supervisor, TSMC subsidiaries	None	None	None
Senior Vice President Research and Development Wei-Jen Lo	Male	R.O.C.	07/01/2004	1,457,328	0.01%	-	-	-	-	Ph.D., Solid State Physics and Surface Chemistry, University of California, Berkeley, U.S. Vice President, Technology Development, TSMC Vice President, Manufacturing Technology, TSMC Vice President, Advanced Technology Business, TSMC Vice President, Operations II, TSMC Director, Advanced Technology Development and CTM Plant Manager, Intel Corp.	None	None	None	None
Senior Vice President Corporate Strategy Office & Overseas Operations Office Chairman TSMC AZ Rick Cassidy	Male	U.S.	11/14/1997	-	-	-	-	-	-	Bachelor, Engineering Technology, United States Military Academy at West Point, U.S. Chief Executive Officer, TSMC North America President, TSMC North America Vice President, TSMC North America	Director, TSMC subsidiary	None	None	None
Senior Vice President Operations & Overseas Operations Office Y.P. Chyn (Note 4)	Male	R.O.C.	01/01/1987	4,932,964	0.02%	4,190,107	0.02%	-	-	Master, Electrical Engineering, National Cheng Kung University, Taiwan Senior Vice President, Product Development, TSMC Vice President, Advanced Technology and Business, TSMC	Director, TSMC subsidiaries	None	None	None
Senior Vice President Research and Development Y.J. Mii (Note 4)	Male	R.O.C.	11/14/1994	1,016,273	0.00%	-	-	-	-	Ph.D., Electrical Engineering, University of California, Los Angeles, U.S. Vice President, Technology Development, TSMC Senior Director, Platform I Division, TSMC	None	None	None	None
Senior Vice President Chief Information Security Officer Information Technology and Materials Management & Risk Management J.K. Lin	Male	R.O.C.	01/01/1987	12,660,501	0.05%	1,168,961	0.00%	-	-	Bachelor, Science, National Changhua University of Education, Taiwan Vice President, Mainstream Fabs and Manufacturing Technology, TSMC Senior Director, Mainstream Fabs, TSMC	None	None	None	None
Senior Vice President Europe & Asia Sales and Research & Development/ Corporate Research Cliff Hou (Note 5)	Male	R.O.C.	12/15/1997	435,570	0.00%	60,802	0.00%	-	-	Ph.D., Electrical Engineering, Syracuse University, U.S. Senior Vice President, Technology Development, TSMC Vice President, Design and Technology Platform, TSMC Senior Director, Design and Technology Platform, TSMC	Director and/or President, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Senior Vice President Business Development & Overseas Operations Office Kevin Zhang (Note 5)	Male	U.S.	11/01/2016	115,867	0.00%	-	-	-	-	Ph.D., Electrical Engineering, Duke University, U.S. Vice President, Design and Technology Platform, TSMC Vice President, Technology and Manufacturing Group, Intel Corp.	None	None	None	None
Senior Vice President and General Counsel Corporate Governance Officer Legal Sylvia Fang (Note 6)	Female	R.O.C.	03/20/1995	707,793	0.00%	67,906	0.00%	384,000	0.00%	Master, Comparative Law, School of Law, University of Iowa, U.S. Attorney-at-law, Taiwan Associate General Counsel, TSMC Senior Associate, Taiwan International Patent and Law Office (TIPLO)	Director and/or Supervisor, TSMC subsidiaries	None	None	None
Senior Vice President and Chief Financial Officer Spokesperson Finance Wendell Huang (Note 6)	Male	R.O.C.	05/03/1999	1,660,166	0.01%	-	-	-	-	Master, Business Administration, Cornell University, U.S. Deputy Chief Financial Officer, TSMC Senior Director, Finance Division, TSMC Vice President, Corporate Finance, ING Barings Vice President, Corporate Finance, Chase Manhattan Bank Vice President, Corporate Finance, Bankers Trust Company	Director, Supervisor, and/or President, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Vice President Operations/Fab Operations I CEO Overseas Operations Office/TSMC AZ Y.L. Wang	Male	R.O.C.	06/01/1992	226,043	0.00%	1,135,529	0.00%	-	-	Ph.D., Electrical Engineering, National Chiao Tung University, Taiwan Vice President, Fab Operations, TSMC Vice President, Technology Development, TSMC Vice President, Fab 14B, TSMC Senior Director, Fab 14B, TSMC	Director, TSMC subsidiary	None	None	None
Vice President and TSMC Distinguished Fellow Pathfinding for System Integration Douglas Yu	Male	R.O.C.	12/28/1994	258,496	0.00%	-	-	-	-	Ph.D., Materials Engineering, Georgia Institute of Technology, U.S. Vice President, Integrated Interconnect & Packaging, TSMC Senior Director, Integrated Interconnect & Packaging Division, TSMC	None	None	None	None
Vice President and TSMC Fellow Operations/Advanced Technology and Mask Engineering T.S. Chang	Male	R.O.C.	02/06/1995	181,289	0.00%	-	-	-	-	Ph.D., Electrical Engineering, National Tsing Hua University, Taiwan Vice President, Product Development, TSMC Vice President, Fab 12B, TSMC Senior Director, Fab 12B, TSMC	None	None	None	None

(Continued)

Title Name	Gender	Nationality	On-board Date (Note 1)	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Education and Selected Past Positions	Selected Current Positions at Other Companies	Managers Who Are Spouses or within Second-degree Relative of Consanguinity to Each Other (Note 3)		
				Shares (Note 2)	%	Shares (Note 2)	%	Shares (Note 2)	%			Title	Name	Relation
Vice President Research and Development/Platform Technology Michael Wu	Male	R.O.C.	12/09/1996	493,404	0.00%	198,943	0.00%	-	-	Ph.D., Electrical Engineering, University of Wisconsin-Madison, U.S. Senior Director, Platform Development, TSMC	None	None	None	None
Vice President Research and Development/Pathfinding Min Cao	Male	U.S.	07/29/2002	371,055	0.00%	34,470	0.00%	-	-	Ph.D., Physics, Stanford University, U.S. Senior Director, Pathfinding Division, TSMC	None	None	None	None
Vice President Operations/Fab Operations II CEO Overseas Operations Office/JASM Y.H. Liaw	Male	R.O.C.	08/03/1988	375,532	0.00%	-	-	430,000	0.00%	Master, Chemical Engineering, National Tsing Hua University, Taiwan Vice President, Fab Operations, TSMC Vice President, Fab 15B, TSMC Senior Director, Fab 15B, TSMC	Director, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Vice President Research and Development/Advanced Tool and Module Development Simon Jang	Male	R.O.C.	09/01/1993	356,832	0.00%	1,250	0.00%	-	-	Ph.D., Materials Science & Engineering, Massachusetts Institute of Technology, U.S. Senior Director, Advanced Tool and Module Development Division, TSMC	None	Deputy Director	Sharon Jang	sister
Vice President Research and Development/More than Moore Technologies C.S. Yoo	Male	R.O.C.	06/16/1988	1,709,617	0.01%	219,924	0.00%	851,908	0.00%	Ph.D., Chemical Engineering, Worcester Polytech. Institute, U.S. Vice President, Europe & Asia Sales, TSMC Senior Director, Office of Strategy Customer Program, TSMC Senior Director, E-Beam Operation Division, TSMC	None	None	None	None
Vice President Quality and Reliability and Operations/Advanced Packaging Technology and Service Jun He	Male	R.O.C.	05/22/2017	33,310	0.00%	-	-	-	-	Ph.D., Materials Science and Engineering, University of California, Santa Barbara, U.S. Senior Director, Quality and Reliability, TSMC Senior Director, Head of Quality and Reliability for Technology & Manufacturing Group, Intel Corp.	Director, TSMC subsidiaries	None	None	None
Vice President Research and Development/Platform Technology Geoffrey Yeap	Male	U.S.	03/21/2016	72,532	0.00%	-	-	-	-	Ph.D., Electrical and Computer Engineering, University of Texas-Austin, U.S. Senior Director, Platform Development, TSMC Senior Director, Advanced Technology, TSMC Vice President, Engineering, Silicon Technology, Qualcomm	None	None	None	None
Vice President and Chief Information Officer Information Technology and Materials Management & Risk Management/Corporate Information Technology Chris Horng-Dar Lin	Male	U.S.	01/04/2021	41,137	0.00%	10,000	0.00%	-	-	Ph.D., Electrical Engineering and Computer Science, University of California, Berkeley, U.S. Vice President, Information Technology, Mozilla Director, Enterprise Platform Infrastructure, Facebook	None	None	None	None
Vice President Corporate Planning Organization Jonathan Lee	Male	R.O.C.	05/28/2007	395,044	0.00%	6,000	0.00%	-	-	Master, Business Administration, City University of New York, Baruch College, U.S. Senior Director, Strategic Planning Division, TSMC	None	None	None	None
Vice President Operations/Facility Arthur Chuang	Male	R.O.C.	01/17/1989	2,608,118	0.01%	1,993,040	0.01%	-	-	Ph.D., Civil Engineering, National Taiwan University, Taiwan Senior Director, Facility Division, TSMC	None	None	None	None
Vice President and TSMC Fellow Research and Development/Design & Technology Platform L.C. Lu	Male	R.O.C.	08/01/2000	180,957	0.00%	15,000	0.00%	-	-	Ph.D., Computer Science, Yale University, U.S. Senior Director, Digital IPs Solution Division, TSMC	None	None	None	None
Vice President Research and Development/Integrated Interconnect & Packaging K.C. Hsu	Male	R.O.C.	11/01/2021	90,927	0.00%	-	-	-	-	Master, Technology Management, National Chiao Tung University, Taiwan Taiwan Country Manager, Micron Technology Inc. President, WaferTech LLC	None	None	None	None
Vice President Operations/Fab Operations I CEO Overseas Operations Office/ESMC Ray Chuang (Note 7)	Male	R.O.C.	12/15/1997	180,318	0.00%	105,000	0.00%	-	-	Master, Materials Science & Engineering/Engineering Economics System, Stanford University, U.S. Senior Director, Fab 18A, TSMC Director, Fab 12B, TSMC	None	None	None	None

Note 1: On-board date means the official date joining TSMC.
Note 2: Dose not include shares held in the form of ADSs.
Note 3: President (or someone with an equivalent job responsibility, i.e. the highest ranking manager of the company) and Chairman are not (1) the same person, (2) in a marital relationship with each other, or (3) within one degree of consanguinity.
Note 4: Mr. Y.P. Chyn and Dr. Y.J. Mii were appointed as Executive Vice Presidents and Co-Chief Operating Officers, effective March 1, 2024.
Note 5: Dr. Cliff Hou and Dr. Kevin Zhang were appointed as Senior Vice Presidents and Deputy Co-Chief Operating Officers, effective March 1, 2024.
Note 6: Ms. Sylvia Fang and Mr. Wendell Huang were promoted to Senior Vice Presidents, effective February 6, 2024.
Note 7: Mr. Ray Chuang was promoted to Vice President, effective May 9, 2023.

2.5.2 Compensation of CEO and Vice Presidents (Note 1)

Unit: NT$

Title	Name	Salary (A)		Severance Pay and Pensions (B) (Note 5)		Bonuses and Allowances (C) (Note 6)		Profit Sharing (D)				Amount and Ratio of Total A, B, C and D to Net Income (Note 7)		Compensation from Non-consolidated Affiliates or Parent Company
		From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC		From All Consolidated Entities		From TSMC	From All Consolidated Entities	
								Cash	Stock (Fair Market Value)	Cash	Stock (Fair Market Value)			
Chief Executive Officer	C.C. Wei	14,962,410	14,962,410	278,299	278,299	313,175,246	313,175,246	219,326,280	-	219,326,280	-	547,742,235 0.0653%	547,742,235 0.0653%	-
Senior Vice President, Chief Financial Officer/Spokesperson	Wendell Huang	5,995,500	5,995,500	111,517	111,517	57,211,091	57,211,091	40,179,742	-	40,179,742	-	103,497,850 0.0123%	103,497,850 0.0123%	-
Senior Vice President	Lora Ho	136,548,315	162,258,591	2,539,793	3,202,056	1,388,757,585	1,584,248,205	980,476,267	-	980,476,267	-	2,508,321,960 0.2991%	2,730,185,119 0.3256%	-
Senior Vice President	Wei-Jen Lo													
Senior Vice President/Chairman, TSMC Arizona	Rick Cassidy													
Senior Vice President	Y.P. Chyn (Note 2)													
Senior Vice President	Y.J. Mii (Note 2)													
Senior Vice President/Chief Information Security Officer	J.K. Lin													
Senior Vice President	Cliff Hou (Note 3)													
Senior Vice President	Kevin Zhang (Note 3)													
Senior Vice President and General Counsel/Corporate Governance Officer	Sylvia Fang													
Vice President	Y.L. Wang													
Vice President and TSMC Distinguished Fellow	Douglas Yu													
Vice President and TSMC Fellow	T.S. Chang													
Vice President	Michael Wu													
Vice President	Min Cao													
Vice President	Y.H. Liaw													
Vice President	Simon Jang													
Vice President	C.S. Yoo													
Vice President	Jun He													
Vice President	Geoffrey Yeap													
Vice President and Chief Information Officer	Chris Horng-Dar Lin													
Vice President	Jonathan Lee													
Vice President	Arthur Chuang													
Vice President and TSMC Fellow	L.C. Lu													
Vice President	K.C. Hsu													
Vice President	Ray Chuang (Note 4)													
Total		157,506,225	183,216,501	2,929,609	3,591,872	1,759,143,922	1,954,634,542	1,239,982,289	-	1,239,982,289	-	3,159,562,045 0.3768%	3,381,425,204 0.4033%	-

Note 1: Compensation policy, standards/packages, procedures, the linkage to operating performance and future risk exposure: The total compensation of the executive officers is based on their job responsibility, contribution, company performance, and projected future risks the Company will face. It is reviewed by the Compensation and People Development Committee then submitted to the Board of Directors for approval.
Note 2: Mr. Y.P. Chyn and Dr. Y.J. Mii were appointed as Executive Vice Presidents and Co-Chief Operating Officers, effective March 1, 2024.
Note 3: Dr. Cliff Hou and Dr. Kevin Zhang were appointed as Senior Vice Presidents and Deputy Co-Chief Operating Officers, effective March 1, 2024.
Note 4: Mr. Ray Chuang was promoted to Vice President, effective May 9, 2023. These amounts did not include compensation for the period before his promotion.
Note 5: Pensions funded according to applicable law.
Note 6: The above-mentioned figures include the expense for the business performance bonuses distributed in May, August, November 2023 & February 2024, and Company cars and gasoline reimbursements.
Note 7: Total compensation of the executive officers from TSMC in 2022 accounted for 0.3700% of 2022 net income. Total compensation of the executive officers from all consolidated entities in 2022 accounted for 0.3846% of 2022 net income.

The Company's Policy, Standards/Packages, Procedures for the Compensation of the CEO and Vice Presidents, and the Linkage to Their Performance Evaluation and the Future Risk Exposure

- The Company's Policy, Standards/Packages

The compensation of the CEO and Vice Presidents takes into account, in a comprehensive manner, aspects of their experience, professional capabilities, managerial skills, and the positions they hold. The said compensation is also closely linked to both the financial and non-financial performance goals, so as to reflect the fulfillment of their responsibilities as well as their work performance. Compensation includes salary, quarterly paid cash bonus, allowances, and profit sharing based on annual profits of the Company. Moreover, since 2021, TSMC has begun to offer Employee Restricted Stock Awards to link their compensation with shareholders' interests and ESG achievements. The company places a greater emphasis on variable compensation constituting a larger proportion of the total compensation versus fixed compensation, and prioritizes long-term incentive rewards to better align the compensation of our CEO and executives with the company's sustainable business performance, shareholder interests, and ESG achievements. The Compensation and People Development Committee approves the compensation plan regularly, which is then submitted to the Board of Directors for approval.

- The Procedures

Quarterly cash bonuses and profit-sharing are for the purpose of rewarding employee contributions, incentivizing employees to continue to work hard, and aligning employee interests with those of TSMC's shareholders. According to Articles of Incorporation, if the Company is profitable for the year, at least 1% of the profits will be allocated as employee compensation. The frequency, date, and conditions of the distribution of employee compensation will be determined according to the Company's bonus policy. The Company further determines the bonus and profit-sharing amounts based on operating results and common domestic industry practice. The amount and distribution of the employee bonuses are recommended by the Compensation and People Development Committee to the Board of Directors for approval. Cash bonuses are paid quarterly, and profit sharing are paid after approval at the Board of Directors meeting and having reported the same at the Shareholders' meeting.

TSMC established Employee Restricted Stock Awards to link the compensation for CEO and Vice Presidents with ESG achievements and the interests of shareholders. The number of shares granted to the CEO and Vice Presidents will be determined by the Chairman and CEO by taking into account the Company's business performance, the individual's job grade, performance, and other factors as deemed appropriate and approved by Compensation and People Development Committee, and ultimately subject to Board of Directors' approval.

- The Linkage to the Performance Evaluation

The compensation of TSMC's CEO and Vice Presidents is governed by the Company's bonus policy, which covers the achievement of both corporate operational goals and personal annual objectives. Corporate goals include financial indicators and non-financial indicators. Personal annual objectives include operational goals and ESG achievements in focus areas: Drive Green Manufacturing, Build a Sustainable Supply Chain, Create a Diverse and Inclusive Workplace, Develop Talent, and Care for the Disadvantaged. The Employee Restricted Stock Awards provided has a vesting period of three years (for details, please refer to "4.6.1 Status of Employee Restricted Stock" on page 86-91 of this Annual Report). The corporate performance indicators are the relative total shareholder return (TSR) of the company compared to TSR of the S&P 500 IT Index TSR, with the company's ESG achievements as a modifier. Through these two clear quantitative indicators, we strengthen management's long-term and continuous creation of shareholder value while improving ESG performance, which shows a strong correlation with the Company's overall performance.

- The Future Risk Exposure

The compensation of TSMC's CEO and Vice Presidents is based on the relevant industry benchmarks and the performance of the Company. The standards, structure, and system of compensation are reviewed and adjusted as necessary in response to changes in the Company's actual operating conditions and relevant laws and regulations. The Company does not create financial incentive programs that may lead executives to pursue remuneration at the expense of exceeding the Company's risk tolerance level, so as to ensure a balance between sustainable business operations and risk control.

- Clawback Policy

TSMC established the Clawback policy in 2023. (Disclosed on tsmc.com/Home/Investors/Corporate Governance/Major Internal Policies/TSMC Clawback Policy)

Compensation of CEO and Vice Presidents

	2023	
	From TSMC	From All Consolidated Entities and Non-consolidated Affiliates
NT$0 ~ NT$999,999	Rick Cassidy	None
NT$1,000,000 ~ NT$1,999,999	None	None
NT$2,000,000 ~ NT$3,499,999	None	None
NT$3,500,000 ~ NT$4,999,999	None	None
NT$5,000,000 ~ NT$9,999,999	None	None
NT$10,000,000 ~ NT$14,999,999	None	None
NT$15,000,000 ~ NT$29,999,999	None	None
NT$30,000,000 ~ NT$49,999,999	Ray Chuang	Ray Chuang
NT$50,000,000 ~ NT$99,999,999	Sylvia Fang, Y.L. Wang, T.S. Chang, Michael Wu, Min Cao, Y.H. Liaw, Simon Jang, C.S. Yoo, Jun He, Geoffrey Yeap, Chris Horng-Dar Lin, Jonathan Lee, Arthur Chuang, L.C. Lu, K.C. Hsu	Sylvia Fang, Y.L. Wang, T.S. Chang, Michael Wu, Min Cao, Y.H. Liaw, Simon Jang, C.S. Yoo, Jun He, Geoffrey Yeap, Chris Horng-Dar Lin, Jonathan Lee, Arthur Chuang, L.C. Lu, K.C. Hsu
Over NT$100,000,000	C.C. Wei, Wendell Huang, Lora Ho, Wei-Jen Lo, Y.P. Chyn, Y.J. Mii, J.K. Lin, Cliff Hou, Kevin Zhang, Douglas Yu	C.C. Wei, Wendell Huang, Lora Ho, Wei-Jen Lo, Rick Cassidy, Y.P. Chyn, Y.J. Mii, J.K. Lin, Cliff Hou, Kevin Zhang, Douglas Yu
Total	27	27

2.5.3 Employees' Profit Sharing of Management Team

Unit: NT$

Title	Name	Stock (Fair Market Value)	Cash	Total	Total Profit Sharing of Management Team as a % of Net Income
Chief Executive Officer	C.C. Wei	-	219,326,280	219,326,280	0.0262%
Senior Vice President, Chief Financial Officer/Spokesperson	Wendell Huang	-	40,179,742	40,179,742	0.0048%
Senior Vice President	Lora Ho	-	980,476,267	980,476,267	0.1169%
Senior Vice President	Wei-Jen Lo				
Senior Vice President/Chairman, TSMC Arizona	Rick Cassidy				
Senior Vice President	Y.P. Chyn (Note 1)				
Senior Vice President	Y.J. Mii (Note 1)				
Senior Vice President/Chief Information Security Officer	J.K. Lin				
Senior Vice President	Cliff Hou (Note 2)				
Senior Vice President	Kevin Zhang (Note 2)				
Senior Vice President and General Counsel/Corporate Governance Officer	Sylvia Fang				
Vice President	Y.L. Wang				
Vice President and TSMC Distinguished Fellow	Douglas Yu				
Vice President and TSMC Fellow	T.S. Chang				
Vice President	Michael Wu				
Vice President	Min Cao				
Vice President	Y.H. Liaw				
Vice President	Simon Jang				
Vice President	C.S. Yoo				
Vice President	Jun He				
Vice President	Geoffrey Yeap				
Vice President and Chief Information Officer	Chris Horng-Dar Lin				
Vice President	Jonathan Lee				
Vice President	Arthur Chuang				
Vice President and TSMC Fellow	L.C. Lu				
Vice President	K.C. Hsu				
Vice President	Ray Chuang (Note 3)				
Total		-	1,239,982,289	1,239,982,289	0.1479%

Note 1: Mr. Y.P. Chyn and Dr. Y.J. Mii were appointed as Executive Vice Presidents and Co-Chief Operating Officers, effective March 1, 2024.
Note 2: Dr. Cliff Hou and Dr. Kevin Zhang were appointed as Senior Vice Presidents and Deputy Co-Chief Operating Officers, effective March 1, 2024.
Note 3: Mr. Ray Chuang was promoted to Vice President, effective May 9, 2023. These amounts did not include compensation for the period before his promotion.

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3 Corporate Governance

TSMC was recognized by Fortune Magazine as one of the "2023 World's Most Admired Companies."

3.1 Overview

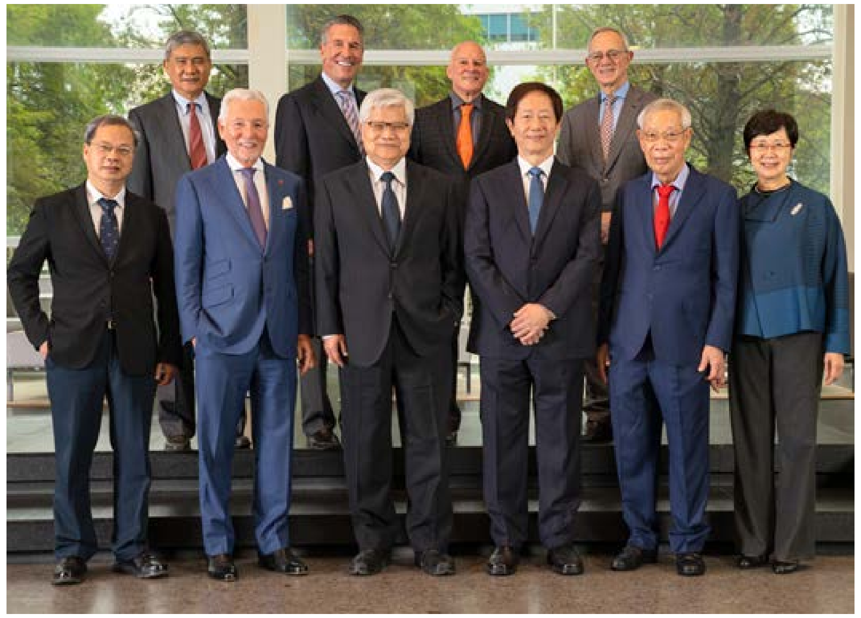
TSMC advocates and acts upon the principles of operational transparency and respect for shareholder rights. We believe that the basis for successful corporate governance is a sound and effective Board of Directors. In line with this principle, TSMC Board of Directors delegates various responsibilities and authority to three Board Committees, Audit and Risk Committee, Compensation and People Development Committee, and Nominating, Corporate Governance and Sustainability Committee. Each Committee's chairperson regularly reports to the Board on its activities and recommendations.

2023 Corporate Governance Awards and Ratings

Organization	Awards
Dow Jones Sustainability Indices (DJSI)	Dow Jones Sustainability World Index for the 23rd consecutive year
MSCI ESG Indexes	MSCI ACWI ESG Leaders Index component MSCI ESG Research – AAA Ratings MSCI ACWI SRI Index component MSCI ACWI Islamic Index component MSCI Emerging Markets ESG Leaders Index
Morningstar	The Best Sustainable Companies to Own in 2024
S&P Global	Corporate Sustainability Assessment – Top 10% S&P Global ESG Score
Sustainalytics	Company ESG Risk Ratings: Low ESG Risk – Semiconductor Industry
ISS ESG	ISS-oekom "Prime" Rated by ISS ESG Corporate Rating
FTSE4Good Index	FTSE4Good Emerging Index component FTSE4Good All-World Index component FTSE4Good TIP Taiwan ESG Index component
Taiwan Stock Exchange	Top 5% in Corporate Governance Evaluation of Listed Companies for the 9th consecutive year
CommonWealth Magazine	Talent Sustainability Award
Institutional Investor Magazine	Most Honored Company (Technology/Semiconductors) – All-Asia Best Overall ESG (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia Best Company Board (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia
Forbes	The World's Top 10 Largest Technology Companies in 2023 2023 World's Best Employers
FORTUNE	2023 World's Most Admired Companies Fortune Global 500
Asiamoney	2023 Asia's Outstanding Companies – Semiconductors & Semiconductor Equipment Sector for the 6th consecutive year
Taiwan Institute of Sustainable Energy	Taiwan Top 10 Sustainability Exemplary Awards for the 8th consecutive year
IFI Claims Patent Services	Ranked as 3rd in 2023 Top 50 US Patent Assignees

3.2 Board of Directors

Board Structure



TSMC's Board of Directors consists of ten distinguished members with a great breadth of experience as world-class business leaders or professionals. We deeply rely on them for their diverse knowledge, personal perspectives, and solid business judgment. Six of those ten members are Independent Directors: former British Telecommunications Chief Executive Officer, Sir Peter L. Bonfield; former Chairman of National Performing Arts Center and former Advisor of Executive Yuan, R.O.C., Ms. Kok-Choo Chen; former Chairman of Applied Materials, Inc., Mr. Michael R. Splinter; former Chief Executive Officer of Xilinx, Inc., Mr. Moshe N. Gavrielov; currently Chairman of Delta Electronics Inc., Mr. Yancey Hai; and former President of MIT, Mr. L. Rafael Reif.

TSMC's Board is comprised of a diverse group of professionals from different backgrounds in industries, academia, law, etc. These professionals include citizens from Taiwan, Europe and the U.S. with world-class business operating experience, one of whom is female. Independent Directors constitute 60% of the Board.

In December 2023, TSMC announced that Dr. Mark Liu plans to retire from TSMC in June 2024, and will not seek re-election to the board of directors. During his tenure, Dr. Liu has reaffirmed the Company's commitment to its mission and focused on enhancing corporate governance and competitiveness particularly in technology leadership, digital excellence, and global footprint. TSMC's Nominating, Corporate Governance and Sustainability Committee recommends Dr. C.C. Wei, while remaining as CEO, to succeed as TSMC's next Chairman, subject to the election of the incoming board in June 2024.

Board Responsibilities

Inheriting the spirit of TSMC's Founder, Dr. Morris Chang's philosophy on corporate governance, under the leadership of Chairman Dr. Mark Liu and CEO & Vice Chairman Dr. C.C. Wei, TSMC's Board of Directors takes a serious and forthright approach to its duties and is a dedicated, competent and independent Board.

The Board's primary duty is to supervise the Company's compliance with relevant laws and regulations, financial transparency, timely disclosure of material information, and maintaining of the highest integrity. TSMC's Board of Directors strives to perform these responsibilities through its Audit and Risk Committee, Compensation and People Development Committee, Nominating, Corporate Governance and Sustainability Committee, the hiring of a financial expert consultant for the Audit and Risk Committee, and coordination with our Internal Audit department.

The second duty of the Board of Directors is to appoint and dismiss officers of the Company when necessary, to evaluate management performance and to review the succession plan for senior executives. TSMC's management has maintained a healthy and functional communication with the Board of Directors, has been devoted in executing guidance of the Board, and is dedicated in running the business operations, all to achieve the best interests for TSMC shareholders.

The third duty of the Board of Directors is to resolve critical matters, such as capital appropriations, investment activities, dividends, etc.

The fourth duty of the Board of Directors is to provide guidance to the Company's management team and risk management. In each quarter, TSMC's management reports to the Board on various subjects (including ESG programs) and strategies, and spends substantial time and effort to communicate with the Board. The Board would comment on the risk and probabilities for success of the proposed corporate strategies. The Board also periodically oversees those strategies' implementation and outcomes, and may suggest the management team to make adjustments to the strategic goals and objectives if necessary.

Nomination and Election of Directors

TSMC envisions the membership of its esteemed Board of Directors to be composed of highly ethical professionals with the necessary knowledge, experience as world-class business leaders and understanding from diverse backgrounds. TSMC Board of Directors members are nominated via rigorous selection processes. TSMC established the "Guidelines for Nomination of Directors" that set out the procedures and criteria for the nomination, qualification and evaluation of Director candidates to be nominated by the Board of Directors. Also, TSMC developed the "Corporate Governance Guidelines" that set out the criteria for evaluating director candidates for election by the shareholders shall be based on, among other considerations, their professional knowledge, experience, business judgment, commitment to uphold the Company's core values, as well as reputation in both ethical conduct and leadership. Diversity of backgrounds (including gender, age, and culture) of Board members shall also be considered. The "Nominating, Corporate Governance and Sustainability Committee" will recommend Independent Director candidates to the Board of Directors for nomination. The independence of each Independent Director candidate is also considered and assessed under relevant laws.

Directors shall be elected pursuant to the candidate nomination system specified in Article 192-1 of the R.O.C. Company Law. The tenure of office for Directors shall be three years. The independence of each independent director candidate is also considered and assessed under relevant law such as the Taiwan "Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies". Under R.O.C. law, in which TSMC was incorporated, any shareholders holding one percent or more of our total outstanding common shares may nominate their own candidate to stand for election as a Board member. This democratic mechanism allows our shareholders to become involved in the selection and nomination process of Board candidates. The final slate of candidates is put to the shareholders for voting at the relevant annual shareholders' meeting.

Taking the position that directors who over time have developed increasing knowledge, experience and insight into the semiconductor industry and deeper understanding of the operations of the Company can better perform their duties and provide an increasing contribution and value to the shareholders of the Company. Except as otherwise provided in applicable regulations regarding the tenure limits of independent directors, there are no limits on the number of terms that a director may serve. The Board will, however, assess director tenure on an on-going basis to ensure the Board continues to benefit from new perspectives.

Directors' Compensation

According to TSMC's Articles of Incorporation, the Board of Directors is authorized to determine the salary for the Chairman, Vice Chairman and Directors, taking into account the extent and value of the services provided for the management of the Corporation and the standards of the industry within the R.O.C. and overseas.

TSMC's Articles of Incorporation also state that not more than 0.3 percent of our annual profits may be distributed as compensation to our directors. In addition, directors who also serve as executive officers of the Company are not entitled to receive any director compensation. According to TSMC's Compensation and People Development Committee Charter, the distribution of compensation to directors shall be made in accordance with TSMC's "Rules for Distribution of Compensation to Directors" based on the following principles: (1) directors who also serve as executive officers of the Company are not entitled to receive compensation; (2) the compensation for Independent Directors may be higher than other directors, as all Independent Directors also serve as members of the Audit and Risk Committee, Compensation and People Development Committee, and Nominating, Corporate Governance and Sustainability Committee, and thus participate in the discussions as well as resolutions of related Committee meetings in accordance with the charter of each Committee; and (3) the compensation for overseas Independent Directors may be higher than domestic Independent Directors, as they require additional time to attend quarterly meetings in Taiwan.

Directors' Professional Qualifications and Independent Directors' Independence Status

Criteria / Name/Title	Professional Qualification and Experience	Independent Directors' Independence Status	Number of Other Taiwanese Public Companies Concurrently Serving as an Independent Director
Mark Liu Chairman	For Directors' professional qualification and experience, please refer to "2.4.1 Information Regarding Board Members" on page 24-29 of this Annual Report. None of the Directors has been in or is under any circumstances stated in Article 30 of the Company Law. (Note 1)	Not Applicable	0
C.C. Wei Vice Chairman			0
Ming-Hsin Kung Director			0
F.C. Tseng Director			0
Sir Peter L. Bonfield Independent Director		1. Every of the Independent Directors satisfy the requirements of Article 14-2 of "Securities and Exchange Act" and "Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies" (Note 2) issued by Taiwan's Securities and Futures Bureau 2. Every of the Independent Directors (or nominee arrangement) as well as his/her spouse and minor children do not hold any TSMC common shares 3. Every of the Independent Directors received no compensation or benefits for providing commercial, legal, financial, accounting services or other services to the Company or to any its affiliates within the preceding two years, and the service provided is either an "audit service" or a "non-audit service"	0
Kok-Choo Chen Independent Director			0
Michael R. Splinter Independent Director			0
Moshe N. Gavrielov Independent Director			0
Yancey Hai Independent Director			1
L. Rafael Reif Independent Director			0

Note 1: The circumstances listed in Article 30 of the R.O.C. Company Act do not apply to me:
1. Having committed an offence as specified in the Statute for Prevention of Organizational Crimes and subsequently convicted of a crime, and has not started serving the sentence, has not completed serving the sentence, or five years have not elapsed since completion of serving the sentence, expiration of the probation, or pardon;
2. Having committed the offence in terms of fraud, breach of trust or misappropriation and subsequently convicted with imprisonment for a term of more than one year, and has not started serving the sentence, has not completed serving the sentence, or two years have not elapsed since completion of serving the sentence, expiration of the probation, or pardon;
3. Having committed the offense as specified in the Anti-corruption Act and subsequently convicted of a crime, and has not started serving the sentence, has not completed serving the sentence, or two years have not elapsed since completion of serving the sentence, expiration of the probation, or pardon;
4. Having been adjudicated bankrupt or adjudicated of the commencement of liquidation process by a court, and having not been reinstated to his rights and privileges;
5. Having been dishonored for unlawful use of credit instruments, and the term of such sanction has not expired yet; or
6. Having no or only limited disposing capacity.
7. Having been adjudicated of the commencement of assistantship and such assistantship having not been revoked yet.

Note 2: 1. Not a governmental, juridical person or its representative as defined in Article 27 of the Company Law.
2. Not serving concurrently as an independent director on more than three other Taiwanese public companies in total.
3. During the two years before being elected and during the term of office, meet any of the following situations:
(1) Not an employee of the company or any of its affiliates;
(2) Not a director or supervisor of the company or any of its affiliates;
(3) Not a natural-person shareholder who holds shares, together with those held by the person's spouse, minor children, or held by the person under others' names, in an aggregate amount of one percent or more of the total number of issued shares of the company or ranks as one of its top ten shareholders;
(4) Not a spouse, relative within the second degree of kinship, or lineal relative within the third degree of kinship, of any of the officer in the preceding (1) subparagraph, or of any of the above persons in the preceding subparagraphs (2) and (3);
(5) Not a director, supervisor, or employee of a corporate/institutional shareholder that directly holds five percent or more of the total number of issued shares of the company, ranks as of its top five shareholders, or has representative director(s) serving on the company's board based on Article 27 of the Company Law;
(6) Not a director, supervisor, or employee of a company of which the majority of board seats or voting shares is controlled by a company that also controls the same of the company;
(7) Not a director, supervisor, or employee of a company of which the chairman or CEO (or equivalent) themselves or their spouse also serve as the company's chairman or CEO (or equivalent);
(8) Not a director, supervisor, officer, or shareholder holding five percent or more of the shares of a specified company or institution that has a financial or business relationship with the company; and
(9) Not a professional individual, owner, partner, director, supervisor, or officer of a sole proprietorship or any type of legal entity, or a spouse thereof, that have provided to TSMC or its affiliates: (1) any audit service; or (2) commercial, legal, financial, accounting services or other services of which its total compensation exceeding NT$500,000 within the recent two years.

Board Diversity and Independence

TSMC Board of Directors members are nominated via rigorous selection processes. TSMC established both the "Guidelines for Nomination of Directors" that set out the procedures and criteria for the nomination, qualification and evaluation of Director candidates to be nominated by the Board of Directors, and the "Corporate Governance Guidelines" that set out the criteria for evaluating director candidates for election by the shareholders shall be based on, among other considerations, their professional knowledge, experience, business judgment, commitment to uphold the Company's core values, as well as reputation in both ethical conduct and leadership. Diversity of backgrounds (including gender, age, and culture) of Board members shall also be considered. The Company aims to have at least 50% Independent Directors and at least one female director to serve on the Board. Currently, all ten members of the Board of Directors, including a female board member, represent diverse range of perspectives, including a complementary mix of skills, experiences, and backgrounds such as that from the industry, academia, and in law. These professionals, including a female board member, are citizens from Taiwan, Europe and the U.S. with world-class corporate management experiences. The six Independent Directors constitute 60% of the Board, and there is no marital or is within the second degree of kinship relationship between or among the Directors. As such, the Board of Directors carries independence. The following table demonstrates the implementation of the board diversity policy:

Implementation of the Diversity Policy for Board Members

Title	Chairman	Vice Chairman	Director		Independent Director					
Name	Mark Liu	C.C. Wei	F.C. Tseng	Ming-Hsin Kung	Sir Peter L. Bonfield	Kok-Choo Chen	Michael R. Splinter	Moshe N. Gavrielov	Yancey Hai	L. Rafael Reif
Gender	Male	Male	Male	Male	Male	Female	Male	Male	Male	Male
Nationality	U.S.	R.O.C.	R.O.C.	R.O.C.	UK	R.O.C.	U.S.	U.S.	R.O.C./U.S.	U.S.
Age	66-70	71-75	76-80	56-60	76-80	76-80	71-75	66-70	71-75	71-75
Employed by TSMC		V								
Professional Knowledge and Expertise										
Business	V	V	V	V	V	V	V	V	V	
Technology	V	V	V		V		V	V	V	V
Finance/Accounting				V					V	
Legal						V				
Sales and Marketing	V	V	V		V	V	V	V	V	
Cybersecurity					V					
Others										Innovation/ R&D/ Education/ Training
Skills and Experience										
Leadership Skill	V	V	V	V	V	V	V	V	V	V
Strategic Decision-making	V	V	V	V	V	V	V	V	V	V
Global Market Perspective	V	V	V	V	V		V	V	V	
Industry Experience	V	V	V		V	V	V	V		V
Financial	V	V	V	V	V		V	V	V	V
Operating and Manufacturing	V	V	V		V		V	V	V	
Business Development	V	V	V		V	V	V	V	V	
Risk/Crisis Management	V	V	V	V	V	V	V	V	V	V
Environmental Sustainability	V	V	V	V	V	V	V	V	V	V
Social Engagement	V	V	V	V	V	V	V	V	V	V

3.2.1 Audit and Risk Committee

The Audit and Risk Committee assists the Board in fulfilling its oversight of the quality and integrity of the accounting, auditing, reporting, and financial control practices, as well as risk management of the Company.

The Audit and Risk Committee is responsible to review the following major matters:

- Financial reports;
- Auditing and accounting policies and procedures;
- Internal control systems and related policies and procedures;
- Material asset or derivatives transactions;
- Material lending funds, endorsements or guarantees;
- Offering or issuance of any equity-type securities;
- Derivatives and cash investments;
- Legal compliance;
- Related-party transactions and potential conflicts of interests involving executive officers and directors;
- Ombudsman reports;
- Fraud prevention and investigation reports;
- Corporate information security;
- Corporate risk management;
- Performance, independence, qualification of independent auditor;
- Hiring or dismissal of an attesting CPA, or the compensation given thereto;
- Appointment or discharge of financial, accounting, or internal auditing officers;
- Assessment of Committee Charter and fulfillment of Committee duties;
- Self-assessment of the Committee's performance; and
- Any other matters that shall be reviewed by the Audit and Risk Committee Meeting as required by relevant laws and regulations or its Committee Charter, or that are deemed to be material by the regulatory authorities.

Under R.O.C. law, the membership of audit committee shall consist of all independent directors. TSMC's Audit and Risk Committee satisfies this statutory requirement. The Committee also engaged a financial expert consultant in accordance with the rules of the U.S. Securities and Exchange Commission. The Audit and Risk Committee annually conducts self-evaluation to assess the Committee's performance and identify areas for further attention.

TSMC's Audit and Risk Committee is empowered by its Charter to conduct any study or investigation it deems appropriate to fulfill its responsibilities. It has direct access to TSMC's internal auditors, the Company's independent auditors, and all employees of the Company. The Committee is authorized to retain and oversee special legal, accounting, or other consultants as it deems appropriate to fulfill its mandate. The Audit and Risk Committee Charter is available on TSMC's corporate website.

3.2.2 Compensation and People Development Committee

The Compensation and People Development Committee assists the Board in discharging its responsibilities related to TSMC's compensation and benefits policies, plans and programs, in evaluation of compensation of TSMC's directors of the Board and executives, and the review of the pipeline planning of the Company's senior executives to ensure the long-term sustainability of the Company.

The members of the Compensation and People Development Committee are appointed by the Board as required by R.O.C. law. According to its charter, the Committee shall consist of no fewer than three independent directors of the Board, whereas the actual Committee is comprised of all six Independent Directors. The Chairman of the Board and the Chief Executive Officer are invited by the Committee to attend all meetings and are excused from the Committee's discussion of their own compensation.

TSMC's Compensation and People Development Committee is authorized by its charter to retain an independent consultant to assist in the evaluation of CEO's or executive officer's compensation. The Compensation and People Development Committee Charter is available on TSMC's corporate website.

Information Regarding Compensation and People Development Committee Members

Criteria / Name/Title	Professional Qualification and Experience	Independent Directors' Independence Status	Number of Other Taiwanese Public Companies Concurrently Serving as a Compensation Committee Member
Michael R. Splinter (Chair) Independent Director	TSMC's Compensation and People Development Committee is comprised of all six Independent Directors. For members professional qualification and experience, please refer to "2.4.1 Information Regarding Board Members" on page 24-29 of this Annual Report.	1. All the Committee members satisfy the requirements of Article 14-6 of "Securities and Exchange Act" and the requirements of "Regulations Governing the Appointment and Exercise of Powers by the Compensation Committee of a Company Whose Stock is Listed on the Taiwan Stock Exchange or the Taipei Exchange" (Note) issued by Taiwan's Securities and Futures Bureau 2. All the Committee members (or nominee arrangement) as well as his/her spouse and minor children do not hold any TSMC common shares 3. All the Committee members received no compensation or benefits for providing commercial, legal, financial, accounting services or other services to the Company or to any its affiliates within the preceding two years, and the service provided is either an "audit service" or a "non-audit service"	0
Sir Peter L. Bonfield Independent Director			0
Kok-Choo Chen Independent Director			0
Moshe N. Gavrielov Independent Director			0
Yancey Hai Independent Director			1
L. Rafael Reif Independent Director			0

Note: During the two years before being elected and during the term of office, meet any of the following situations:
(1) Not an employee of the company or any of its affiliates;
(2) Not a director or supervisor of the company or any of its affiliates;
(3) Not a natural-person shareholder who holds shares, together with those held by the person's spouse, minor children, or held by the person under others' names, in an aggregate amount of one percent or more of the total number of issued shares of the company or ranks as one of its top ten shareholders;
(4) Not a spouse, relative within the second degree of kinship, or lineal relative within the third degree of kinship, of any of the officer in the preceding (1) subparagraph, or of any of the above persons in the preceding subparagraphs (2) and (3);
(5) Not a director, supervisor, or employee of a corporate/institutional shareholder that directly holds five percent or more of the total number of issued shares of the company, ranks as of its top five shareholders, or has representative director(s) serving on the company's board based on Article 27 of the Company Law;
(6) Not a director, supervisor, or employee of a company of which the majority of board seats or voting shares is controlled by a company that also controls the same of the company;
(7) Not a director, supervisor, or employee of a company of which the chairman or CEO (or equivalent) themselves or their spouse also serve as the company's chairman or CEO (or equivalent);
(8) Not a director, supervisor, officer, or shareholder holding five percent or more of the shares of a specified company or institution that has a financial or business relationship with the company; and
(9) Not a professional individual, owner, partner, director, supervisor, or officer of a sole proprietorship or any type of legal entity, or a spouse thereof, that have provided to TSMC or its affiliates: (1) any audit service; or (2) commercial, legal, financial, accounting services or other services of which its total compensation exceeding NT$500,000 within the recent two years.

3.2.3 Nominating, Corporate Governance and Sustainability Committee

The Nominating, Corporate Governance and Sustainability Committee assists the Board in strengthening the selection mechanism for directors, selecting candidates for nomination to be elected as independent directors to the Board, building diversified and professional board, and advising on corporate governance and sustainability matters.

According to its Charter, the Committee shall be composed of the Chairman of the Board and three to six independent directors. Currently, the Committee consists of the Chairman of the Board and all six Independent Directors.

The Nominating, Corporate Governance and Sustainability Committee is authorized by its Charter to hire independent legal, financial and other advisors as it may deem necessary to fulfill its responsibilities. The Nominating, Corporate Governance and Sustainability Committee Charter is available on TSMC's corporate website.

3.2.4 Corporate Governance Officer

The Board of Directors appointed Ms. Sylvia Fang, the Vice President of Legal and General Counsel of TSMC, as the Corporate Governance Officer responsible for corporate governance matters, including handling of matters relating to Board, Audit and Risk Committee, Compensation and People Development Committee, Nominating, Corporate Governance and Sustainability Committee, and Shareholders' meetings in compliance with law, assistance in onboarding and continuing education of directors, provision of information required for performance of duties by directors, and assistance in directors' compliance of law, etc.

For details on performance of duties by the Corporate Governance Officer, please refer to "3. Corporate Governance" on page 40-67 of this Annual Report.

3.2.5 Director and Committees Members' Attendance

Each Director is expected to attend every Board meeting and the Committees meeting on which he or she serves. In 2023, the average Board Meeting attendance rate was 94% and the attendance rate for the Audit and Risk Committee, Compensation and People Development Committee, and Nominating, Corporate Governance and Sustainability Committee's Meetings were 97%, 100%, and 97% respectively.

Board of Directors Meeting Status

Tenures of the Board of Directors members are from July 26, 2021 to July 25, 2024. Dr. Mark Liu, TSMC's Chairman of the Board of Directors convened four regular meetings and one special meeting in 2023. The directors' attendance status is as follows.

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Notes
Chairman	Mark Liu	5	0	100%	None
Vice Chairman	C.C. Wei	5	0	100%	None
Director	Ming-Hsin Kung (Representative of National Development Fund, Executive Yuan)	3	2	60%	None
Director	F.C. Tseng	5	0	100%	None
Independent Director	Sir Peter L. Bonfield	5	0	100%	None
Independent Director	Kok-Choo Chen	5	0	100%	None
Independent Director	Michael R. Splinter	4	1	80%	None
Independent Director	Moshe N. Gavrielov	5	0	100%	None
Independent Director	Yancey Hai	5	0	100%	None
Independent Director	L. Rafael Reif	5	0	100%	None

Annotations:
A. (1) Matters listed in the Securities and Exchange Act §14-3: The Securities and Exchange Act §14-3 is not be applicable because the Company has established the Audit and Risk Committee. For relevant information, please refer to the "Audit and Risk Committee Meeting Status" in this Annual Report.
(2) There were no other written or otherwise recorded resolutions on which an Independent Director had an objection or reservation.
B. Recusals of Directors due to conflicts of interests: (1) Directors recused themselves from the discussion and voting of their compensation resolution; (2) given that NXP Semiconductors N.V. is a party to the sale of a 30% equity share of TSMC's wholly-owned German subsidiary, European Semiconductor Manufacturing Company (ESMC) GmbH, in an arrangement of TSMC selling 10% each to Bosch, Infineon and NXP, Mr. Moshe N. Gavrielov recused himself from the discussion and voting as he also serves as a Director of NXP.
C. Measures taken to strengthen the functionality of the Board:
- TSMC's Directors are composed of diverse backgrounds, including professional backgrounds in different industries, academic and legal, etc.; nationalities in different countries in Taiwan, Europe and the U.S.; world-class business operating experience; and one Director is female. Our Board has six Independent Directors who constitute 60% of the Board.
- The Chairman of the Board of Directors is not executive officer of the Company.
- To continue to make our corporate governance more comprehensive, the TSMC Board took a step further in February 2023 to expand and strengthen the functions and responsibilities of its Committees, including renaming the "Audit Committee" to the "Audit and Risk Committee", and the renaming the "Compensation Committee" to the "Compensation and People Development Committee". In addition, in order to strengthen the selection mechanism for directors, build diversified and professional board, TSMC's Board of Directors approved the establishment of the "Nominating, Corporate Governance and Sustainability Committee" referencing international practices.
- TSMC Board of Directors established "Corporate Governance Guidelines" in May, 2023.

Audit and Risk Committee Meeting Status

Tenures of the Audit and Risk Committee members are from July 26, 2021 to July 25, 2024. Sir Peter L. Bonfield, Chairman of the Audit and Risk Committee, convened four regular meetings in 2023. In addition to these meetings, he also convened one special meeting and three telephone conferences to review the Company's Annual Report to be filed with the Taiwan and U.S. authorities and investor conference materials. The Committee members' and consultant's attendance status is as follows.

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Telephone Conferences	Attendance Rate of Telephone Conferences (%)	Notes
Chair	Sir Peter L. Bonfield	5	0	100%	3	100%	None
Member	Kok-Choo Chen	4	1	80%	3	100%	None
Member	Michael R. Splinter	5	0	100%	3	100%	None
Member	Moshe N. Gavrielov	5	0	100%	2	67%	None
Member	Yancey Hai	5	0	100%	3	100%	None
Member	L. Rafael Reif	5	0	100%	2	67%	None
Financial Expert Consultant	Jan C. Lobbezoo	5	0	100%	3	100%	None

Annotations:
A. (1) Resolutions related to Securities and Exchange Act §14-5:

Audit and Risk Committee Meeting Date	Resolution
2023 1st Regular Meeting February 13	•2022 annual financial statements •2022 business report •2022 fourth quarter earnings distribution •Capital injection of not more than US$3.5 billion to TSMC Arizona •Fund-lending to TSMC Arizona for an amount not to exceed US$3 billion and a period not to exceed one year •Amendments to TSMC's "Procedures for Endorsement and Guarantee" •NTD corporate bond issuance •Issuance of total 2,110,000 shares of 2022 employee restricted stock awards •Issuance of 2023 employee restricted stock awards •2022 Statement of Internal Control System
2023 2nd Regular Meeting May 8	•2023 first quarter financial statements •2023 first quarter business report •2023 first quarter earnings distribution •NTD corporate bond issuance •Amendments to TSMC's internal control related policies and procedures
2023 3rd Regular Meeting August 7	•2023 second quarter financial statements •2023 second quarter business report •2023 second quarter earnings distribution •Capital injection of not more than €3,499,930,000 to European Semiconductor Manufacturing Company (ESMC) GmbH •Capital injection of not more than US$4.5 billion to TSMC Arizona •Ratification of TSMC's security investments classified as non-current assets
2023 4th Regular Meeting November 13	•2023 third quarter financial statements •2023 third quarter business report •2023 third quarter earnings distribution •Related-party sale of existing TSMC equipment to Japan Advanced Semiconductor Manufacturing, Inc. (JASM) •2024 service fees and out-of-pocket expenses for Deloitte
Independent Directors' objections, reservations or major suggestions: None.	
Resolution of the committee and the Company's response to the committee's opinion: The members of the Committee unanimously approved all the resolutions, and the Board of Directors approved all such resolutions recommended by the Committee.	

(2) There were no other resolutions which was not approved by the Committee but was approved by two thirds or more of all directors in 2023.
B. Recusals of Independent Directors due to conflicts of interests: Given that NXP Semiconductors N.V. is a party to the sale of a 30% equity share of TSMC's wholly-owned German subsidiary, European Semiconductor Manufacturing Company (ESMC) GmbH, in an arrangement of TSMC selling 10% each to Bosch, Infineon and NXP, Mr. Moshe N. Gavrielov recused himself from the discussion and voting as he also serves as a Director of NXP.
C. Descriptions of the communications between the Independent Directors, the internal auditors, and the independent auditors in 2023 (which should include the material items, channels, and results of the audits on the corporate finance and/or operations, etc.):
(1) The internal auditors have sent the audit reports to the members of the Committee periodically and presented the findings of all audit reports in the quarterly meetings of the Committee. The head of Internal Audit will immediately report to the members of the Committee any material matters. During 2023, the head of Internal Audit did not report any such material matters. The communication channel between the Committee and the internal auditor functioned well.
(2) The Company's independent auditors have presented the findings of their quarterly review or audits on the Company's financial results. Under applicable laws and regulations, the independent auditors are also required to immediately communicate to the Committee any material matters that they have discovered. During 2023, the Company's independent auditors did not report any irregularity. The communication channel between the Committee and the independent auditors functioned well.
The communications between the Independent Directors, the internal auditors, and the independent auditors are listed in the table below.

Audit and Risk Committee Meeting Date	Communications between the Independent Directors and the Internal Auditors	Communications between the Independent Directors and the Independent Auditors
2023 1st Regular Meeting February 13	•Internal Auditor's report (Closed Door Session) •Report on SOX 404 self-testing results for the year 2022 (Closed Door Session) •2022 Statement of Internal Control System (Closed Door Session)	•External auditor relationship (i.e. qualification, performance and independence) •Report of regulatory developments •Any audit problems or difficulties and management's response in connection with 2022 annual financial statements (Closed Door Session)
2023 2nd Regular Meeting May 8	•Internal Auditor's report (Closed Door Session) •Amendments to TSMC's internal control related policies and procedures (Closed Door Session)	•The result of 2022 CPA evaluation questionnaire •External auditors' report on Deloitte China and KY matters •Report of regulatory developments •Any review problems or difficulties and management's response in connection with 2023 first quarter financial statements (Closed Door Session)
2023 3rd Regular Meeting August 7	•Internal Auditor's report (Closed Door Session)	•Report of regulatory developments •Any review problems or difficulties and management's response in connection with 2023 second quarter financial statements (Closed Door Session)
2023 4th Regular Meeting November 13	•Internal Auditor's report (Closed Door Session) •2024 internal audit plan (Closed Door Session)	•Report of regulatory developments •Any review problems or difficulties and management's response in connection with 2023 third quarter financial statements (Closed Door Session)
Result: all of the above matters were reviewed and/or approved by the Committee whereupon Independent Directors raised no objection.		

Compensation and People Development Committee Meeting Status

Tenures of the Compensation and People Development Committee members are from July 26, 2021 to July 25, 2024. Mr. Michael R. Splinter, Chairman of the Committee, convened four regular meetings in 2023. The Committee members' qualification and attendance are as follows.

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Notes
Chair	Michael R. Splinter	4	0	100%	None
Member	Sir Peter L. Bonfield	4	0	100%	None
Member	Kok-Choo Chen	4	0	100%	None
Member	Moshe N. Gavrielov	4	0	100%	None
Member	Yancey Hai	4	0	100%	None
Member	L. Rafael Reif	4	0	100%	None

Annotations:
A. In 2023, the Compensation and People Development Committee conducted four regular meetings on February 13, May 8, August 7 and November 13. The discussion items were as follows:
- Report on matters related to employee compensation
- Total amount of quarterly business performance bonus
- Total amount of annual profit sharing
- The amount of quarterly business performance bonus for executive officers, CEO and Chairman
- The annual compensation of directors and executive officers, and the disclosure of same in the Annual Report
- Vest of Employee restricted stock awards for 2021
- Grant of Employee restricted stock awards for 2022
- Employee restricted stock awards rules for 2023
- Clawback Policy
- Organization and Executive Succession Discussion
- The renaming the "Compensation Committee" to the "Compensation and People Development Committee" and the amendments to its Charter

All of the above matters were reviewed and/or approved by the Committee.
B. The Board of Directors adopted all recommendations of the Committee without modification.
C. There were no written or otherwise recorded resolutions on which any member of the Committee had an objection or reservation opinion.

Nominating, Corporate Governance and Sustainability Committee Meeting Status

According to its Charter, the Committee shall be composed of the Chairman of the Board and three to six independent directors. Currently, the Committee consists of the Chairman of the Board and all six Independent Directors. The Nominating, Corporate Governance and Sustainability Committee assists the Board in strengthening the selection mechanism for directors, selecting candidates for nomination to be elected as independent directors to the Board, building diversified and professional board, and advising on corporate governance and sustainability matters.

On February 14, 2023, the Board established the Nominating, Corporate Governance and Sustainability Committee. Tenures of the Committee members are from February 14, 2023 to July 25, 2024. Mr. Moshe N. Gavrielov, Chairman of the Governance and Sustainability Committee, convened five meetings in 2023. The Committee members' professional qualification and experience, attendance status, and discussion items are as follows:

Criteria / Name/Title	Professional Qualification and Experience	Attendance in Person	By Proxy (Note)	Attendance Rate in Person (%)	Notes
Moshe N. Gavrielov (Chair) Independent Director	TSMC's Nominating, Corporate Governance and Sustainability Committee is comprised of the Chairman of the Board and all six independent directors. For members professional qualification and experience, please refer to "2.4.1 Information Regarding Board Members" on page 24-29 of this Annual Report.	5	-	100%	None
Mark Liu Chairman of the Board		5	-	100%	None
Sir Peter L. Bonfield Independent Director		5	-	100%	None
Kok-Choo Chen Independent Director		5	-	100%	None
Michael R. Splinter Independent Director		5	-	100%	None
Yancey Hai Independent Director		5	-	100%	None
L. Rafael Reif Independent Director		4	-	80%	None

Annotations:
A. In 2023, the Nominating, Corporate Governance and Sustainability Committee conducted five meetings on February 14, March 23, May 8, August 7 and November 13. The discussion items were as follows:
- Committee's operarion
- Future candidates for Independent Directors
- Establishment of the TSMC's Corporate Governance Guidelines
- Sustainable Development Action Plans for Listed Companies (2023)
- Quarterly ESG report
- Annual reviewing and assessing the Committee charter and fulfillment of Committee duties

All of the above matters were reviewed, discussed and/or approved by the Committee.
B. There were no resolutions on which any member of the Committee had an objection opinion.
C. The Board of Directors approved and adopted all recommendations of the Committee without modification.
Note: The Committee members shall attend the meetings in-person, and there is no proxy available for the Committee members who are unable to attend the meeting.

Board of Directors' Performance Evaluation Implementation Status

Evaluation Cycle	Evaluation Period	Evaluation Scope	Evaluation Method	Evaluation Aspect
Annual	From January 1, 2023 to December 31, 2023	•The Board of Directors as a whole •The individual directors •The Audit and Risk Committee •The Compensation and People Development Committee •The Nominating, Corporate Governance and Sustainability Committee	•Internal assessment of the Board •Self-assessments by each board member •Internal assessment of each committee	The Board of Directors are assessed on the following five aspects: 1. Involvement in the Company's operations 2. Enhancement of the quality of the board's decision-making 3. Makeup and structure of the board 4. Election of board members and continuing knowledge development 5. Internal control The individual directors are assessed on the following six aspects: 1. Understanding of the Company's goals and mission 2. Awareness of director's duties 3. Involvement in the Company's operations 4. Internal relationship and communication 5. Director's professionalism and continuing knowledge development 6. Internal control Each functional Committee is assessed on the following five aspects: 1. Involvement in the Company's operations 2. Awareness of the committee's duties 3. Enhancement of the quality of the committee's decision-making 4. Makeup of the committee and election of its members 5. Internal control

The Company completed self-assessments of Board and each Committee performance in 2023 and reported the results to the Board and each Committee at its first quarter meeting in 2024 for review and improvement. The weighted average score for the overall performance of the Board of Directors is out of 5, that included an average score of 4.90 on a particular assessment item "The board has sufficient discussions over the Company's involvement in the implementation of ESG programs". The weighted average score for the performance of the individual directors is 4.81 out of 5. As demonstrated, the overall board's operation has been effective. On a scale out of 5, the weighted average scores for self-assessed performance results of the Audit and Risk Committee, the Compensation and People Development Committee and the Nominating, Corporate Governance and Sustainability Committee are 4.82, 4.68 and 4.63, respectively. As demonstrated, each committee's operation has been effective.

3.3 Major Decisions of Shareholders' Meeting and Board Meetings

3.3.1 Major Resolutions of Shareholders' Meeting and Implementation Status

TSMC held 2023 Annual Shareholders' Meeting in Hsinchu, Taiwan on June 6, 2023. At the meeting, shareholders present in person or by proxy approved the following resolutions:

(1) The 2022 Business Report and Financial Statements. Consolidated revenue totaled NT$2,263.89 billion and net income was NT$1,016.53 billion, with diluted earnings per share of NT$39.20;

(2) The issuance of employee restricted stock awards for year 2023.

(3) The revisions to the Procedures for Endorsement and Guarantee

(4) The revisions to the following TSMC policies in order to reflect the Audit Committee name change to the Audit and Risk Committee:
- Procedures for Acquisition or Disposal of Assets
- Procedures for Financial Derivatives Transactions
- Procedures for Lending Funds to Other Parties
- Procedures for Endorsement and Guarantee

Implementation Status

All the resolutions of the Shareholders' Meeting have been fully implemented in accordance with the resolutions.

3.3.2 Major Resolutions of Board Meetings

During 2023 and as of the date of this Annual Report, major resolutions approved at Board meetings are summarized below:

(1) Board Meeting of February 13 & 14, 2023:
- approving the 2022 Business Report and Financial Statements;
- approving the distribution of a NT$2.75 per share cash dividend for the fourth quarter of 2022, and setting June 21, 2023 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving distribution of employees' business performance bonus and profit sharing for 2022;
- approving capital appropriations of approximately US$6,959.5 million for purposes including: 1. Installation and upgrade of advanced technology capacity; 2. Installation of specialty technology capacity; 3. Fab construction, and installation of fab facility systems;
- approving the capital injection of not more than US$3.5 billion to TSMC Arizona, a wholly-owned subsidiary of TSMC;
- approving the issuance of unsecured corporate bonds in the domestic market for an amount not to exceed NT$60 billion to finance TSMC's capacity expansion and/or pollution prevention related expenditures;
- to attract and retain corporate executives and critical talents and to link their compensation with shareholders' interests and ESG achievements, the board approved the issuance of 2,110,000 shares of 2022 employee restricted stock awards (RSAs). In addition, the board approved the issuance of no more than 6,249,000 common shares of RSAs for the year 2023, which will be submitted to the 2023 Annual Shareholders' Meeting for approval;
- approving the renaming of "Audit Committee" to "Audit and Risk Committee", and the renaming of "Compensation Committee" to "Compensation and People Development Committee", and the establishment of a "Nominating, Corporate Governance and Sustainability Committee" of the Board of Directors; and
- convening the 2023 Annual Shareholders' Meeting.

(2) Regular Board Meeting of May 9, 2023:
- approving the distribution of a NT$3.00 per share cash dividend for the first quarter of 2023, and setting September 20, 2023 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving capital appropriations of approximately US$366.1 million for the purpose of fab construction and installation of fab facility systems;
- approving the issuance of unsecured corporate bonds in the domestic market for an amount not to exceed NT$60 billion to finance TSMC's capacity expansion and/or pollution prevention related expenditures;
- approving TSMC's "Corporate Governance Guidelines"; and
- approving the promotion of Fab Operations I Fab 18A Senior Fab Director Mr. Ray Chuang to Vice President.

(3) Regular Board Meeting of August 8, 2023:
- approving the distribution of a NT$3.00 per share cash dividend for the second quarter of 2023, and setting December 20, 2023 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving capital appropriations of approximately US$6,059.5 million for purposes including: 1. Fab construction, and installation of fab facility systems; 2. Installation of advanced packaging, mature and/or specialty technology capacity;
- approving an equity investment of not more than €3,499.93 million (approximately US$3,884.9 million) to a TSMC-majority-owned subsidiary, European Semiconductor Manufacturing Company (ESMC) GmbH, in Germany to provide foundry services; and
- approving the capital injection of not more than US$4.5 billion to TSMC Arizona, a wholly-owned subsidiary of TSMC.

(4) Special Board Meeting of September 12, 2023:
- approving the purchase of 10% equity interest in IMS Nanofabrication Global, LLC from Intel Corporation for an amount not exceeding US$432.8 million; and
- approving an investment in Arm Holdings plc in an amount not exceeding US$100 million based on Arm's share price at IPO.

(5) Regular Board Meeting of November 13 & 14, 2023:

- approving the distribution of a NT$3.50 per share cash dividend for the third quarter of 2023, and setting March 24, 2024 as the record date for common stock shareholders entitled to participate in this cash dividend distribution; and
- approving capital appropriations of approximately US$4,341.95 million for purposes including: 1. Installation of advanced technology capacity; 2. Installation of advanced packaging, mature and specialty technology capacity; 3. 2024 R&D capital investments and sustaining capital expenditures; 4. 2024 capitalized leased assets.

(6) Regular Board Meeting of February 5 & 6,2024:

- approving the 2023 Business Report and Financial Statements;
- approving the distribution of a NT$3.50 per share cash dividend for the fourth quarter of 2023, and setting June 19, 2024 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving distribution of employees' business performance bonus and profit sharing for 2023;
- approving capital appropriations of approximately US$9,421.48 million for purposes including: 1. Installation of advanced technology capacity; 2. Installation of advanced packaging, mature and/or specialty technology capacity; 3. Fab construction, and installation of fab facility systems, including construction of the Zero Waste Manufacturing Center at the Southern Taiwan Science Park; 4. capitalized leased assets;
- approving the capital injection of not more than US$5,262 billion to Japan Advanced Semiconductor Manufacturing, Inc. (JASM);
- approving the capital injection of not more than US$5 billion to TSMC Arizona, a wholly-owned subsidiary of TSMC;
- approving the capital injection of not more than US$3 billion to TSMC Global Ltd., a wholly-owned subsidiary of TSMC, for the purpose of reducing foreign exchange hedging costs.
- approving the issuance of 2,960,000 shares of 2023 employee restricted stock awards (RSAs). In addition, approving the issuance of no more than 4,185,000 common shares of RSAs for the year 2024, which will be submitted to the 2024 Annual Shareholders' Meeting for approval; and
- convening the 2024 Annual Shareholders' Meeting;
- approving the promotion of Vice President, Finance and Chief Financial Officer Mr. Wendell Huang to Senior Vice President;
- approving the promotion of Vice President, Legal and General Counsel Ms. Sylvia Fang to Senior Vice President.

(7) Special Board Meeting of February 29, 2024:

- approving the appointment of Senior Vice President of R&D Dr. Y.J. Mii and Senior Vice President of Operations Mr. Y.P. Chyn as Executive Vice Presidents and Co-Chief Operating Officers of TSMC.

3.3.3 Major Issues of Record or Written Statements Made by Any Director Dissenting to Important Resolutions Passed by the Board of Directors in 2023 and as of the Date of this Annual Report: None.

3.4 Corporate Governance Implementation Status as Required by Taiwan Financial Supervisory Commission

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Explanation	
1. Does Company follow "Taiwan Corporate Governance Implementation" to establish and disclose its corporate governance practices?	V		The Board of Directors of the Company has approved the establishment of the Corporate Governance Guidelines, which has been disclosed in the Company's official website.	None
2. Shareholding Structure & Shareholders' Rights (1) Does Company have Internal Operation Procedures for handling shareholders' suggestions, concerns, disputes and litigation matters. If yes, has these procedures been implemented accordingly? (2) Does Company possess a list of major shareholders and beneficial owners of these major shareholders? (3) Has the Company built and executed a risk management system and "firewall" between the Company and its affiliates? (4) Has the Company established internal rules prohibiting insider trading on undisclosed information?	V V V V		(1) TSMC has designated appropriate departments, such as Investor Relations Division, Public Relations Division, Shareholders Services & SEC Compliance Department, Legal, etc., to handle shareholder suggestions, concerns, disputes or litigation matters according to relevant internal procedures. (2) TSMC tracks the shareholdings of directors, officers, and top ten shareholders. (3) TSMC has set up internal rules in the Company's Internal Control System and Affiliated Corporations Management. (4) TSMC has established its "Insider Trading Policy" that applies to all employees, officers and members of the Board of Directors of the Company and to any other person having a duty of trust or confidence, with respect to transactions in the Company's securities. This policy prohibits any insider trading and the Company regularly provides internal training on this issue.	None

(Continued)

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Explanation	
3. Composition and Responsibilities of the Board of Directors (1) Has the Board of Directors established a diversity policy, set goals, and implemented them accordingly?	V		(1) Please refer to "3.2 Board of Directors – Board Diversity and Independence" on page 46 of this Annual Report.	None
(2) Other than the compensation committee and the audit committee which are required by law, does the Company plan to set up other Board committees?	V		(2) Audit and Risk Committee (Audit Committee is founded in 2002 and renamed in 2023); Compensation and People Development Committee (Compensation Committee is founded in 2003 and renamed in 2023); Nominating, Corporate Governance and Sustainability Committee (founded in 2023); ESG Steering Committee (founded in 2019): is formed by the Company's management team and chaired by Chairman Mark Liu; ESG Committee (founded in 2011): is formed by the Company's executive team and reports quarterly to the Board/ Nominating, Corporate Governance and Sustainability Committee on the implementation of plans and results.	
(3) Has the Company established methodology for evaluating the performance of its Board of Directors, on an annual basis, reported the results of performance to the Board of Directors, and use the results as reference for directors' remuneration and renewal?	V		(3) As TSMC's corporate governance concept, the Board of Director's primary responsibility is to supervise, evaluate the management's performance and dismiss officers of the Company when necessary, resolve the important, concrete matters and provide guidance to the management team. TSMC's Board of Directors consists of distinguished members with a great breadth of experience as world-class business leaders or professionals and adhere high ethical standards and commitment to the Company. Each quarter's Board Meeting is last for two days. Company's resolutions are determined in board meeting, also business strategy and future orientation are discussed in the meeting, in order to create best interest for shareholders. Based on TSMC's operating performance and local/international awards of best corporate governance, it certainly proves the Company's excellent performance of Board of Directors. Each year, TSMC conducts regular Board performance self-evaluation in form of written questionnaires for the Board, individual directors, the Audit and Risk Committee, the Compensation and People Development Committee, and the Nominating, Corporate Governance and Sustainability Committee. The Board of Directors are assessed on the following five aspects: 1. Involvement in the Company's operations 2. Enhancement of the quality of the board's decision-making 3. Makeup and structure of the board 4. Election of board members and continuing knowledge development 5. Internal control The individual directors are assessed on the following six aspects: 1. Understanding of the Company's goals and mission 2. Awareness of director's duties 3. Involvement in the Company's operations 4. Internal relationship and communication 5. Director's professionalism and continuing knowledge development 6. Internal control Each functional Committee is assessed on the following five aspects: 1. Involvement in the Company's operation 2. Awareness of the committee's duties 3. Enhancement of the quality of the committee's decision-making 4. Makeup of the audit committee and election of its members 5. Internal control The Company completed self-assessments of Board performance in 2022 and reported the results to the Board of Directors at its first quarter meeting in 2023 for review and improvement. The weighted average score for the overall performance of the Board of Directors is 4.73 out of 5, that included an average score of 4.90 on a particular assessment item "The board has sufficient discussions over the Company's involvement in the implementation of ESG programs". The weighted average score for the performance of the individual directors is 4.81 out of 5. As demonstrated, the overall board's operation has been effective. On a scale of 5, the weighted average scores for self-assessed performance results of the Audit and Risk Committee, the Compensation and People Development Committee and the Nominating, Corporate Governance and Sustainability Committee are 4.82, 4.68 and 4.63, respectively. As demonstrated, each committee's operation has been effective.	
(4) Does the Company regularly evaluate its external auditors' independence?	V		(4) The Audit and Risk Committee annually evaluates the independence of external auditors and reports the same to the Board of Directors. Please refer to "3.9.4 Evaluation of the External Auditor's Independence and Suitability" on page 67 of this Annual Report.	

(Continued)

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Explanation	
4. Does the Company appoint competent and appropriate corporate governance personnel and corporate governance officer to be in charge of corporate governance affairs (including but not limited to furnishing information required for business execution by directors, assisting directors' compliance of law, handling matters related to board meetings and shareholders' meetings according to law, and recording minutes of board meetings and shareholders' meetings)?	V		The Board of Directors appointed the Vice President of Legal and General Counsel of TSMC as the Corporate Governance Officer. TSMC's Corporate & Compliance Legal Division, which directly reports to the General Counsel, is in charge of assisting in related affairs, including handling of matters relating to Board, Audit and Risk Committee, Compensation and People Development Committee, Nominating, Corporate Governance and Sustainability Committee and Shareholders' meetings in compliance with law, assistance in onboarding and continuing education of directors, provision of information required for performance of duties by directors, and assistance in directors' compliance of law, etc.	None
5. Has the Company established a means of communicating with its Stakeholders (including but not limited to shareholders, employees, customers, suppliers, etc.) or created a Stakeholders Section on its Company website? Does the Company respond to stakeholders' questions on corporate responsibilities?	V		Depending on the situation, the Company's Investor Relations Division, Public Relations Division, Shareholders Services & SEC Compliance Department, Human Resources Organization, Customer Service Department, Procurement Department and ESG will communicate with stakeholders. We also have publicly disclosed the contact information of our corporate spokesperson and relevant departments. Also, we have a stakeholder section on our corporate website to address our sustainability and any other issues. For details, please refer to "7. Environmental Social Governance (ESG)" on page 150-176 of this Annual Report and "Materiality Analysis and Stakeholder Communication" of TSMC's Sustainability Report.	None
6. Has the Company appointed a professional registrar for its Shareholders' Meetings?	V		We have appointed China Trust as registrar for our Shareholders' Meetings.	None
7. Information Disclosure				None
(1) Has the Company established a corporate website to disclose information regarding its financials, business and corporate governance status?	V		(1) TSMC discloses its financials business and corporate governance status on its website at http://www.tsmc.com (in Chinese and English). TSMC's American Depositary Receipt (ADR) is listed on the New York Stock Exchange (NYSE). As a foreign issuer, TSMC must comply with NYSE's rules. We have been operating in accordance with NYSE listing standards, and have been disclosing the major differences between our corporate governance practices and U.S. corporate governance practices. Please see https://www.tsmc.com/download/ir/NYSE_Section_303A.pdf.	
(2) Does the Company use other information disclosure channels (e.g. maintaining an English-language website, designating staff to handle information collection and disclosure, appointing spokespersons, webcasting investors conference etc.)?	V		(2) TSMC has designated appropriate departments (e.g. the Investor Relations Division, Public Relations Division, Shareholders Services & SEC Compliance Department, etc.) to handle the collection and disclosure of information as required by the relevant laws and regulations of Taiwan and other jurisdictions. TSMC has designated Spokesperson and Deputy Spokesperson as required by relevant regulations. TSMC provides live audio webcasts and replays of investor conferences on its website.	
(3) Does the Company announce and report the annual financial statements within two months after the end of the fiscal year, and announce and report the first, second, and third quarter financial statements as well as the operating status of each month before the prescribed deadline?	V		(3) TSMC follows relevant laws and regulations to announce and report the annual financial statements within two months after the end of the fiscal year, and announce and report the first, second, and third quarter financial statements as well as the operating status of each month before the prescribed deadline. Please refer to Market Observation Post System for the aforementioned disclosure.	
8. Has the Company disclosed other information to facilitate a better understanding of its corporate governance practices (e.g. including but not limited to employee rights, employee wellness, investor relations, supplier relations, rights of stakeholders, directors' training records, the implementation of risk management policies and risk evaluation measures, the implementation of customer relations policies, and purchasing insurance for directors)?	V		(1) For employee rights and employee wellness, please refer to "5.6 Human Capital" on page 112-119 of this Annual Report. (2) For investor relations, supplier relations and rights of stakeholders, please refer to "7. Environmental Social Governance (ESG)" on page 150-176 of this Annual Report. (3) For Directors' training records, please refer to "Continuing Education/Training of Directors in 2023" on page 57 of this Annual Report. (4) For Risk Management Policies and Risk Evaluation, please refer to "6.3 Risk Management" on page 133-149 of this Annual Report. (5) For Customer Relations Policies, please refer to "5.4 Customer Trust" on page 109-111 of this Annual Report. (6) TSMC maintains D&O Insurance for its directors and officers.	None
9. The improvement status for the result of Corporate Governance Evaluation announced by Taiwan Stock Exchange TSMC was ranked in top 5% in Corporate Governance Evaluation over the years. The improvement status in 2023 is as follows: (1) The TSMC Board set up the "Audit Committee" and the "Compensation Committee" in 2002 and 2003 respectively. In order to make our corporate governance more comprehensive, the TSMC Board took a step further in February 2023 to expand and strengthen the functions and responsibilities of its Committees, including renaming the "Audit Committee" to the "Audit and Risk Committee", and the renaming the "Compensation Committee" to the "Compensation and People Development Committee". It also established a "Nominating, Corporate Governance and Sustainability Committee". (2) The TSMC Board established TSMC's "Corporate Governance Guidelines" in May 2023.				

Continuing Education/Training of Directors in 2023

The major training methods of Directors include:

- At quarterly Board meetings, TSMC management presents updates on the Company's business, regulatory developments and other information;
- The Company arranges speeches on politics, economics, and regulatory compliance, etc.;
- At quarterly Audit and Risk Committee meetings, TSMC's General Counsel and the Company's independent auditors provide regulatory update reports and legal compliance status; and
- Directors participate in externally-provided training courses as needed.

In addition, from time to time, Directors are invited by other parties to give speeches on corporate governance and related topics.

Name	Date	Host by	Training/Speech Title	Duration
Mark Liu (Note)	09/06	SEMI	SEMICON Taiwan 2023, CEO Summit Keynote speech: Semiconductor Technology in the Era of Artificial Intelligence	2.5 hours
	10/02	Science and Technology in Society (STS) Forum	Semiconductor Technology in the Era of Artificial Intelligence	1 hour
	11/22	Chinese National Association of Industry and Commerce	Gongliang Memorial Lecture: TSMC in the Artificial Intelligence (AI) Era	1.5 hours
F.C. Tseng	04/27	Taiwan Corporate Governance Association	Development of Artificial Intelligence and Application of Third-generation Semiconductors in Servers	3 hours
	12/08	Taiwan Corporate Governance Association	TCFD & SBTi Development Trends and Directors' Powers	3 hours
Sir Peter L. Bonfield	06/20	AlixPartners, London	Impact of Semiconductors in Electric Cars and Supply Chains	1 hour
	09/15	Darktrace	Cybersecurity Training for Board Members	4 hours
	11/23	AlixPartners, Munich	Impact of Semiconductors in Electric Cars and Supply Chains	1 hour
Moshe N. Gavrielov	04/28	Ascend	Director Summit	2 hours
	07/10-11	Goldman Sachs	Corporate Director Symposium	9 hours
	09/20-22	Morgan Stanley	6th Annual Semiconductor Company CEO and Board of Directors Forum	12 hours
	11/01-03	McKinsey & Company	T-30 Semiconductor Executive/Board Member Event	12 hours
	11/07	Barclays	Semiconductor Board and CEO Summit	6 hours
Yancey Hai	04/27	Taiwan Corporate Governance Association	Corporate Strategy	3 hours
	07/31	Taiwan Corporate Governance Association	Technology, Applications and Societal Impacts of Artificial Intelligence	3 hours

Note: Selected speeches on corporate governance and related topics.

Continuing Education/Training of Corporate Governance Officer in 2023

Name	Date	Host by	Training/Speech Title	Duration
Vice President and General Counsel Corporate Governance Officer Sylvia Fang	04/07	Securities and Futures Institute	Practical Advanced Seminar for Directors and Supervisors (including Independent) and Corporate Governance Officers – 2030/2050 Green Industrial Revolution	3 hours
	04/21	Taiwan Corporate Governance Association	How Board of Directors Formulate ESG Sustainable Governance Strategies in 2023	3 hours
	11/22	Intellectual Property Office, Ministry of Economic Affairs, R.O.C. Taiwan Association for Trade Secret Protection	Trade Secret Protection and Management Practice Sharing Forum	3 hours
	12/01	Intellectual Property Office, Ministry of Economic Affairs, R.O.C. Taiwan Association for Trade Secret Protection	Trade Secret Litigation Practice and the Impact of Generative AI on Trade Secret Protection	3 hours

3.5 Code of Ethics and Business Conduct

Ethics at TSMC

"Integrity" is TSMC's most important core value. TSMC strictly adheres to the highest standards of integrity and promotes good ethical behavior to sustain the hard-earned trust and confidence of its shareholders, customers, suppliers, employees and the general public – constantly and vigilantly promoting integrity, fairness, and transparency in all that we say and do. We have zero tolerance for corruption, refrain from bribery, fraud, abuse or embezzlement of corporate assets, and prohibit the advancement of personal interests at the expense of or in conflict with TSMC. At the heart of our corporate governance culture is the "TSMC

Ethics and Business Conduct Policy" (Ethics Code). The Ethics Code requires that each employee bear a heavy personal responsibility to preserve and to protect TSMC's ethical values and reputation. At the same time, we have formulated the "TSMC's Supplier Code of Conduct" as well to ensure our suppliers understand and follow the Ethics Code and together fulfill our corporate social responsibilities.

Specifically, every TSMC employee must adhere to the following:

- Do not advance personal interests at the expense of or in conflict with the Company;
- Refrain from corruption (including collusion with others), bribery, unfair competition, fraud, extortion, embezzlement, and waste or abuse of corporate assets;
- Avoid any improper efforts to influence the decisions of anyone, including government officials, agencies, as well as TSMC's customers and suppliers;
- Do not undertake any practices detrimental to TSMC, to the environment, or to society;
- Procure all of our raw materials from socially responsible sources;
- Protect proprietary information of TSMC, our customers and suppliers; and
- Abide by the letter of all applicable laws, rules and regulations.

The protection of intellectual properties is also an important part of TSMC's Ethics Code. In order to build and sustain an environment of innovation, technology leadership, and sustainable profitable growth, the Ethics Code requires that TSMC promotes business relationships founded upon an unwavering respect for the intellectual property rights, proprietary information and trade secrets of TSMC, our customers, and others.

With regarding to public disclosures, TSMC's officers, especially our CEO, CFO, and General Counsel, with oversight from our Board, are responsible for the full, fair, accurate, timely, and understandable financial accounting and financial disclosure in reports and documents filed by the Company with securities authorities and in all TSMC public communications and disclosures. TSMC has a variety of measures in place to ensure compliance with these disclosure obligations.

Any modification to the Ethics Code requires the approval of our Audit and Risk Committee to ensure our ethics compliance program is independently reviewed against corporate best practices.

Ethics Code Implementation

High Standard of Ethics Culture: Our ethics program is implemented in four ways by all of TSMC's Board members, officers, and employees. First, the TSMC management team sets the "tone from top" by acting in accordance with the Ethics Code so that they will be an example to all stakeholders. Second, working-level managers are responsible for ensuring their staff's understanding of and compliance with applicable rules and regulations. Third, TSMC encourages an environment of open communications in discussing any questions related to the Ethics Code. Any employee may consult his or her direct supervisors, Human Resources or Legal to obtain timely advice. Lastly, TSMC requires all employees to stay vigilant and report any noncompliance by anyone to their supervisors, the function head of Human Resources, the responsible corporate senior management appointed by CEO that oversees the Ombudsman system, or to the Chairman of the Company's Audit and Risk Committee directly.

Self-Assessment of All Departments and Employees: Self-assessment of all departments and employees is an important part of our ethics compliance program. All TSMC departments and subsidiaries are required to conduct Control Self-Assessment (CSA) tests annually in reviewing employees' awareness of the Ethics Code, and to evaluate and strengthen the effectiveness of internal control related to the Ethics Code. The CSA results are reviewed to track the results of our compliance program. In addition, all employees must disclose any matters that cause, or may cause, actual or potential conflict of interest. In addition to this proactive disclosure requirement, employees with specific job grades or job responsibilities must annually declare any relationships that may constitute a conflict of interest, which enables TSMC to take necessary arrangements and report the results to the Audit and Risk Committee.

Internal Auditing: The Internal Auditor of TSMC plays a critical role in ensuring the Company's compliance with the Ethics Code and relevant rules and regulations. To ensure that our financial, managerial, and operating information is accurate, reliable, and timely and that our employees' actions are in compliance with applicable policies, standards, procedures, laws and regulations, our Internal Auditor conducts audits of various control points within the Company in accordance with its annual audit plan approved by the Board of Directors and subsequently reports its audit findings and remedial issues to the Board and management on a regular basis.

Training and Promotion: To promote awareness to our employees of their responsibilities under the Ethics Code, we publish our Ethics Code and related policies and documents on our intranet and, provide training courses, posters, emails, and other diversified ways to advocate the Company's core values and compliance system. In terms of training courses, TSMC not only provides annual online course on the Ethics Code and requires all employees to complete the training, as well as face-to-face training courses delving into more specific ethics-related topics for targeted employees. In 2023, there were 73,034 attendances that completed the "Annual Ethics and Compliance Training Course" (mandatory 0.5 hour online course) at TSMC and its subsidiaries, both completion rate and exam pass rate reaching 100%.

In addition to our internal compliance efforts, we expect and assist our business partners such as customers and suppliers, and any other entities with whom we deal (include consultants or third party agents who act for or on behalf of TSMC) to recognize and understand TSMC's ethical standards to fulfill our responsibilities as a corporate citizen. For instance, we require all of our suppliers to declare in writing that they will respect and comply with TSMC's ethical standards and culture. TSMC is a full member of the Responsible Business Alliance (RBA, formerly the Electronic Industry Citizenship Coalition, EICC). In addition to adopting the RBA Code of Conduct at all of its facilities, TSMC applied the RBA's standards to enhance our audit program of our suppliers and relevant business partners. We provide training and communicate our ethical culture to our suppliers through live seminars and online programs to prevent any unethical conduct and detect any sign of Ethics Code violations. In 2023, we held a sustainable supply chain ESH forum to share/exchange practical experiences on topics such as the Ethics Code, environmental protection, and occupational safety. We also exchange views on appropriate business conduct and TSMC's ethical standards and implementation status with our customers as part of customer audit programs.

Reporting Channels and Whistleblower Protection

TSMC has established and published its "Complaint Policy and Procedure for Certain Accounting & Legal Matters" and pledges to comply with the relevant regulations in the policy. Open and multiple reporting channels are available for internal and external voices to protect the rights and interests of stakeholders and the Company. All reported incidents collected from reporting channels inside or outside of TSMC are properly recorded and traced. TSMC also prohibits any form of retaliation by providing proper protection for any individual who in good faith reports a suspected violation or participates in an investigation. In 2023, the Ethics Committee held a total of five meetings to examine major reported incidents under investigation.

TSMC investigates each individual case according to its characteristics through specific divisions, and treats every received case seriously, carefully, and effectively to ensure the accuracy of the investigation. The TSMC Ethics Committee will evaluate each case to determine whether it is an exceptional case or whether it results from systemic issues of insufficient awareness in ethics. This allows TSMC to continue evaluating whether it is necessary to improve its management and internal control procedures. Awareness such as emails to employees describing the violations and disciplinary actions in each quarter are conducted to promote employees' awareness and avoid recurrence of similar incidents.

In 2023, TSMC did not receive any reports related to insider trading, money laundering, or other finance, accounting or antitrust matters, nor did we receive any complaints concerning breach of customer privacy and loss of customer data, or any material regulatory violations (where a fine exceeds NT$1 million), including non-monetary sanctions.

In 2023, the incidents reported through the Audit and Risk Committee Whistleblower System, Ombudsman System, and Irregular Business Conduct Reporting System totaled 348. Among them, 218 cases were related to people management/employee relations, 117 cases were categorized as others (e.g., asking personal questions or private matters), and 13 cases were related to ethics. Five incidents were verified upon investigation and determined for disciplinary action by the Ethics Committee. In 2023, TSMC leveraged the five violations to strengthen ethics promotion for employees and suppliers in supplier-related activities. Below are the summary of reported incidents and reporting area.

Case	FY2019	FY2020	FY2021	FY2022	FY2023
Total reported cases Ethics-related cases Cases investigated and verified as ethics violations	205 26 2	246 22 6	327 17 4	335 11 4	348 13 5 (Note 1)
Sexual Harassment Investigation Committees Formed Cases investigated and verified as violations	4 4	4 2	14 11	19 14	35 23 (Note 2)

Note 1: Of the five verified cases: one incident involved employee of vendor failed to follow the SOP for scrapping materials, one incident involved employees of vendors evaded the regular process to steal TSMC scrapped materials in pursuit of personal gain, and all the employees of the vendors involved in the misconducts were prohibited to provide service in TSMC. One incident involved employee who failed to follow TSMC's conflict-of-interest principles when dealing with vendors and received major demerit. One incident involved an employee who improperly asked subordinates to fund the department event, failed to follow SOP for payment requests, and failed to separate their personal and public accounts. The supervisor received a major demerit. One incident involved an employee who improperly asked a specific vendor to buy food and drinks to treat the other vendor who helped that specific vendor to complete the undo job. Even the purpose behind was not related to the bribery or fraud, the employee then received oral coaching.

Note 2: Employees who violated Company sexual prevention policy (the "Policy") were disciplined by the Company based on the case-by-case nature and severity of the verified misbehaviors. Since these violations involved various inappropriate behaviors, the Company leveraged the violations and summarized the Policy to educate employees what kinds of behaviors could be viewed as sexual harassment and the consequences as well as emphasize the type and possible consequences for power harassment in 2023 TMSC annual sexual harassment prevention training so as to raise employees' awareness.

Cases Investigated and Verified as Violations in Different Reporting Area	FY2019	FY2020	FY2021	FY2022	FY2023 (Note)
Corruption or Fraud	2	6	4	4	2
Discrimination or Harassment	4	2	11	14	22
Customer Privacy Data	0	0	0	0	0
Conflicts of Interest	-	-	-	-	1
Money Laundering or Insider trading	-	-	-	-	0
Antitrust	0	0	0	0	0
Others	-	-	-	-	2

Note: The reporting area classification is starting from 2023.

Ethics Code Violation Disciplinary Action

TSMC does not tolerate any violation of the Ethics Code and treat every possible violation incident seriously. Each violator of the Ethics Code (or relevant regulations), for employees, in addition to affecting individual annual performance evaluation, will be severely disciplined to the full extent of our policies and the law, up to and including immediate dismissal, or termination of business relationship for suppliers, and judicial prosecution as appropriate.

3.5.1 Corporate Conduct and Ethics Implementation Status as Required by Taiwan Financial Supervisory Commission

Assessment Item	Implementation Status			Causes for the Difference
	Yes	No	Summary	
1. Establishment of Corporate Conduct and Ethics Policy and Implementation Measures				None
(1) Does the company have a clear ethical corporate management policy approved by its Board of Directors, and bylaws and publicly available documents addressing its corporate conduct and ethics policy and measures, and commitment regarding implementation of such policy from the Board of Directors and the top management team?	V		(1) Integrity is the most important core value of TSMC's culture. TSMC is committed to acting ethically in all aspects of our business. We have established TSMC Code of Ethics and Business Conduct (the "Ethics Code") to require that each employee bears a heavy personal responsibility to uphold TSMC's ethics value. For more details on the Ethics Code and the measures that TSMC Board of Directors (the "Board") and the management team take to ensure compliance of the Ethics Code please refer to TSMC's Annual Report and the Sustainability Report.	
(2) Whether the company has established an assessment mechanism for the risk of unethical conduct; regularly analyzes and evaluates within a business context, the business activities with a higher risk of unethical conduct; has formulated a program to prevent unethical conduct with a scope no less than the activities prescribed in paragraph 2, Article 7 of the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies?	V		(2) At the heart of our corporate governance culture is the Ethics Code that applies to TSMC and its subsidiaries, and this Ethics Code requires that each employee bears a heavy personal responsibility to preserve and to protect TSMC's ethical values and reputation and to comply with various applicable laws and regulations. Specific requirements under the Ethics Code could be found in our Annual Report. In addition, to educate and remind our employees of their responsibilities under the Ethics Code, we publish our Ethics Code, relevant policies and documents on our intranet and promote its awareness through training courses, posters, emails, and other diversified ways to advocate the company's core values and compliance. Furthermore, to ensure that our conduct meets relevant legal requirements and the highest ethical standards under the Ethics Code, TSMC provides multiple channels for reporting business conduct concerns. Please refer to Assessment Item 3 for details. We do not tolerate any violation of the Ethics Code and treat every possible violation incident seriously. Each violator of the Ethics Code (or relevant regulations), for employees, in addition to affecting individual annual performance evaluation, will be severely disciplined to the full extent of our policies and the law, up to and including immediate dismissal, or termination of business relationship for suppliers, and judicial prosecution as appropriate.	
(3) Whether the company has established relevant policies that are duly enforced to prevent unethical conduct, provided implementation procedures, guidelines, consequences of violation and complaint procedures, and periodically reviews and revises such policies?	V		(3) Under the framework of the Ethics Code, TSMC has established a regulatory compliance program that includes policies, guidelines and procedures in other policy areas, including: Corporate Governance, Securities Laws, Anti-corruption, Anti-harassment, Anti-discrimination, Labor Laws, Anti-trust (fair competition), Environmental Protection, Safety and Health, Export Control, Financial Reporting, Insider Trading, Intellectual Property, Proprietary Information Protection, Personal Data Protection, Record Retention and Disposal, as well as procuring certain raw materials from socially responsible sources (Conflict-free Minerals). The above-mentioned policies are crucial in facilitating overall compliance with the Ethics Code. TSMC provided an "Annual Ethics and Compliance Training Course"(mandatory 0.5 hour online course) covering various important regulatory compliance topics and a total of 73,034 employees (including employees in subsidiaries) completed this training course, both completion rate and exam pass rate reaching 100%. TSMC, its employees and its subsidiaries are expected to fully understand and comply with all laws and regulations that govern our businesses, as well as relevant policies, guidelines and procedures, and make ethical decisions in every circumstance. The Internal Auditor of TSMC also plays a critical role in ensuring the Company's compliance with the Ethics Code and relevant rules and regulations. To ensure that our financial, managerial, and operating information is accurate, reliable, and timely and that our employee's actions are in compliance with applicable policies, standards, procedures, laws and regulations, our Internal Auditor conducts audits of various control points within the Company in accordance with its annual audit plan approved by the Board of Directors and subsequently reports its audit findings and remedial issues to the Board and Management on a regular basis.	

(Continued)

Assessment Item	Implementation Status			Causes for the Difference
	Yes	No	Summary	
2. Ethic Management Practice (1) Whether the company has assessed the ethics records of whom it has business relationship with and include business conduct and ethics related clauses in the business contracts?	V		(1) We expect and assist our customers, suppliers, business partners, and any other entities with whom we deal (such as consultant or third party agents who act for or on behalf of TSMC) to understand and act in accordance with TSMC's ethical standards. For instance, we require all of our suppliers to declare in writing that they will respect and comply with TSMC's ethical standards and culture. In addition to periodic audit, we provide training and communicate our ethical culture to our suppliers through live seminars or online programs to prevent any unethical conduct. We exchange views on appropriate business conduct and TSMC's ethical standards with our customers as part of customer audit programs.	None
(2) Whether the company has set up a unit which is dedicated to promoting the company's ethical standards and regularly (at least once a year) reports directly to the Board of Directors on its ethical corporate management policy and relevant matters, and program to prevent unethical conduct and monitor its implementation?	V		(2) TSMC's Board of Directors strives to perform the responsibilities of supervising the corporate conduct and ethics compliance practice through the Audit and Risk Committee and the Compensation and People Development Committee, the hiring of a financial expert consultant for the Audit and Risk Committee, and coordination with the Internal Audit department. The General Counsel and the Corporate & Compliance Legal Division (which directly reports to the General Counsel) promotes the Company's ethical standards, and the General Counsel reports quarterly to the Board on the implementation status. In addition, both the responsible senior manager appointed by the CEO to oversee the Ombudsmen system and Internal Auditors update the Board on ethical standards and compliance issues on a regular basis. Moreover, TSMC's officers, especially our CEO, CFO, and General Counsel, with oversight from our Board, are responsible for the full, fair, accurate, timely, and understandable financial accounting and financial disclosure in reports and documents filed by the Company with securities authorities and in all TSMC public communications and disclosures.	
(3) Whether the company has established policies to prevent conflict of interests, provide appropriate communication and complaint channels and implement such policies properly?	V		(3) TSMC requires newly hired employees to declare any conflict of interest situation as appropriate. In addition, according to the Ethics Code, all employees must declare any actual or potential conflict of interest. Furthermore, employees with specific job grades or positions need to complete the conflict of interest declarations annually.	
(4) To implement relevant policies on ethical conducts, has the company established effective accounting and internal control systems, audit plans based on the assessment of unethical conduct, and have its ethical conduct program audited by internal auditors or CPA periodically?	V		(4) TSMC continues maintaining the integrity of its financial reporting processes and controls and establishes appropriate internal control systems for preventing higher potential unethical conduct, and the Internal Auditors formulate annual audit plans based on the results of the risk assessment and subsequently reports its audit findings and remedial issues to the Board and Management on a regular basis. In addition, all departments and subsidiaries of TSMC are also required to conduct Control Self-Assessment (CSA) tests annually to review the effectiveness of the internal control system.	
(5) Does the company provide internal and external ethical conduct training programs on a regular basis?	V		(5) Training is a major component of our compliance program, conducted throughout the year to refresh TSMC's employees' commitment to ethical conduct, and to get updated information on laws and regulations related to their daily operations. Please refer to Assessment Item 1 for more information regarding the training courses. As for our suppliers, we communicate our ethical culture to our business partners through live seminars or online programs to ensure their fully understanding of our commit to ethical conduct.	
3. Implementation of Complaint Procedures (1) Does the company establish specific complaint and reward procedures, set up conveniently accessible complaint channels, and designate responsible individuals to handle the complaint received?	V		(1) TSMC has implemented the "Complaint Policy and Procedures for Certain Accounting and Legal Matters" that allows employees or any whistleblowers with relevant evidence to report any financial, legal, or ethical irregularities anonymously through the Audit and Risk Committee Whistleblower System, Ombudsman System, and Irregular Business Conduct Reporting System. TSMC also requires all employees to stay vigilant and whistle-blow any noncompliance by anyone to their supervisors, the function head of Human Resources, or through those current reporting channels.	None
(2) Whether the company has established standard operation procedures for investigating the complaints received, follow-up measures after investigation are completed, and ensuring such complaints are handled in a confidential manner?	V		(2) TSMC treats any complaint and the investigation thereof in a confidential and sensitive manner, as is clearly stated in our bylaws.	
(3) Does the company adopt proper measures to prevent a complainant from retaliation for his/her filing a complaint?	V		(3) TSMC strictly prohibits any form of retaliation against any individual who in good faith reports or helps with the investigation of any complaint, as is clearly stated in our bylaws.	
4. Information Disclosure Does the company disclose its guidelines on business ethics as well as information about implementation of such guidelines on its website and Market Observation Post System ("MOPS")?	V		TSMC provides the guidelines and informative articles related to ethics and honorable business conduct on its internal website (in both Chinese and English) for employees' easy access. In addition, TSMC posts its Annual Report (which is also available at the MOPS)and Sustainability Report on its external website (in both Chinese and English, available at: http://www.tsmc.com) to disclose TSMC Ethics Code and the information about implementation of the Ethics Codes.	None
5. If the company has established corporate governance policies based on Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies, please describe any discrepancy between the policies and their implementation. TSMC has established the Ethics Code to require that all employees, officers and board members comply with the Ethics Code and the other policies and procedures. There is no discrepancy between the Ethics Code, including its affiliate policies and procedures, and its implementation. For more details, please refer to "3.5 Code of Ethics and Business Conduct" on page 57-62 of this Annual Report.				
6. Other important information to facilitate better understanding of the company's corporate conduct and ethics compliance practices (e.g., review the company's corporate conduct and ethics policy). For details on the implementation of TSMC's corporate conduct and ethics, please refer to "3.5 Code of Ethics and Business Conduct" on page 57-62 of this Annual Report.				

3.6 Regulatory Compliance

TSMC's compliance systems are comprised of a series of legislation monitoring, developing and implementation of effective compliance policies and programs, training, and maintaining open reporting channels.

Legislative Monitoring

TSMC operates in many countries. To comply with governing legislation, applicable laws, regulations and regulatory expectations, we closely monitor domestic and foreign government policies and regulatory developments that could materially impact TSMC's business and financial operations. Our Legal organization periodically updates our relevant internal departments, management and the Audit and Risk Committee of applicable regulatory changes so that internal teams ensure compliance with new regulatory requirements in a timely manner. We are also a proactive advocate for legislative and regulatory reform, and our comments and recommendations on legal reforms to the government have been accepted constructively. TSMC is increasingly dedicated to identifying potential regulatory issues and will continue to be involved in advocating public policy changes that foster a positive and fair business environment.

Policy and Compliance Program Development and Implementation

TSMC has established a regulatory compliance program that includes policies, guidelines and procedures in different compliance areas, including: Corporate Governance, Securities Laws, Anti-corruption, Anti-harassment, Anti-discrimination, Labor Laws, Antitrust (fair competition), Environmental Protection, Safety and Health, Export Control, Financial Reporting, Insider Trading, Intellectual Property, Proprietary Information Protection, Personal Data Protection, Record Retention and Disposal, as well as procuring certain raw materials from socially responsible sources (Conflict-free Minerals). It is our belief that these policies are crucial in strengthening overall compliance with the Ethics Code and compliance program. TSMC, its employees and its subsidiaries are expected to fully understand and comply with all laws and regulations that govern our businesses, as well as internal relevant policies, guidelines and procedures, and make ethical decisions in every circumstance.

Compliance Awareness Training

Training is one of the major components of our regulatory compliance program. To get updated information on laws and regulations related to their daily operations and to strengthen TSMC's employees' commitment to regulatory compliance and ethical conduct through regular promotion and training courses. Highlights of our training include:

- Multiple types for training and promotion: TSMC enriches employees' information sources for regulatory compliance through various promotion activities. Awareness promotion emails to employees, posters at our facilities, and compliance guidelines, news articles, tips and FAQs which our employees can access through our intranet.
- Customized face-to-face training courses for different business attributes: For important specific laws and regulations, TSMC provides face-to-face seminars. These customized training is made mandatory for those employees whose job responsibilities are especially relevant to a particular topic to ensure sufficient awareness of relevant laws and internal policies.
- Various on-line courses available to employees at any time: On-line learning programs updated frequently to provide most up-to-date information and timely and flexible access for employees to understand the law and key compliance issues, covering topics of Corporate Governance, Securities Laws, Anti-corruption, Anti-harassment, Anti-discrimination, Labor Laws, Antitrust (fair competition), Environmental Protection, Safety and Health, Export Control, Financial Reporting, Insider Trading, Intellectual Property, Proprietary Information Protection, Personal Data Protection, Record Retention and Disposal, as well as "Conflict-free Minerals" among others. The course contents will be updated with changes in applicable laws or TSMC internal policies to ensure the timeliness and accuracy of the course contents.
- Continuous training of the Legal team: TSMC's Legal team actively participate in external professional courses held in Taiwan or abroad to receive current developments of new laws and regulations and track the latest developments in various professional legal fields, and for its lawyers to comply with applicable continuing legal education requirements. External experts are also invited to give in-house lectures on key issues.

Reporting Channels

TSMC provides multiple channels for reporting business conduct concerns to ensure that our conduct meets relevant legal requirements and the highest ethical standards under the Ethics Code. For more details about the reporting channels, please refer to “3.5 Code of Ethics and Business Conduct” on page 57-62 of this Annual Report.

Major Accomplishments

In 2023, TSMC achieved several major accomplishments in regulatory compliance. Externally, in addition to fulfilling the Company’s obligations toward regulatory compliance matters, TSMC exercised its civic duties as a responsible corporate citizen by providing feedback on current regulations and regulations in legislation, with the intent to improve Taiwan’s industrial investment environment, enhance economic development, and help align domestic laws with international law. Furthermore, TSMC continues to focus on the topics related to the Company Law, the Securities and Exchange Act, intellectual property protection and environment protection. In addition, TSMC shared its practices and experiences on trade secrets, labor rights, regulatory compliance system and reporting channel with outside institutions.

Internally, TSMC provides multiple courses about legal and regulatory compliance. The important achievements are as follows:

- Ethics and Compliance: TSMC provided an “Annual Ethics and Compliance Training Course” (mandatory 0.5 hour online course) covering various important regulatory compliance topics and a total of 73,034 employees (including employees in subsidiaries) completed this training course, both completion rate and exam pass rate reaching 100% – with all production staffs were starting from 2019.
- Export Compliance: TSMC’s export management system (EMS) and policy have been in place for a number of years, and was certified by the Bureau of Foreign Trade, the Taiwan regulator, as a qualified Internal Compliance Program (ICP) exporter. It aims to ensure that TSMC complies with all applicable regulations covering the export of information, technologies, products, materials and equipment. In addition, TSMC implements “No ECCN, No Shipment” control and customers are required to provide end use and export control classification number (ECCN) of their products, among other required information, for TSMC to apply for applicable export licenses. To further enhance relevant employees’ awareness of the export control requirements, in 2023 TSMC altogether provided 9 face-to-face meeting sessions and a targeted on-line learning program to employees in relevant functions.
- Supplier Management: TSMC shares and exchanges practical experiences with suppliers with sales offices in Taiwan by holding a sustainable supply chain ESH forums on topics such as Ethics Code, environmental protection and occupational safety. In total, 359 attendees from 117 suppliers participated (including through on-line meeting) in these activities.
- Conflict-Free Supply Chain: As a recognized global leader in the Hi-tech supply chain, we acknowledge our corporate social responsibility to strive to procure conflict-free minerals in an effort to recognize humanitarian and ethical social principles that protect the dignity of all persons. Meanwhile, we have implemented a series of compliance safeguards in accordance with industry leading practices, requesting suppliers to fill in the “Conflict Minerals Reporting Template” and sign the “TSMC Conflict-Free Minerals Declaration” every year. TSMC will continuously make progress to ensure a conflict-free supply chain.
- Personal Data Protection: Because of the importance of personal data protection, TSMC periodically reviews the Rules of Privacy and Personal Data Protection and external and internal privacy policies to identify the needs to update such documents. Based on current personal data protection laws and risks, TSMC conducts an annual training on privacy and personal data protection to enhance employees’ awareness and compliance. In addition, the Personal Data Protection Committee composed of Legal, Human Resources, and IT divisions convene on an annual basis to assist the implementation of and monitoring compliance with the rules.
- Antitrust Compliance: Based on annual antitrust risk assessment results, TSMC identified functions with potential higher risk from an antitrust perspective. To enhance targeted functions’ employee awareness of the importance of competition and antitrust laws and issues during daily operations, TSMC established antitrust training programs and conducted several antitrust trainings, via either face-to-face or on-line training sessions, for global sales personnel at Taiwan, North America, Europe, Asia Pacific, Japan and mainland China areas, and employees in other relevant departments.
- Insider Trading Compliance: To implement insider trading regulatory compliance and to strengthen employees’ awareness and compliance with, in 2023, TSMC designated managers at Human Resources, Finance, Business Development and other Organizations as trainees – a total of 888 managers completed this insider trading on-line program (0.5 hour-length course), both completion rate and exam pass rate reaching 100%.

3.7 Internal Control System Execution Status

3.7.1 Statement of Internal Control System

Taiwan Semiconductor Manufacturing Company Limited

Statement of Internal Control System

February 6, 2024

Based on the findings of a self-assessment, Taiwan Semiconductor Manufacturing Company Limited (TSMC) states the following with regard to its internal control system during the year 2023:

1. TSMC’s Board of Directors and management are responsible for establishing, implementing, and maintaining an adequate internal control system. Internal control system is designed to provide reasonable assurance over the effectiveness and efficiency of our operations (including profitability, performance and safeguarding of assets), reliability, timeliness, transparency and regulatory compliance of our reporting, and compliance with applicable rulings, laws and regulations.
2. An internal control system has inherent limitations. No matter how perfectly designed, an effective internal control system can provide only reasonable assurance of accomplishing its stated objectives. Moreover, the effectiveness of an internal control system may be subject to changes due to extenuating circumstances beyond our control. Nevertheless, our internal control system contains self-monitoring mechanisms, and TSMC takes immediate remedial actions in response to any identified deficiencies.
3. TSMC evaluates the design and operating effectiveness of its internal control system based on the criteria provided in the Regulations Governing the Establishment of Internal Control Systems by Public Companies (herein below, the “Regulations”). The criteria adopted by the Regulations identify five key components of managerial internal control: (1) control environment, (2) risk assessment, (3) control activities, (4) information and communication, and (5) monitoring activities. Each component also includes several items which can be found in the Regulations.
4. TSMC has evaluated the design and operating effectiveness of its internal control system according to the aforesaid Regulations.
5. Based on the findings of such evaluation, TSMC believes that, on December 31, 2023, it has maintained, in all material respects, an effective internal control system (that includes the supervision and management of our subsidiaries), to provide reasonable assurance over our operational effectiveness and efficiency, reliability, timeliness, transparency and regulatory compliance of reporting, and compliance with applicable rulings, laws and regulations.
6. This Statement is an integral part of TSMC’s annual report and prospectus, and will be made public. Any falsehood, concealment, or other illegality in the content made public will entail legal liability under Articles 20, 32, 171, and 174 of the Securities and Exchange Law.
7. This Statement was passed by the Board of Directors in their meeting held on February 6, 2024, with none of the ten attending directors expressing dissenting opinions, and the remainder all affirming the content of this Statement.

Taiwan Semiconductor Manufacturing Company Limited

Mark Liu,
Chairman

C.C. Wei,
Chief Executive Officer

3.7.2 If CPA Was Engaged to Conduct a Special Audit of Internal Control System, Provide Its Audit Report: None.

3.8 Status of Personnel Responsible for the Company's Financial and Business Operation

3.8.1 Resignation or Dismissal of Chairman, President, and Heads of Accounting, Finance, Internal Audit, Corporate Governance Officer and R&D in 2023 and as of the Date of this Annual Report: None.

3.8.2 Certification of Employees Whose Jobs Are Related to the Release of the Company's Financial Information

Certification	Number of Employees	
	Internal Audit	Finance
Certified Public Accountants (CPA)	1	59
US Certified Public Accountants (US CPA)	3	25
Certified Internal Auditor (CIA)	4	3
Chartered Financial Analyst (CFA)	-	2
Certified Management Accountant (CMA)	-	1
Financial Risk Manager (FRM)	-	2
Certified Information Systems Auditor (CISA)	7	1
Certified Fraud Examiner (CFE)	3	-

3.9 Information Regarding TSMC's Independent Auditor

3.9.1 Audit Fees

The Audit and Risk Committee approves all fees payable to TSMC's independent auditor and recommends the same to the Board of Directors for further approval. The Board of Directors has authorized the Audit and Risk Committee to approve any increase not exceeding 10% of the approved fees.

Unit: NT$ thousands

Accounting Firm	Name of CPA	CPA's Audit Period	Audit Fee	Non-audit Fee (Note)	Total	Remark
Deloitte & Touche	Shih-Tsung Wu and Shang-Chih Lin	01/01/2023 – 12/31/2023	79,710	7,526	87,236	-

Note: The fees were mainly related to audit of annual income tax returns.

3.9.2 CPA's information

(1) Former CPAs

Date of Change	Approved by BOD on November 8, 2022		
Reasons and Explanation of Changes	In compliance with regulatory requirements on rotation, the engagement partner Mei-Yen Chiang will be replaced by Shih-Tsung Wu starting from 2023. The co-signing partner will remain to be Shang-Chih Lin.		
State Whether the Appointment Is Terminated or Rejected by the Consignor or CPAs	Client / Status	CPA	Consignor
	Appointment terminated automatically	Not available	Not available
	Appointment rejected (discontinued)	Not available	Not available
The Opinions Other than Unmodified Opinion Issued in the Last Two Years and the Reasons for the Said Opinions (Note)	None		
Is There Any Disagreement in Opinion with the Issuer	Yes		Accounting principle or practice
			Disclosure of financial statements
			Auditing scope or procedures
			Others
	No	V	
	Explanation		
Supplementary Disclosure (Disclosures Specified in Article 10.6.1.4~7 of the Standards)	None		

(2) Successor CPAs

Accounting Firm	Deloitte & Touche
CPA	Shih-Tsung Wu and Shang-Chih Lin
Date of Engagement	Approved by BOD on November 8, 2022
Prior to the Formal Engagement, Any Inquiry or Consultation on the Accounting Treatment or Accounting Principles for Specific Transactions, and the Type of Audit Opinion that Might Be Rendered on the Financial Report	None
Written Opinions from the Successor CPAs that Are Different from the Former CPA's Opinions	None

(3) The Reply of Former CPAs on Article 10.6.1 and Article 10.6.2.3 of the Standards: None.

3.9.3 TSMC's Chairman, Directors, Chief Executive Officer, Chief Financial Officer, and Managers in Charge of Its Finance and Accounting Operations Did Not Hold Any Positions within TSMC's Independent Audit Firm or Its Affiliates in the Most Recent Year.

3.9.4 Evaluation of the External Auditor's Independence and Suitability

The Audit and Risk Committee annually monitors the independence and suitability of TSMC's external auditor by conducting the following evaluation standards and reports the same to the Board of Directors:

1. The auditor's independence declaration
2. The Audit and Risk Committee pre-approves all audit and non-audit services conducted by the auditor to ensure that the non-audit services do not influence the results of the audit
3. Ensure the audit partner rotates every five years
4. Annually evaluate the independence and suitability of the external auditor based on the results of the auditor survey and the Audit Quality Indicator (AQI) released by Financial Supervisory Commission (FSC) regarding its financial interests, commercial relations, employment relations, etc.

4 Capital & Shares

In 2023, TSMC continued to increase our investment in R&D to US$5.85 billion to extend our technology leadership and differentiation.

4.1 Capital and Shares

4.1.1 Capitalization

Unit: Shares/NT$

As of 02/29/2024

Month/ Year	Face Value Per Share	Authorized Share Capital		Capital Stock		Remark		
		Shares	Amount	Shares	Amount	Sources of Capital	Capital Increase by Assets Other than Cash	Date of Approval (Month/Day/Year) & Approval Document No.
03/2023	10	28,050,000,000	280,500,000,000	25,932,490,458	259,324,904,580	Employee Restricted Stock Awards Issuance: NT$21,100,000	None	03/08/2023 Chu Shang Tzu No. 1120006788
05/2023	10	28,050,000,000	280,500,000,000	25,932,070,992	259,320,709,920	Employee Restricted Stock Awards Cancellation: NT$4,194,660	None	05/22/2023 Chu Shang Tzu No. 1120016219

Note 1: The Board of Directors approved the issuance of 2,960,000 common shares in the form of Employee Restricted Stock Awards for year 2023 and set 03/01/2024 as the record date (approved by 03/11/2024 Chu Shang Tzu No.1130007178).

Note 2: On 03/01/2024, based on the vesting conditions, 346,750 common shares and 1,055,000 common shares in the form of Employee Restricted Stock Awards for year 2021 and year 2022, respectively, were reclaimed and will be cancelled subsequently.

4.1.2 Capital and Shares

Unit: Shares

As of 02/29/2024

Type of Stock	Authorized Share Capital		Total
	Listed Shares	Unissued Shares	
Common Stock	25,932,070,992	2,117,929,008	28,050,000,000

Shelf Registration in Taiwan: None.

4.1.3 Composition of Shareholders

Common Shares

As of 12/20/2023 (Note)

Type of Shareholders	Government Agencies	Financial Institutions	Other Juridical Persons	Foreign Institutions and Natural Persons	Domestic Natural Persons	Total
Number of Shareholders	7	224	3,350	7,415	1,215,659	1,226,655
Shareholding	1,666,434,790	749,922,830	1,623,500,826	18,815,519,480	3,076,693,066	25,932,070,992
Shareholding Percentage	6.43%	2.89%	6.26%	72.56%	11.86%	100.00%

Note: Record date for the second quarter of 2023 cash dividend distribution.

Distribution of Shareholding

Common Shares

As of 12/20/2023 (Note)

Shareholding Range	Number of Shareholders	Shareholding	Shareholding Percentage
1-999	748,733	139,708,793	0.54%
1,000-5,000	386,149	741,938,270	2.86%
5,001-10,000	46,384	336,955,260	1.30%
10,001-15,000	15,449	190,847,639	0.74%
15,001-20,000	7,445	132,151,529	0.51%
20,001-30,000	7,247	178,013,407	0.69%
30,001-40,000	3,379	117,484,194	0.45%
40,001-50,000	2,060	93,097,766	0.36%
50,001-100,000	3,951	276,506,615	1.07%
100,001-200,000	1,985	277,800,018	1.07%
200,001-400,000	1,288	361,839,385	1.39%
400,001-600,000	511	248,865,308	0.96%
600,001-800,000	295	205,241,529	0.79%
800,001-1,000,000	223	199,605,415	0.77%
Over 1,000,001	1,556	22,432,015,864	86.50%
Total	1,226,655	25,932,070,992	100.00%

Note: Record date for the second quarter of 2023 cash dividend distribution.

Preferred Shares: None.

4.1.4 Major Shareholders

Common Shares

As of 12/20/2023 (Note)

Shareholders	Shareholding	Shareholding Percentage
ADR-Taiwan Semiconductor Manufacturing Company Ltd.	5,315,513,063	20.50%
National Development Fund, Executive Yuan	1,653,709,980	6.38%
Citibank (Taiwan) Ltd. in custody for Government of Singapore	816,695,089	3.15%
Citibank (Taiwan) Ltd. in custody for Norges Bank	441,068,838	1.70%
New Labor Pension Fund	340,875,755	1.31%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	326,716,748	1.26%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds	288,871,605	1.11%
Yuanta/P-shares Taiwan Top 50 ETF	244,819,664	0.94%
iShares Core MSCI Emerging Markets ETF	222,677,000	0.86%
Fubon Life Insurance Co., Ltd.	169,320,221	0.65%

Note: Record date for the second quarter of 2023 cash dividend distribution.

4.1.5 Net Change in Shareholding by Directors, Management and Shareholders with 10% Shareholdings or More

Common Shares

Unit: Shares

Title Name	2023		01/01/2024 - 02/29/2024	
	Net Change in Shares Held	Net Change in Shares Pledged	Net Change in Shares Held	Net Change in Shares Pledged
Chairman Mark Liu	51,152	-	978	-
Chief Executive Officer & Vice Chairman C.C. Wei	46,627	-	-	-
Director F.C. Tseng	-	-	-	-
Director National Development Fund, Executive Yuan	-	-	-	-
Representative: Ming-Hsin Kung	-	-	-	-
Independent Director Sir Peter L. Bonfield	-	-	-	-
Independent Director Kok-Choo Chen	-	-	-	-
Independent Director Michael R. Splinter	-	-	-	-
Independent Director Moshe N. Gavrielov	-	-	-	-
Independent Director Yancey Hai	-	-	-	-
Independent Director L. Rafael Reif	-	-	-	-
Senior Vice President Lora Ho	15,411	-	-	-
Senior Vice President Wei-Jen Lo	16,201	-	-	-
Senior Vice President Rick Cassidy	-	-	-	-
Senior Vice President Y.P. Chyn (Note 1)	12,842	-	-	-
Senior Vice President Y.J. Mii (Note 1)	15,854	-	-	-
Senior Vice President and Chief Information Security Officer J.K. Lin	12,250	-	-	-
Senior Vice President Cliff Hou (Note 2)	30,658	-	2,204	-
Senior Vice President Kevin Zhang (Note 2)	10,867	-	-	-
Senior Vice President and General Counsel/Corporate Governance Officer Sylvia Fang	7,508	-	-	-
Senior Vice President and Chief Financial Officer/Spokesperson Wendell Huang	8,246	-	16	-
Vice President Y.L. Wang	7,508	-	-	-
Vice President and TSMC Distinguished Fellow Douglas Yu	8,496	-	-	-
Vice President and TSMC Fellow T.S. Chang	7,508	-	-	-
Vice President Michael Wu	7,903	-	-	-
Vice President Min Cao	7,903	-	-	-
Vice President Y.H. Liaw	5,532	-	-	-
Vice President Simon Jang	5,137	-	-	-
Vice President C.S. Yoo	5,927	-	-	-
Vice President Jun He	5,310	-	-	-
Vice President Geoffrey Yeap	6,532	-	8,000	-
Vice President and Chief Information Officer Chris Horng-Dar Lin	25,137	-	-	-
Vice President Jonathan Lee	30,179	-	2,343	-
Vice President Arthur Chuang	5,137	-	-	-
Vice President and TSMC Fellow L.C. Lu	5,730	-	-	-
Vice President K.C. Hsu	40,927	-	-	-
Vice President Ray Chuang (Note 3)	8,186	-	-	-

(Continued)

Note 1: Mr. Y.P. Chyn and Dr. Y.J. Mii were appointed as Executive Vice Presidents and Co-Chief Operating Officers, effective March 1, 2024.
Note 2: Dr. Cliff Hou and Dr. Kevin Zhang were appointed as Senior Vice President and Deputy Co-Chief Operating Officers, effective March 1, 2024.
Note 3: Mr. Ray Chuang was promoted to Vice President, effective May 9, 2023. His shareholding was disclosed starting from that date.

4.1.6 Stock Trade with Related Party: None.

4.1.7 Stock Pledge with Related Party: None.

4.1.8 Related Party Relationship among TSMC's 10 Largest Shareholders

Common Shares

As of 12/20/2023 (Note)

Name	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Name and Relationship between TSMC's Shareholders	
	Shares	%	Shares	%	Shares	%	Name	Relationship
ADR-Taiwan Semiconductor Manufacturing Company Ltd.	5,315,513,063	20.50%	N/A	N/A	N/A	N/A	None	None
National Development Fund, Executive Yuan	1,653,709,980	6.38%	N/A	N/A	N/A	N/A	None	None
Representative: Ming-Hsin Kung	779	0.00%	-	-	-	-	None	None
Citibank (Taiwan) Ltd. in custody for Government of Singapore	816,695,089	3.15%	N/A	N/A	N/A	N/A	None	None
Citibank (Taiwan) Ltd. in custody for Norges Bank	441,068,838	1.70%	N/A	N/A	N/A	N/A	None	None
New Labor Pension Fund	340,875,755	1.31%	N/A	N/A	N/A	N/A	None	None
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	326,716,748	1.26%	N/A	N/A	N/A	N/A	None	None
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds	288,871,605	1.11%	N/A	N/A	N/A	N/A	None	None
Yuanta/P-shares Taiwan Top 50 ETF	244,819,664	0.94%	N/A	N/A	N/A	N/A	None	None
iShares Core MSCI Emerging Markets ETF	222,677,000	0.86%	N/A	N/A	N/A	N/A	None	None
Fubon Life Insurance Co., Ltd.	169,320,221	0.65%	N/A	N/A	N/A	N/A	None	None
Chairman: Howard Lin	Not Available							

Note: Record date for the second quarter of 2023 cash dividend distribution.

4.1.9 Long-term Investment Ownership

As of 12/31/2023

Long-term Investment	Ownership by TSMC (1)		Ownership by Directors, Managers and Directly/Indirectly Owned Subsidiaries (2)		Total Ownership (1) + (2)	
	Shares	%	Shares	%	Shares	%
Equity Method:						
TSMC Partners, Ltd.	988,268,244	100%	-	-	988,268,244	100%
TSMC Global Ltd.	11,384	100%	-	-	11,384	100%
TSMC North America	11,000,000	100%	-	-	11,000,000	100%
TSMC Europe B.V.	200	100%	-	-	200	100%
TSMC Japan Limited	6,000	100%	-	-	6,000	100%
TSMC Korea Limited	80,000	100%	-	-	80,000	100%
TSMC Design Technology Japan, Inc.	15,000	100%	-	-	15,000	100%
TSMC Japan 3DIC R&D Center, Inc.	49,000	100%	-	-	49,000	100%
TSMC China Company Limited	Not Applicable (Note 1)	100%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	100%
TSMC Nanjing Company Limited	Not Applicable (Note 1)	100%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	100%
TSMC Arizona Corporation	10,500,000 (Note 2)	100%	-	-	10,500,000 (Note 2)	100%
Japan Advanced Semiconductor Manufacturing, Inc.	2,269,291 (Note 3)	71.39% (Note 3)	-	-	2,269,291 (Note 3)	71.39% (Note 3)
European Semiconductor Manufacturing Company (ESMC) GmbH	100,000 (Note 4)	100% (Note 4)	-	-	100,000 (Note 4)	100% (Note 4)
VisEra Technologies Company Ltd.	213,619,000	67.48% (Note 5)	-	-	213,619,000	67.48% (Note 5)
Systems on Silicon Manufacturing Co. Pte. Ltd.	313,603	38.79%	-	-	313,603	38.79%
Vanguard International Semiconductor Corp.	464,223,493	28.32%	275,572,145	16.81% (Note 6)	739,795,638	45.14%
Xintec Inc.	111,281,925	41.01%	-	-	111,281,925	41.01%
Global UniChip Corporation	46,687,859	34.84%	-	-	46,687,859	34.84%
VentureTech Alliance Fund II, L.P.	Not Applicable (Note 1)	98.00%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	98.00%
VentureTech Alliance Fund III, L.P.	Not Applicable (Note 1)	98.00%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	98.00%
Emerging Fund L.P.	Not Applicable (Note 1)	99.90%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	99.90%

Note 1: Not applicable. These firms do not issue shares. TSMC's investments are measured as a percentage of ownership.
Note 2: TSMC Arizona Corporation completed capital injections in January 2024 and March 2024. After the capital injection, TSMC holds 11,500,000 shares and 100% of the equity interests in TSMC Arizona Corporation.
Note 3: Japan Advanced Semiconductor Manufacturing, Inc. ("JASM") completed a capital injection in January 2024. After the capital injection, TSMC holds 2,790,533 shares and 71.37% of the equity interests in JASM.
Note 4: In January 2024, TSMC sold 30% equity interest of European Semiconductor Manufacturing Company (ESMC) GmbH to Robert Bosch GmbH, Infineon Technologies AG, and NXP Semiconductors Germany GmbH (a wholly-owned subsidiary of NXP Semiconductors N.V.). In February 2024, ESMC completed a capital injection. After these transactions, TSMC holds 700,000 shares and 70% of the equity interests in ESMC.
Note 5: As of February 2024, TSMC's ownership of VisEra is 67.44% due to VisEra's continuous execution of the Employee Stock Purchase Plan.
Note 6: TSMC's director, National Development Fund of Executive Yuan, held 16.72%, while TSMC's other directors and management held 0.09%.

4.1.10 Share Information

TSMC's earnings per share in 2023 decreased 17.5% from 2022 to NT$32.34 per share. The following table details TSMC's market price, net worth, earnings, and dividends per common share, as well as other data regarding return on investment.

Market Price, Net Worth, Earnings, and Dividends Per Common Share

Unit: NT$, except for weighted average shares and return on investment ratios

Item	2022	2023	01/01/2024 - 02/29/2024
Market Price Per Share (Note 1)			
Highest Market Price	683.00	593.00	698.00
Lowest Market Price	371.00	449.50	576.00
Average Market Price	516.24	543.45	631.60
Net Worth Per Share			
Before Distribution	113.60	133.38	-
After Distribution	110.85	129.88 (Note 5)	-
Earnings Per Share			
Weighted Average Shares (thousand shares)	25,929,383	25,929,267	-
Diluted Earnings Per Share	39.20	32.34	-
Dividends Per Share			
Cash Dividends	11.00	13.00 (Note 5)	-
Accumulated Undistributed Dividend	-	-	-
Return on Investment			
Price/Earnings Ratio (Note 2)	13.17	16.80	-
Price/Dividend Ratio (Note 3)	46.93	41.80 (Note 5)	-
Cash Dividend Yield (Note 4)	2.1%	2.4% (Note 5)	-

Note 1: Referred to TWSE website
Note 2: Price/Earnings Ratio = Average Market Price/Diluted Earnings Per Share
Note 3: Price/Dividend Ratio = Average Market Price/Cash Dividends Per Share
Note 4: Cash Dividend Yield = Cash Dividends Per Share/Average Market Price
Note 5: Including the dividends amount for fourth quarter of 2023, which were approved by Board of Directors on February 6, 2024.

4.1.11 Dividend Policy and Distribution of Earnings

Except as otherwise specified in the Articles of Incorporation or under the R.O.C. law, TSMC will not pay dividends or make other distributions to shareholders when there are no earnings. The Company's profits may be distributed by way of cash dividend, stock dividend, or a combination of cash and stock. Pursuant to the Company's Articles of Incorporation, distributions of profits shall be made preferably by way of cash dividend. In addition, the ratio for stock dividends shall not exceed 50% of the total distribution. Distribution of stock dividends is subject to approval by the R.O.C. Financial Supervisory Commission.

Pursuant to TSMC's Articles of Incorporation, the Company's Board of Directors is authorized to approve quarterly cash dividends after the close of each quarter. After the Company's Board of Directors approves quarterly cash dividends, TSMC will distribute the dividend within six months. The respective amounts and payment dates of 2023 quarterly cash dividends are demonstrated in the table below. TSMC intends to maintain a sustainable and steadily increasing cash dividend on both an annual and quarterly basis.

2023 Quarterly Earnings Distribution

Unit: NT$

Period	Approved Date	Payment Date	Cash Dividend Per Share	Total Earnings Distribution Amount
First quarter of 2023	05/09/2023	10/12/2023	NT$3.00	77,796,212,976
Second quarter of 2023	08/08/2023	01/11/2024	NT$3.00	77,796,212,976
Third quarter of 2023	11/14/2023	04/11/2024	NT$3.49978969 (Note 1)	90,762,248,472
Fourth quarter of 2023	02/06/2024	07/11/2024	NT$3.50 (Note 2)	90,762,248,472

Note 1: The cash dividend per share was adjusted, as authorized by the Board, based on the actual number of common shares outstanding as of the record date for such dividend payment.
Note 2: The actual cash dividend per share shall be subject to adjustment based on the actual number of common shares outstanding as of the record date for such dividend payment.

4.1.12 Compensation to Directors and Profit Sharing to Employees

Based on TSMC's Articles of Incorporation, before paying dividends or bonuses to shareholders, TSMC shall set aside not more than 0.3% of its annual profit to directors as compensation and not less than 1% to employees as a profit sharing.

As resolved by TSMC's Board of Directors on February 6, 2024, a profit sharing to employees was expensed based on a certain percentage of 2023 profit; compensation to directors was expensed based on the estimated amount of payment. If the actual amounts subsequently paid differ from the above estimated amounts, the differences will be recorded in the year paid as a change in accounting estimate.

2023 Directors' Compensation and Employees' Profit Sharing

	Board Resolution (02/06/2024)
	Amount (NT$ thousands)
Directors' Compensation (Cash)	551,955
Employee's Profit Sharing (Cash)	50,090,533

Note: NT$50,090,533 thousand business performance bonus was already distributed following each quarter of 2023. The above employees' profit sharing will be distributed in July, 2024.

2022 Directors' Compensation and Employees' Profit Sharing

	Board Resolution (02/14/2023)	Actual Result (Note)
	Amount (NT$ thousands)	Amount (NT$ thousands)
Directors' Compensation (Cash)	690,128	690,128
Employees' Profit Sharing (Cash)	60,702,047	60,295,060

Note: The above directors' compensation and employees' profit sharing were expensed under the Company's 2022 statement of comprehensive income and were approved by the Board of Directors at its meeting on February 14, 2023. However, due to employee turnover, the employees' profit sharing in the amount of NT$406,987 thousand was undistributed, and related expense was reversed in 2023.

4.1.13 Impact to 2024 Business Performance and EPS of Stock Dividend Distribution: Not applicable.

4.1.14 Buyback of Common Stock: None.

4.2 Issuance of Corporate Bonds

4.2.1 Corporate Bonds

NTD Corporate Bonds

As of 02/29/2024

Issuance	Domestic Unsecured Bond (109-1)	Domestic Unsecured Bond (109-2)	Domestic Unsecured Bond (109-3)	Domestic Unsecured Bond (109-4)	Domestic Unsecured Bond (109-5)	Domestic Unsecured Bond (109-6, Green Bond)	Domestic Unsecured Bond (109-7)	Domestic Unsecured Bond (110-1)	Domestic Unsecured Bond (110-2)	Domestic Unsecured Bond (110-3)	Domestic Unsecured Bond (110-4)	Domestic Unsecured Bond (110-6)
Issue Date	03/23/2020	04/15/2020	05/29/2020	07/14/2020	09/03/2020	12/02/2020	12/29/2020	03/30/2021	05/03/2021	06/25/2021	08/19/2021	10/05/2021
Denomination	NT$10,000,000											
Offering Price	Par											
Total Amount	NT$24,000,000,000	NT$21,600,000,000	NT$14,400,000,000	NT$13,900,000,000	NT$15,600,000,000	NT$12,000,000,000	NT$18,500,000,000	NT$21,100,000,000	NT$19,200,000,000	NT$19,700,000,000	NT$21,600,000,000	NT$16,300,000,000
Coupon (Per Annum)	Tranche A: 0.58% Tranche B: 0.62% Tranche C: 0.64%	Tranche A: 0.52% Tranche B: 0.58% Tranche C: 0.60%	Tranche A: 0.55% Tranche B: 0.60% Tranche C: 0.64%	Tranche A: 0.58% Tranche B: 0.65% Tranche C: 0.67%	Tranche A: 0.50% Tranche B: 0.58% Tranche C: 0.60%	Tranche A: 0.40% Tranche B: 0.44% Tranche C: 0.48%	Tranche A: 0.36% Tranche B: 0.41% Tranche C: 0.45%	Tranche A: 0.50% Tranche B: 0.55% Tranche C: 0.60%	Tranche A: 0.50% Tranche B: 0.58% Tranche C: 0.65%	Tranche A: 0.52% Tranche B: 0.58% Tranche C: 0.65%	Tranche A: 0.485% Tranche B: 0.50% Tranche C: 0.55% Tranche D: 0.62%	Tranche A: 0.535% Tranche B: 0.54% Tranche C: 0.60% Tranche D: 0.62%
Tenure and Maturity Date	Tranche A: 5 years Maturity: 03/23/2025 Tranche B: 7 years Maturity: 03/23/2027 Tranche C: 10 years Maturity: 03/23/2030	Tranche A: 5 years Maturity: 04/15/2025 Tranche B: 7 years Maturity: 04/15/2027 Tranche C: 10 years Maturity: 04/15/2030	Tranche A: 5 years Maturity: 05/29/2025 Tranche B: 7 years Maturity: 05/29/2027 Tranche C: 10 years Maturity: 05/29/2030	Tranche A: 5 years Maturity: 07/14/2025 Tranche B: 7 years Maturity: 07/14/2027 Tranche C: 10 years Maturity: 07/14/2030	Tranche A: 5 years Maturity: 09/03/2025 Tranche B: 7 years Maturity: 09/03/2027 Tranche C: 10 years Maturity: 09/03/2030	Tranche A: 5 years Maturity: 12/02/2025 Tranche B: 7 years Maturity: 12/02/2027 Tranche C: 10 years Maturity: 12/02/2030	Tranche A: 5 years Maturity: 12/29/2025 Tranche B: 7 years Maturity: 12/29/2027 Tranche C: 10 years Maturity: 12/29/2030	Tranche A: 5 years Maturity: 03/30/2026 Tranche B: 7 years Maturity: 03/30/2028 Tranche C: 10 years Maturity: 03/30/2031	Tranche A: 5 years Maturity: 05/03/2026 Tranche B: 7 years Maturity: 05/03/2028 Tranche C: 10 years Maturity: 05/03/2031	Tranche A: 5 years Maturity: 06/25/2026 Tranche B: 7 years Maturity: 06/25/2028 Tranche C: 10 years Maturity: 06/25/2031	Tranche A: 4 years Maturity: 08/19/2025 Tranche B: 5 years Maturity: 08/19/2026 Tranche C: 7 years Maturity: 08/19/2028 Tranche D: 10 years Maturity: 08/19/2031	Tranche A: 4.5 years Maturity: 04/05/2026 Tranche B: 5 years Maturity: 10/05/2026 Tranche C: 7 years Maturity: 10/05/2028 Tranche D: 10 years Maturity: 10/05/2031
Repayment	Bullet			Two equal installments in last two years				Bullet				
Outstanding	NT$24,000,000,000	NT$21,600,000,000	NT$14,400,000,000	NT$13,900,000,000	NT$15,600,000,000	NT$12,000,000,000	NT$18,500,000,000	NT$21,100,000,000	NT$19,200,000,000	NT$19,700,000,000	NT$21,600,000,000	NT$16,300,000,000
Credit Rating	Not Applicable											
Underwriter (Lead Underwriter)	Yuanta Securities Co., Ltd.	MasterLink Securities Co., Ltd.	Hua Nan Securities Co., Ltd.	Capital Securities Co., Ltd.	KGI Securities Co., Ltd.	Capital Securities Co., Ltd.	KGI Securities Co., Ltd.	Capital Securities Co., Ltd.	SinoPac Securities Co., Ltd.	Yuanta Securities Co., Ltd.	KGI Securities Co., Ltd.	Capital Securities Co., Ltd.
Trustee	Taipei Fubon Commercial Bank Co., Ltd.											
Guarantor	None											
Legal Counsel	True Honesty International Law Offices											
Auditor	Deloitte & Touche											
Redemption or Early Repayment Clause	None											
Covenants	None											
Other Rights of Bondholders – Conversion Right	None											
Other Rights of Bondholders – Amount of Converted or Exchanged Common Shares, ADRs or Other Securities	Not Applicable											
Dilution Effect and Other Adverse Effects on Existing Shareholders	None											
Custodian	None											

(Continued)

Issuance	Domestic Unsecured Bond (110-7)	Domestic Unsecured Bond (111-1, Green Bond)	Domestic Unsecured Bond (111-2)	Domestic Unsecured Bond (111-3, Green Bond)	Domestic Unsecured Bond (111-4, Green Bond)	Domestic Unsecured Bond (111-5)	Domestic Unsecured Bond (111-6, Green Bond)	Domestic Unsecured Bond (112-1, Green Bond)	Domestic Unsecured Bond (112-2, Green Bond)	Domestic Unsecured Bond (112-3)	Domestic Unsecured Bond (112-4)	Domestic Unsecured Bond (112-5)
Issue Date	12/09/2021	01/12/2022	03/29/2022	05/20/2022	07/27/2022	08/25/2022	10/20/2022	03/28/2023	05/03/2023	06/01/2023	08/16/2023	10/16/2023
Denomination	NT$10,000,000											
Offering Price	Par											
Total Amount	NT$16,700,000,000	NT$5,400,000,000	NT$14,200,000,000	NT$6,100,000,000	NT$13,900,000,000	NT$15,600,000,000	NT$10,200,000,000	NT$19,300,000,000	NT$20,700,000,000	NT$20,000,000,000	NT$15,900,000,000	NT$9,800,000,000
Coupon (Per Annum)	Tranche A: 0.65% Tranche B: 0.675% Tranche C: 0.72%	Tranche A: 0.63% Tranche B: 0.72%	Tranche A: 0.84% Tranche B: 0.85% Tranche C: 0.90%	1.50%	Tranche A: 1.60% Tranche B: 1.70% Tranche C: 1.75% Tranche D: 1.95%	Tranche A: 1.65% Tranche B: 1.65% Tranche C: 1.65% Tranche D: 1.82%	Tranche A: 1.75% Tranche B: 1.80% Tranche C: 2.00%	Tranche A: 1.54% Tranche B: 1.60% Tranche C: 1.78%	Tranche A: 1.60% Tranche B: 1.65% Tranche C: 1.82%	Tranche A: 1.60% Tranche B: 1.65% Tranche C: 1.80%	Tranche A: 1.60% Tranche B: 1.65% Tranche C: 1.76%	Tranche A: 1.62% Tranche B: 1.76%
Tenure and Maturity Date	Tranche A: 5 years Maturity: 12/09/2026 Tranche B: 5.5 years Maturity: 06/09/2027 Tranche C: 7 years Maturity: 12/09/2028	Tranche A: 5 years Maturity: 01/12/2027 Tranche B: 7 years Maturity: 01/12/2029	Tranche A: 4.5 years Maturity: 09/29/2026 Tranche B: 5 years Maturity: 03/29/2027 Tranche C: 7 years Maturity: 03/29/2029	5 years Maturity: 05/20/2027	Tranche A: 4 years Maturity: 07/27/2026 Tranche B: 5 years Maturity: 07/27/2027 Tranche C: 7 years Maturity: 07/27/2029 Tranche D: 10 years Maturity: 07/27/2032	Tranche A: 4 years 10 months Maturity: 06/25/2027 Tranche B: 5 years Maturity: 08/25/2027 Tranche C: 7 years Maturity: 08/25/2029 Tranche D: 10 years Maturity: 08/25/2032	Tranche A: 5 years Maturity: 10/20/2027 Tranche B: 7 years Maturity: 10/20/2029 Tranche C: 10 years Maturity: 10/20/2032	Tranche A: 5 years Maturity: 03/28/2028 Tranche B: 7 years Maturity: 03/28/2030 Tranche C: 10 years Maturity: 03/28/2033	Tranche A: 5 years Maturity: 05/03/2028 Tranche B: 7 years Maturity: 05/03/2030 Tranche C: 10 years Maturity: 05/03/2033	Tranche A: 5 years Maturity: 06/01/2028 Tranche B: 7 years Maturity: 06/01/2030 Tranche C: 10 years Maturity: 06/01/2033	Tranche A: 5 years Maturity: 08/16/2028 Tranche B: 7 years Maturity: 08/16/2030 Tranche C: 10 years Maturity: 08/16/2033	Tranche A: 5 years Maturity: 10/16/2028 Tranche B: 10 years Maturity: 10/16/2033
Repayment	Bullet											
Outstanding	NT$16,700,000,000	NT$5,400,000,000	NT$14,200,000,000	NT$6,100,000,000	NT$13,900,000,000	NT$15,600,000,000	NT$10,200,000,000	NT$19,300,000,000	NT$20,700,000,000	NT$20,000,000,000	NT$15,900,000,000	NT$9,800,000,000
Credit Rating	Not Applicable											
Underwriter (Lead Underwriter)	Capital Securities Co., Ltd.	Yuanta Securities Co., Ltd.	Capital Securities Co., Ltd.	Capital Securities Co., Ltd.	SinoPac Securities Co., Ltd.	Capital Securities Co., Ltd.	Yuanta Securities Co., Ltd.	Yuanta Securities Co., Ltd.	Fubon Securities Co., Ltd.	Cathay United Bank Co., Ltd.	SinoPac Securities Corporation	SinoPac Securities Corporation
Trustee	Taipei Fubon Commercial Bank Co., Ltd.											
Guarantor	None											
Legal Counsel	True Honesty International Law Offices											
Auditor	Deloitte & Touche											
Redemption or Early Repayment Clause	None											
Covenants	None											
Other Rights of Bondholders Conversion Right	None											
Other Rights of Bondholders Amount of Converted or Exchanged Common Shares, ADRs or Other Securities	Not Applicable											
Dilution Effect and Other Adverse Effects on Existing Shareholders	None											
Custodian	None											

Onshore USD Corporate Bonds

As of 02/29/2024

Issuance	US-dollar Domestic Unsecured Bond (109-1)	US-dollar Domestic Unsecured Bond (110-5)
Issue Date	09/22/2020	09/23/2021
Denomination	US$1,000,000	
Listing	Taipei Exchange	
Offering Price	Par	
Total Amount	US$1,000,000,000	US$1,000,000,000
Coupon (Per Annum)	2.70%	3.10%
Tenure and Maturity Date	40 years Maturity: 09/22/2060	30 years Maturity: 09/23/2051
Repayment	Bullet	
Outstanding	US$1,000,000,000	US$1,000,000,000
Credit Rating	Not Applicable	
Underwriter	Goldman Sachs (Asia) L.L.C., Taipei Branch KGI Securities Co., Ltd. (lead underwriter)	
Trustee	Mega International Commercial Bank Co., Ltd.	
Guarantor	None	
Legal Counsel	True Honesty International Law Offices	
Auditor	Deloitte & Touche	
Redemption or Early Repayment Clause	Callable on the 5th anniversary of the issue date and every anniversary thereafter	
Covenants	None	
Other Rights of Bondholders – **Conversion Right**	None	
Other Rights of Bondholders – **Amount of Converted or Exchanged Common Shares, ADRs or Other Securities**	Not Applicable	
Dilution Effect and Other Adverse Effects on Existing Shareholders	None	
Custodian	None	

Offshore USD Corporate Bonds

As of 02/29/2024

Issuance	Senior Unsecured Notes (Note 1)	Senior Unsecured Notes (Note 1)	Senior Unsecured Notes (Note 2)	Senior Unsecured Notes (Note 2)	Senior Unsecured Notes (Note 1)
Issue Date	09/28/2020	04/23/2021	10/25/2021	04/22/2022	07/22/2022
Denomination	US$200,000 and integral multiples of US$1,000 in excess thereof				
Listing	Singapore Exchange				
Offering Price	2025 Notes: 99.907% 2027 Notes: 99.603% 2030 Notes: 99.083%	2026 Notes: 99.759% 2028 Notes: 99.751% 2031 Notes: 99.831%	2026 Notes: 99.976% 2031 Notes: 99.561% 2041 Notes: 98.898% 2051 Notes: 98.658%	2027 Notes: 99.829% 2029 Notes: 99.843% 2032 Notes: 99.742% 2052 Notes: 99.771%	2027 Notes: 99.951% 2032 Notes: 99.124%
Total Amount	US$3,000,000,000	US$3,500,000,000	US$4,500,000,000	US$3,500,000,000	US$1,000,000,000
Coupon (Per Annum)	2025 Notes: 0.75% 2027 Notes: 1.00% 2030 Notes: 1.375%	2026 Notes: 1.25% 2028 Notes: 1.75% 2031 Notes: 2.25%	2026 Notes: 1.75% 2031 Notes: 2.50% 2041 Notes: 3.125% 2051 Notes: 3.25%	2027 Notes: 3.875% 2029 Notes: 4.125% 2032 Notes: 4.250% 2052 Notes: 4.500%	2027 Notes: 4.375% 2032 Notes: 4.625%
Tenure and Maturity Date	2025 Notes: 5 years Maturity: 09/28/2025 2027 Notes: 7 years Maturity: 09/28/2027 2030 Notes: 10 years Maturity: 09/28/2030	2026 Notes: 5 years Maturity: 04/23/2026 2028 Notes: 7 years Maturity: 04/23/2028 2031 Notes: 10 years Maturity: 04/23/2031	2026 Notes: 5 years Maturity: 10/25/2026 2031 Notes: 10 years Maturity: 10/25/2031 2041 Notes: 20 years Maturity: 10/25/2041 2051 Notes: 30 years Maturity: 10/25/2051	2027 Notes: 5 years Maturity: 04/22/2027 2029 Notes: 7 years Maturity: 04/22/2029 2032 Notes: 10 years Maturity: 04/22/2032 2052 Notes: 30 years Maturity: 04/22/2052	2027 Notes: 5 years Maturity: 07/22/2027 2032 Notes: 10 years Maturity: 07/22/2032
Repayment	Bullet				
Outstanding	US$3,000,000,000	US$3,500,000,000	US$4,500,000,000	US$3,500,000,000	US$1,000,000,000
Credit Rating	Aa3 (Moody's Investors Service, 09/21/2020) AA- (Standard & Poor's Rating Services, 09/21/2020)	Aa3 (Moody's Investors Service, 04/19/2021) AA- (Standard & Poor's Rating Services, 04/18/2021)	Aa3 (Moody's Investors Service, 10/19/2021) AA- (Standard & Poor's Rating Services, 10/18/2021)	Aa3 (Moody's Investors Service, 04/19/2022) AA- (Standard & Poor's Rating Services, 04/18/2022)	Aa3 (Moody's Investors Service, 07/19/2022) AA- (Standard & Poor's Rating Services, 07/18/2022)
Underwriter	Goldman Sachs International as lead underwriter		Goldman Sachs & Co. LLC as lead underwriter		Goldman Sachs International as lead underwriter
Trustee	Citicorp International Limited		Citibank, N.A.		Citicorp International Limited
Guarantor	TSMC				
Legal Counsel	Sullivan & Cromwell (Hong Kong) LLP Harney Westwood & Riegels Lee and Li, Attorneys-at-Law		Sullivan & Cromwell (Hong Kong) LLP Fennemore Craig, P.C. Lee and Li, Attorneys-at-Law		Sullivan & Cromwell (Hong Kong) LLP Harney Westwood & Riegels Lee and Li, Attorneys-at-Law
Auditor	Deloitte & Touche				
Redemption or Early Repayment Clause	Issuer may, at its option, redeem the Notes, at any time, in whole or in part at the relevant redemption price according to relevant agreements				
Covenants	None				
Other Rights of Bondholders – **Conversion Right**	None				
Other Rights of Bondholders – **Amount of Converted or Exchanged Common Shares, ADRs or Other Securities**	Not Applicable				
Dilution Effect and Other Adverse Effects on Existing Shareholders	None				
Custodian	None				

Note 1: Issued by TSMC Global Ltd., a wholly-owned subsidiary of TSMC, and unconditionally and irrevocably guaranteed by TSMC.
Note 2: Issued by TSMC Arizona Corporation, a wholly-owned subsidiary of TSMC, and unconditionally and irrevocably guaranteed by TSMC.

4.2.2 Convertible Bond: None.

4.2.3 Exchangeable Bond: None.

4.2.4 Shelf Registration in Taiwan: None.

4.2.5 Bond with Warrants: None.

4.3 Preferred Shares

4.3.1 Preferred Shares: None.

4.3.2 Preferred Shares with Warrants: None.

4.4 Issuance of American Depositary Shares

Issue Date	10/08/1997	11/20/1998	01/12/1999 - 01/14/1999	07/15/1999	08/23/1999 - 09/09/1999	02/22/2000 - 03/08/2000	04/17/2000	06/07/2000 - 06/15/2000	05/17/2001 - 06/11/2001	11/27/2001	02/07/2002 - 02/08/2002	11/21/2002 - 12/19/2002	07/14/2003 - 07/21/2003	11/14/2003	08/10/2005 - 09/08/2005	05/23/2007
Total Amount (US$ million)	595	185	36	296	159	379	225	1,168	539	321	1,002	160	909	1,077	1,402	2,563
Offering Price Per ADS (US$)	24.78	15.26	17.75	24.516	28.964	57.79	56.16	35.75	20.63	16.03	16.75	8.73	10.40	10.77	8.60	10.68
Units Issued	24,000,000	12,094,000	2,000,000	12,094,000	5,486,000	6,560,000	4,000,000	32,667,800	26,110,000	20,000,000	59,800,000	18,348,000	87,357,200	100,000,000	163,027,500	240,000,000
Common Shares Represented	Each unit of ADS represents five TSMC Common Shares.															
Underlying Securities	TSMC Common Shares from Selling Shareholders							Cash Offering and TSMC Common Shares from Selling Shareholders	TSMC Common Shares from Selling Shareholders							
Apportionment of Expenses for Issuance and Maintenance	(Note 3)							(Note 4)	(Note 3)							
Issuance and Listing	NYSE															
Rights and Obligations of ADS Holders	Same as those of Common Share Holders															
Trustee	Not Applicable															
Depositary Bank	Citibank, N.A. – New York															
Custodian Bank (Note 1)	Citibank, N.A. – Taipei Branch															
ADSs Outstanding (Note 2)	As of February 29, 2024, total number of outstanding ADSs was 1,062,931,607															
Terms and Conditions in the Deposit Agreement and Custody Agreement	See Deposit Agreement and Custody Agreement for Details															

Closing Price Per ADS (US$; source: Bloomberg)			
	01/01/2023 - 12/31/2023	High	107.41
		Low	74.03
		Average	93.20
	01/01/2024 - 02/29/2024	High	133.73
		Low	99.13
		Average	116.83

Note 1: Citibank, N.A., Taipei Branch changed its name to "Citibank Taiwan Limited" in 2009.
Note 2: TSMC has in aggregate issued 813,544,500 ADSs since 1997, which, if taking into consideration stock dividends distributed over the period, would amount to 1,147,835,205 ADSs. Stock dividends distributed in 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 and 2009 were 45%, 23%, 28%, 40%, 10%, 8%, 14.08668%, 4.99971%, 2.99903%, 0.49991%, 0.50417% and 0.49998%, respectively. As of February 29, 2024, total number of outstanding ADSs was 1,062,931,607 after 84,903,598 were redeemed.
Note 3: All fees and expenses related to issuance of ADSs were paid by the selling shareholders, while maintenance expenses were borne by TSMC.
Note 4: All fees and expenses related to issuance of ADSs were paid proportionately by TSMC and the selling shareholders, while maintenance expenses were borne by TSMC.

4.5 Status of Employee Stock Option Plan

4.5.1 Issuance of Employee Stock Options: None.

4.5.2 Employee Stock Options Granted to Management Team and to Top 10 Employees: None.

4.6 Status of Employee Restricted Stock

4.6.1 Status of Employee Restricted Stock

As of 02/29/2024 (Note)

<table>
<tr><td>Type of Employee Restricted Stock</td><td>Employee Restricted Stock Awards for Year 2021</td></tr>
<tr><td>Effective Registration Date and Total Number of Shares</td><td>08/06/2021 /2,600,000 shares</td></tr>
<tr><td>Issue Date</td><td>03/01/2022</td></tr>
<tr><td>Number of Restricted Employee Shares Issued</td><td>1,387,000 shares</td></tr>
<tr><td>Number of Restricted Employee Shares Still Available for Issuance</td><td>0 share</td></tr>
<tr><td>Issued Price</td><td>None</td></tr>
<tr><td>Ratio of the Number of Restricted Employee Shares Issued to the Total Number of Issued Shares</td><td>0.00535%</td></tr>
<tr><td>Vesting Conditions of Restricted Employee Shares</td><td>1. The RSAs granted to an executive can only be vested if (a) the executive remains employed by the Company on the last date of each vesting period; (b) during the vesting period, the executive may not breach any agreement with the Company or violate the Company's work rules; and (c) certain executive performance metrics (a year-end performance rating of at least "S" (Note) or above for the year immediately preceding the expiration of each vesting period) and the Company's business performance metrics are met. (Note: "S" stands for "Successful")
2. The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of the Company's business performance metrics, as detailed in the following point.
3. The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on the Company's relative TSR (Note) achievement (see table below) to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation Committee's evaluation of the Company's ESG achievements. The number of shares so calculated should be rounded down to the nearest integral.
<table>
<tr><th>The Company's TSR Relative to the TSR of S&P 500 IT Index</th><th>Ratio of Shares to be Vested</th></tr>
<tr><td>Above the Index by X percentage points</td><td>50% + X * 2.5%, with the maximum of 100%</td></tr>
<tr><td>Equal to the Index</td><td>50%</td></tr>
<tr><td>Below the Index by X percentage points</td><td>50% - X * 2.5%, with the minimum of 0%</td></tr>
</table>
Note: TSR: Total Shareholder Return (including capital gains and dividends)</td></tr>
<tr><td>Restriction on Rights in the Restricted Employee Shares</td><td>1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the executives cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means.
2. During each vesting period, no executives granted RSAs may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs.
3. Subject to the restrictions mentioned above, the rights of the executives with regard to the unvested RSAs granted under these Rules before the fulfillment of the vesting conditions, including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of the Company. The relevant matters shall be handled in accordance with the RSA trust/custody agreement.
4. Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and any other shareholder rights shall be exercised by the engaged trustee/custodian on the executives' behalf.
5. During each vesting period, if the Company conducts a capital reduction for cash return, capital reduction for loss offset, or other non-statutory capital reduction, the unvested RSAs shall be cancelled proportionally by the ratio of such capital reduction. If the Company conducts a capital reduction for cash return, the returned cash shall be deposited in a trust/custody account and shall not be delivered to the executives until the vesting conditions are fulfilled; otherwise, the cash will be returned to the Company.</td></tr>
</table>

(Continued)

Custody of the Restricted Employee Shares	1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the executives cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means. 2. During the period when the granted RSAs are deposited in a trust/custody account, each executive must enter into an agreement authorizing the Company to, among others, negotiate, execute, modify, extend, rescind, and terminate the trust/custody agreement with the trustee/custodian, and give instructions to deliver, use, and dispose of any of the properties under the trust/custody, on their behalf, with full power and authority.
Treatment of the Restricted Shares for Which the Grantee Fails to Meet the Vesting Conditions after Receiving or Subscribing to the Shares	1. The Company will reclaim the granted RSAs and cancel the same at no extra cost to the Company, where an executive fails to meet the vesting conditions. 2. Voluntary Separation, separation with a severance, or involuntary discharge: Any unvested RSAs will be forfeited on the effective date of separation due to a voluntary separation, separation with a severance, or involuntary discharge of such executives. The Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 3. Leave Without Pay: All the rights and obligations in connection with the unvested RSAs will not be affected as a result of executives taking extended leave without pay. However, the actual number of shares that may be vested will not only be calculated according to the vesting conditions but also be prorated based on the number of months of their service during the year prior to the applicable vesting day. If such executives are on leave without pay on any vesting day, it shall be deemed that they fail to meet the vesting conditions, and the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 4. Retirement: All the rights and obligations in connection with the unvested RSAs will not be affected as a result of an employee's retirement. However, the actual number of shares that may be vested shall be calculated according to the vesting condition, and the performance rating granted to them shall be deemed "S". 5. Employment Termination Due to Death or Physical Disability Caused by Occupational Accidents: The unvested RSAs shall be deemed immediately vested in the case of death or physical disability due to an occupational accident, where the RSAs vested shall be based on the assumption that the Company's TSR equals to the TSR of S&P 500 IT Index and there is no further adjustment for the Company's ESG achievements. In the case of death, the respective heir(s) may apply for entitlement to those inheritable shares after completing all necessary legal procedures and providing relevant supporting documents. In the case of physical disability caused by occupational injury, the vested RSAs will be received by such executives. 6. Position Transfer: Where any executives apply for transferring to any of the Company's subsidiaries, affiliates, or other companies, the measures to be taken with respect to their unvested RSAs will be the same as those specified in "Voluntary Separation". Where any executives are assigned by the Company to a position in any of the Company's subsidiaries, affiliates, or other companies, all the rights and obligations in connection with the unvested RSAs will not be affected as a result. However, subject to the vesting conditions, such executives shall continue working in the assigned subsidiaries, affiliates, or other companies on the vesting dates. Otherwise, they will be considered to fail to meet the vesting conditions, and the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. With respect to the evaluation of the achievement of individual performance goals, Chairman and Chief Executive Officer will determine whether the vesting conditions are met by reviewing the evaluation of the executives' performance provided by the assigned subsidiaries, affiliates, or other companies. 7. Where any executives declare to voluntarily relinquish the granted RSAs with a written statement, the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 8. Where any executives, after being granted the RSAs, breach any agreement with the Company employment agreement or violate the Company's work rules, the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 9. Where any executives terminate or revoke their authorization given to the Company regarding the executive's RSA trust/custody account, the Company will reclaim their unvested RSAs and cancel the same at no extra cost to the Company.
Number of Restricted Employee Shares That Have Been Retired or Bought Back	419,466 shares
Number of Restricted Employee Shares That Have Vested	274,034 shares
Number of Unvested Restricted Employee Shares	693,500 shares
The Ratio of Number of Unvested Restricted Employee Share to the Total Number of Issued Shares (%)	0.00267%
The Effect on Shareholders' Equity	The potential dilution of the Company's EPS is minimal; therefore, there is no material impact on shareholders' interest.

Note: The printed date of this Annual Report.

<table>
<tr><td>Type of Employee Restricted Stock</td><td>Employee Restricted Stock Awards for Year 2022</td></tr>
<tr><td>Effective Registration Date and Total Number of Shares</td><td>07/25/2022 /3,065,000 shares</td></tr>
<tr><td>Issue Date</td><td>03/01/2023</td></tr>
<tr><td>Number of Restricted Employee Shares Issued</td><td>2,110,000 shares</td></tr>
<tr><td>Number of Restricted Employee Shares Still Available for Issuance</td><td>0 share</td></tr>
<tr><td>Issued Price</td><td>None</td></tr>
<tr><td>Ratio of the Number of Restricted Employee Shares Issued to the Total Number of Issued Shares</td><td>0.00814%</td></tr>
<tr><td>Vesting Conditions of Restricted Employee Shares</td><td>1. The RSAs granted to an employee can only be vested if (a) the employee remains employed by the Company or the Company's subsidiaries on the last date of each vesting period; (b) during the vesting period, the employee may not breach any agreement with the Company or the Company's subsidiaries or violate the Company's or the Company's subsidiaries' work rules; and (c) certain employee performance metrics (a year-end performance rating of at least "S" (Note) or above for the year immediately preceding the expiration of each vesting period) and the Company's business performance metrics are met. (Note: "S" stands for "Successful")
2. The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of the Company's business performance metrics, as detailed in the following points.
3. For eligible executive officers of the Company: The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on the Company's relative TSR (Note) achievement (see table below) to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation Committee's evaluation of the Company's ESG achievements. The number of shares so calculated should be rounded down to the nearest integral.
<table>
<tr><th>The Company's TSR Relative to the TSR of S&P 500 IT Index</th><th>Ratio of Shares to Be Vested</th></tr>
<tr><td>Above the Index by X percentage points</td><td>50% + X * 2.5%, with the maximum of 100%</td></tr>
<tr><td>Equal to the Index</td><td>50%</td></tr>
<tr><td>Below the Index by X percentage points</td><td>50% - X * 2.5%, with the minimum of 0%</td></tr>
</table>
Note: TSR: Total Shareholder Return (including capital gains and dividends)
4. For eligible employees who are not executive officers of the Company and the Company's subsidiaries: The number of RSAs to be vested in each year will be calculated in accordance with the below table based on the Company's audited consolidated financial statements for the year prior to the vesting year. The number of shares so calculated should be rounded down to the nearest integral.
<table>
<tr><th></th><th>Threshold</th><th>Target</th><th>Weighting</th><th>Ratio of Shares to Be Vested</th></tr>
<tr><td>Revenue Growth</td><td>10%</td><td>15%</td><td>One-third</td><td rowspan="3">• < Threshold: 0%
• = Threshold: 50%
• ≧Target: 100%
• Between Threshold and Target: as calculated by interpolation method</td></tr>
<tr><td>Gross Margin</td><td>50%</td><td>53%</td><td>One-third</td></tr>
<tr><td>Return on Equity (ROE)</td><td>20%</td><td>25%</td><td>One-third</td></tr>
</table></td></tr>
<tr><td>Restriction on Rights in the Restricted Employee Shares</td><td>1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the employees cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means.
2. During each vesting period, no employees granted RSAs may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs.
3. Subject to the restrictions mentioned above, the rights of the employees with regard to the unvested RSAs granted under these Rules before the fulfillment of the vesting conditions, including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of the Company. The relevant matters shall be handled in accordance with the RSA trust/custody agreement.
4. Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and any other shareholder rights shall be exercised by the engaged trustee/custodian on the employees' behalf.
5. During each vesting period, if the Company conducts a capital reduction for cash return, capital reduction for loss offset, or other non-statutory capital reduction, the unvested RSAs shall be cancelled proportionally by the ratio of such capital reduction. If the Company conducts a capital reduction for cash return, the returned cash shall be deposited in a trust/custody account and shall not be delivered to the employees until the vesting conditions are fulfilled; otherwise, the cash will be returned to the Company.</td></tr>
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(Continued)

<table>
<tr><td>Custody of the Restricted Employee Shares</td><td>1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the employees cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means.
2. During the period when the granted RSAs are deposited in a trust/custody account, each executive must enter into an agreement authorizing the Company to, among others, negotiate, execute, modify, extend, rescind, and terminate the trust/custody agreement with the trustee/custodian, and give instructions to deliver, use, and dispose of any of the properties under the trust/custody, on their behalf, with full power and authority.</td></tr>
<tr><td>Treatment of the Restricted Shares for Which the Grantee Fails to Meet the Vesting Conditions after Receiving or Subscribing to the Shares</td><td>1. The Company will reclaim the granted RSAs and cancel the same at no extra cost to the Company, where an employee fails to meet the vesting conditions.
2. Voluntary Separation, separation with a severance, or involuntary discharge: Any unvested RSAs will be forfeited on the effective date of separation due to a voluntary separation, separation with a severance, or involuntary discharge of such employees. The Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company.
3. Leave Without Pay: All the rights and obligations in connection with the unvested RSAs will not be affected as a result of employees taking extended leave without pay. However, the actual number of shares that may be vested will not only be calculated according to the vesting conditions but also be prorated based on the number of months of their service during the year prior to the applicable vesting day. If such employees are on leave without pay on any vesting day, it shall be deemed that they fail to meet the vesting conditions, and the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company.
4. Retirement: All the rights and obligations in connection with the unvested RSAs will not be affected as a result of an employee's retirement, provided that the employee complies with both of the following conditions after his/her retirement. If any of the following conditions is not met, any unvested RSAs will be forfeited. Exemption could be made case by case by Chairman and CEO.
- Not to get any full-time job; and
- Not to engage in competition with the Company or the Company's subsidiaries, including without limitation: to join a competitor, to provide any competitive services, to establish any company or business that would involve a competitive foundry process or service, or to employ, induce, or attempt to induce any TSMC employee to undertake competitive services.
All the rights and obligations in connection with the unvested RSAs will not be affected as a result of an employee's retirement. However, the actual number of shares that may be vested shall be calculated according to the vesting condition, and the performance rating granted to them shall be deemed "S".
5. Employment Termination Due to Death or Physical Disability Caused by Occupational Accidents: The unvested RSAs shall be deemed immediately vested in the case of death or physical disability due to an occupational accident. For eligible executive officers of the Company, the RSAs vested shall be based on the assumption that the Company's TSR equals to the TSR of S&P 500 IT Index and there is no further adjustment for the Company's ESG achievements. For eligible employees who are not executive officers of the Company and the Company's subsidiaries, the RSAs vested shall be based on the assumption that the Company's Revenue growth, Gross Margin, and ROE are all equal to Threshold. In the case of death, the respective heir(s) may apply for entitlement to those inheritable shares after completing all necessary legal procedures and providing relevant supporting documents. In the case of physical disability caused by occupational injury, the vested RSAs will be received by such employees.
6. Position Transfer:
- Where any employees apply for transferring to any of the Company's subsidiaries, affiliates, or other companies, the measures to be taken with respect to their unvested RSAs will be the same as "Voluntary Separation".
- Where any employees are assigned by the Company or the Company's subsidiaries to a position in any of the Company's subsidiaries, affiliates, or other companies, all the rights and obligations in connection with the unvested RSAs will not be affected as a result. However, subject to the vesting condition, such employees shall continue working in the assigned subsidiaries, affiliates, or other companies on the vesting dates. Otherwise, they will be considered to fail to meet the vesting conditions, and the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. With respect to the evaluation of the achievement of individual performance goals, Chairman and Chief Executive Officer will determine whether the vesting conditions are met by reviewing the evaluation of the employees' performance provided by the assigned subsidiaries, affiliates, or other companies.
7. Where any employees declare to voluntarily relinquish the granted RSAs with a written statement, the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company.
8. Where any employees, after being granted the RSAs, breach any agreement with the Company employment agreement or violate the Company's work rules, the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company.
9. Where any employees terminate or revoke their authorization given to the Company regarding the employees' RSA trust/custody account, the Company will reclaim their unvested RSAs and cancel the same at no extra cost to the Company.</td></tr>
<tr><td>Number of Restricted Employee Shares That Have Been Retired or Bought Back</td><td>0 share</td></tr>
<tr><td>Number of Restricted Employee Shares That Have Vested</td><td>0 share</td></tr>
<tr><td>Number of Unvested Restricted Employee Shares</td><td>2,110,000 shares</td></tr>
<tr><td>The Ratio of Number of Unvested Restricted Employee Share to the Total Number of Issued Shares (%)</td><td>0.00814%</td></tr>
<tr><td>The Effect on Shareholders' Equity</td><td>The potential dilution of the Company's EPS is minimal; therefore, there is no material impact on shareholders' interest.</td></tr>
</table>

<table>
<tr><td>Type of Employee Restricted Stock</td><td>Employee Restricted Stock Awards for Year 2023</td></tr>
<tr><td>Effective Registration Date and Total Number of Shares</td><td>12/28/2023 /6,249,000 shares</td></tr>
<tr><td>Issue Date</td><td>None</td></tr>
<tr><td>Number of Restricted Employee Shares Issued</td><td>0 share</td></tr>
<tr><td>Number of Restricted Employee Shares Still Available for Issuance</td><td>6,249,000 shares</td></tr>
<tr><td>Issued Price</td><td>None</td></tr>
<tr><td>Ratio of the Number of Restricted Employee Shares Issued to the Total Number of Issued Shares</td><td>0%</td></tr>
<tr><td>Vesting Conditions of Restricted Employee Shares</td><td>1. The RSAs granted to an employee can only be vested if (a) the employee remains employed by the Company or the Company's subsidiaries on the last date of each vesting period; (b) during the vesting period, the employee may not breach any agreement with the Company or the Company's subsidiaries or violate the Company's or the Company's subsidiaries' work rules; and (c) certain employee performance metrics (a year-end performance rating of at least "S" (Note) or above for the year immediately preceding the expiration of each vesting period) and the Company's business performance metrics are met. (Note: "S" stands for "Successful")
2. The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of the Company's business performance metrics, as detailed in the following points.
3. For eligible executive officers of the Company: The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on the Company's relative TSR (Note) achievement (see table below) to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation and People Development Committee's evaluation of the Company's ESG achievements. The number of shares so calculated should be rounded down to the nearest integral.
<table>
<tr><th>The Company's TSR Relative to the TSR of S&P 500 IT Index</th><th>Ratio of Shares to Be Vested</th></tr>
<tr><td>Above the Index by X percentage points</td><td>50% + X * 2.5%, with the maximum of 100%</td></tr>
<tr><td>Equal to the Index</td><td>50%</td></tr>
<tr><td>Below the Index by X percentage points</td><td>50% - X * 2.5%, with the minimum of 0%</td></tr>
</table>
Note: TSR: Total Shareholder Return (including capital gains and dividends)
4. For eligible employees who are not executive officers of the Company and the Company's subsidiaries: The number of RSAs to be vested in each year will be calculated in accordance with the below table based on the Company's audited consolidated financial statements for the year prior to the vesting year. The number of shares so calculated should be rounded down to the nearest integral.
<table>
<tr><th></th><th>Threshold</th><th>Target</th><th>Weighting</th><th>Ratio of Shares to Be Vested</th></tr>
<tr><td>Revenue Growth</td><td>10%</td><td>15%</td><td>One-third</td><td rowspan="3">• < Threshold: 0%
• = Threshold: 50%
• ≧Target: 100%
• Between Threshold and Target: as calculated by interpolation method</td></tr>
<tr><td>Gross Margin</td><td>50%</td><td>53%</td><td>One-third</td></tr>
<tr><td>Return on Equity (ROE)</td><td>20%</td><td>25%</td><td>One-third</td></tr>
</table></td></tr>
<tr><td>Restriction on Rights in the Restricted Employee Shares</td><td>1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the employees cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means.
2. During each vesting period, no employees granted RSAs may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs.
3. Subject to the restrictions mentioned above, the rights of the employees with regard to the unvested RSAs granted under these Rules before the fulfillment of the vesting conditions, including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of the Company. The relevant matters shall be handled in accordance with the RSA trust/custody agreement.
4. Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and any other shareholder rights shall be exercised by the engaged trustee/custodian on the employees' behalf.
5. During each vesting period, if the Company conducts a capital reduction for cash return, capital reduction for loss offset, or other non-statutory capital reduction, the unvested RSAs shall be cancelled proportionally by the ratio of such capital reduction. If the Company conducts a capital reduction for cash return, the returned cash shall be deposited in a trust/custody account and shall not be delivered to the employees until the vesting conditions are fulfilled; otherwise, the cash will be returned to the Company.</td></tr>
</table>

(Continued)

<table>
<tr><td>Custody of the Restricted Employee Shares</td><td>1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the employees cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means.
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<tr><td>Number of Restricted Employee Shares That Have Vested</td><td>0 share</td></tr>
<tr><td>Number of Unvested Restricted Employee Shares</td><td>6,249,000 shares</td></tr>
<tr><td>The Ratio of Number of Unvested Restricted Employee Share to the Total Number of Issued Shares (%)</td><td>0.24098%</td></tr>
<tr><td>The Effect on Shareholders' Equity</td><td>The potential dilution of the Company's EPS is minimal; therefore, there is no material impact on shareholders' interest.</td></tr>
</table>

4.6.2 Employee Restricted Stock Granted to Management Team and to Top 10 Employees

Unit: Share

As of 02/29/2024

	Title	Name	No. of Employee Restricted Stock Granted	Employee Restricted Stock as a Percentage of Shared Issued (Note 4)	Restrictions Released				Restrictions Unreleased			
					No. of Shares	Issued Price (NT$)	Issued Amount (NT$ thousands)	Released Shares as a Percentage of Shares Issued (Note 4)	No. of Shares	Issued Price (NT$)	Issued Amount (NT$ thousands)	Unreleased Shares as a Percentage of Shares Issued (Note 4)
Management Team and Employee	Chief Executive Officer	C.C. Wei	3,497,000	0.01349%	274,034	0	0	0.00106%	2,803,500	0	0	0.01081%
	Senior Vice President, Chief Financial Officer/Spokesperson	Wendell Huang										
	Senior Vice President	Lora Ho										
	Senior Vice President	Wei-Jen Lo										
	Senior Vice President	Y.P. Chyn (Note 1)										
	Senior Vice President	Y.J. Mii (Note 1)										
	Senior Vice President	J.K. Lin										
	Senior Vice President	J.K. Wang (Note 2)										
	Senior Vice President	Cliff Hou (Note 3)										
	Senior Vice President	Kevin Zhang (Note 3)										
	Senior Vice President and General Counsel/Corporate Governance Officer	Sylvia Fang										
	Vice President	Connie Ma (Note 2)										
	Vice President	Y.L. Wang										
	Vice President and TSMC Distinguished Fellow	Douglas Yu										
	Vice President and TSMC Fellow	T.S. Chang										
	Vice President	Michael Wu										
	Vice President	Min Cao										
	Vice President	Marvin Liao (Note 2)										
	Vice President	Y.H. Liaw										
	Vice President	Simon Jang										
	Vice President	C.S. Yoo										
	Vice President	Jun He										
	Vice President	Geoffrey Yeap										
	Vice President and Chief Information Officer	Chris Horng-Dar Lin										
	Vice President	Jonathan Lee										
	Vice President	Arthur Chuang										
	Vice President and TSMC Fellow	L.C. Lu										
	Vice President	K.C. Hsu										
	Employee	Y.C. Huang (Note 2)										

Note 1: Mr. Y.P. Chyn and Dr. Y.J. Mii were appointed as Executive Vice Presidents and Co-Chief Operating Officers, effective March 1, 2024.
Note 2: Vice President J.K. Wang retired, effective May 7, 2022. Vice President Connie Ma retired, effective November 1, 2022. Vice President Dr. Marvin Liao retired, effective November 11, 2022. Mr. Y.C. Huang retired, effective May 1, 2022.
Note 3: Dr. Cliff Hou and Dr. Kevin Zhang were appointed as Senior Vice Presidents and Deputy Co-Chief Operating Officers, effective March 1, 2024.
Note 4: The number of shares issued is based on the amended number of total shares disclosed on Ministry of Economic Affairs as of 02/29/2024.

4.7 Status of New Share Issuance in Connection with Mergers and Acquisitions: None.

4.8 Funding Plans and Implementation

TThe funds raised by TSMC through issuances of domestic corporate bonds are used in accordance with respective funding plans and actual needs. As of the end of the fourth quarter of 2023, the implementation of uncompleted plan was as follows:

Projects	Gross Proceeds	Use of Proceeds	Implementation Status
Unsecured Corporate Bond (112-1, Green Bond)	NT$19.3 billion	Green buildings and environmental protection related expenditures	As of the end of the fourth quarter of 2023, the actual completion rate was 52.53% (calculated based on actual payments), as compared to the original plan of 75.81%. The actual completion rate was lower than planned due to the progress of actual payment application. There is no change to the use of proceeds, and the proceeds will be used in order depending on the actual time of payments. There were no material differences between the expected benefits and the actual ones, and no impacts on shareholders' interests.
Unsecured Corporate Bond (112-2, Green Bond)	NT$20.7 billion	Green buildings and environmental protection related expenditures	The funds are scheduled to be used from the first quarter of 2024.

Fab 15

5 Operational Highlights

TSMC manufactured 11,895 different products using 288 distinct technologies for 528 different customers in 2023.

5.1 Business Activities

5.1.1 Business Scope

As the founder and a leader of the dedicated semiconductor foundry segment, TSMC provides a full range of integrated semiconductor foundry services, including leading advanced process and specialty technologies, advanced mask technologies, TSMC 3DFabric® advanced packaging and silicon stacking technologies, excellent manufacturing productivity and quality, as well as comprehensive design ecosystem support, to meet a growing variety of customer needs. The Company strives to provide unparalleled overall value to its customers and views customer success as TSMC's own success. As a result, TSMC has gained customer trust from around the world and has experienced strong growth and success of its own.

TSMC developed or introduced the following technologies in 2023:

Logic Technology

- 2nm (N2) technology development kept on track and made good progress. N2 technology features TSMC's first generation of nanosheet transistor technology with full-node strides in performance and power consumption. Volume production is expected in 2025.
- 3nm fin field-effect transistor (FinFET) (N3) technology entered its second year of volume production in 2023 for customers' smartphone and high performance computing (HPC) products.
- N3 Enhanced (N3E) technology, an enhanced version of N3 technology, will continue to provide industry-leading advantages for both mobile communication and HPC applications. Volume production started in the fourth quarter of 2023.
- N3P technology, an enhanced version of N3E technology, will further provide industry-leading advantages for both mobile communications and HPC applications. Volume production is expected in the second half of 2024.
- N3X technology, a process tailored for HPC applications, was introduced in 2023. Customer product tape-outs are expected to start in 2024.
- 4nm FinFET (N4) technology, an enhanced version of 5nm FinFET (N5) technology, entered its second year volume production in 2023.
- N4P technology with additional performance boost over N4 started volume production in 2023.
- N4X technology, introduced in 2021, is TSMC's first HPC-focused technology, representing the ultimate performance and maximum clock frequencies in TSMC's 5nm family. Customer tape-outs were received in the second half of 2023.
- N5 Plus (N5P) technology, a performance-enhanced version of 5nm technology (N5), entered its third year of volume production in 2023 for customers' smartphones and HPC products.
- 6nm FinFET (N6) technology entered its fourth year of volume production in 2023 and was widely adopted for customers' smartphone, HPC, and digital consumer electronics (DCE) products.
- N6 ultra-low power (ULP) technology – N6e™ development is on track. Its process design kit (PDK) was completed in the fourth quarter of 2023 and the technology is expected to start production in 2024.
- 7nm FinFET (N7) and 7nm FinFET plus (N7+), which have been in volume production for customers' 5G and HPC products for several years, entered their third year of volume production for customers' DCE and automotive products in 2023.
- N12e™ technology, which leverages TSMC's 12nm FinFET compact plus (12FFC+) baseline, started volume production in 2021. Following this, N12e™ technology introduced innovative ultra-low leakage input/output (IO) devices in 2022. This technology started volume production in 2023 to help customers provide more competitive ultra-low power products.
- 22nm ultra-low leakage (22ULL) technology entered its second year of volume production in 2023 and has been widely adopted for Internet of Things (IoT) products.

Specialty Technology

- Based on its N3E technology, TSMC introduced N3 Auto Early (N3AE) program in 2023, providing automotive PDKs to support automotive customers to design in the most advanced 3nm technology for automotive applications.
- N4P radio frequency (N4P RF) technology development was completed, and its V1.0 PDK was available in the fourth quarter of 2023.
- 5nm FinFET Automotive (N5A) technology, an automotive qualified version of 5nm technology (N5) with an automotive design enablement platform, completed technology development and IP AEC-Q100 qualification and certified by ISO26262: Functional Safety – Road Vehicles Standard in 2022. Customer product tape-outs were received in 2023.
- N6 RF technology received multiple customer product tape-outs in 2022. In addition, the second generation N6 radio frequency (N6 RF+) technology is also being developed, and its V0.9 PDK is available in the fourth quarter of 2023.
- 12FFC+ RF technology, developed on the same logic process platform as N12e™ technology, started volume production for customers' 4G cellular RF and IoT wireless connectivity products in 2023.
- 16FFC FinFET compact (16FFC) RF technology received multiple customer tape-outs in 2021. The development of its enhanced version (Enhancement I/II) was completed in 2022 to support applications such as 28/39/47GHz mmWave RF front-end module and 77GHz/79GHz automotive radar. In addition, non-conductive stress (NCS) calculator and aging model were introduced in 2023 to support automotive radar power amplifier designs.
- 16FFC embedded magnetoresistive random access memory (MRAM) technology completed reliability qualification in 2022, with one million cycles endurance and reflow capability. This technology was ready for production and passed AEC-Q100 Grade-1 reliability qualification in 2023.
- 22ULL and 28ULL embedded resistive random access memory (RRAM) technologies, TSMC's second generation of RRAM solutions featuring balanced cost and reliability, entered the second year of volume production in 2023.
- 40nm Silicon on Insulator (N40SOI) technology on 12-inch wafers, which provides industry-leading competitive advantages, entered its second year of volume production in 2023.
- Development of the second generation of 6-inch gallium nitride (GaN) on silicon technology kept on track. This technology will support both DCE and automotive electronics applications and is expected to be ready in 2024. In addition, the 8-inch GaN on Silicon technology development is on track. This technology will support both DCE and automotive electronics applications and is expected to be ready in 2025.
- CMOS image sensor (CIS) technology was enhanced and moved to the next generation to further strengthen the capabilities of advanced automotive CISs. In 2023, TSMC helped customers roll out products with the world's highest dynamic range in performance.
- For silicon photonics technology, TSMC is developing an innovative 3D photonics stack technology – compact universal photonics engine (COUPE), which can integrate silicon photonics chip and electrical control chip into a single-chip photonic engine. This photonics engine can be co-packaged with a HPC chip to provide low power and high speed data transmission. In 2023, the data rate of the test vehicles using TSMC's COUPE technology achieved the expected goal, laying a solid foundation for future volume production.

TSMC 3DFabric® - TSMC Advanced Packaging and 3D Silicon Stacking Technologies

- TSMC-SoIC® Chip-on-Wafer (CoW) technology was qualified for N5-on-N5 stacking and successfully started volume production in 2023.
- TSMC-SoIC® Wafer-on-Wafer (WoW) technology was qualified for stacking 7nm logic wafer on deep trench capacitor (DTC) wafer in 2023 and demonstrated superb system performance enhancement for HPC products.
- Chip on Wafer on Substrate with Silicon Interposer (CoWoS®-S) technology, which integrates multiple system-on-chip (SoC) chips, the third generation high bandwidth memory (HBM3) stacks, and a 3.3-reticle size silicon interposer featuring the second generation of embedded deep trench capacitor (eDTC), was qualified for customer HPC products in 2023.
- Chip on Wafer on Substrate with Redistribution Layer Interposer (CoWoS®-R) technology featuring redistribution layer (RDL) interposer for better signal integrity for HPC applications successfully started volume production in 2023.
- Integrated Fan-Out on Substrate (InFO_oS) technology that extended its capability to integrate multiple homogeneous SoC chips in a 2.5-reticle size fan-out package successfully started volume production in 2023.
- Integrated Fan-Out Multi-chips with Package-on-Package (InFO_M_PoP) technology, which integrates multiple heterogeneous chips with package stacking for wearable products, successfully started volume production in 2023.
- Fine pitch copper (Cu) bump technology for flip chip packaging on 3nm silicon successfully started volume production in 2023.

5.1.2 Customer Applications

TSMC manufactured 11,895 different products for 528 customers in 2023. These chips were used across a broad spectrum of electronic applications, including artificial intelligence (AI) and high-performance computing servers, wired and wireless communication systems, automotive and industrial equipment, personal computers and peripherals and information appliances, as well as consumer electronics such as digital TVs, game consoles, digital cameras, AI-enabled IoT and wearables, and many other devices and applications.

The rapid ongoing evolution of end products prompts customers to pursue product differentiation using TSMC's innovative technologies and services and, at the same time, spurs TSMC's own development of technology. As always, TSMC believes success depends on leading rather than following industry trends.

5.1.3 Consolidated Shipments and Net Revenue in 2023 and 2022

Unit: Shipments (thousand of 12-inch equivalent wafers) / Net Revenue (NT$ thousands)

Shipments		2023		2022	
		Shipments	Net Revenue	Shipments	Net Revenue
Wafer	Domestic (Note 1)	1,551	145,720,682	2,324	202,075,489
	Export	10,451	1,736,797,398	12,929	1,789,780,458
Others (Note 2)	Domestic (Note 1)	N/A	21,637,291	N/A	16,668,631
	Export	N/A	257,580,470	N/A	255,366,714
Total	Domestic (Note 1)	1,551	167,357,973	2,324	218,744,120
	Export	10,451	1,994,377,868	12,929	2,045,147,172

Note 1: Domestic means sales to Taiwan.
Note 2: Others mainly include revenue associated with packaging and testing services, mask making, design services, and royalties.

5.1.4 Production in 2023 and 2022

Unit: Capacity / Output (million 12-inch equivalent wafers) / Amount (NT$ millions)

Wafers			
Year	Capacity	Output	Amount
2023	16-17	11-12	791,773
2022	15-16	15-16	854,900

5.2 Technology Leadership

5.2.1 R&D Organization and Investment

In 2023, TSMC continued to invest in research and development, with total R&D expenditures amounting to 8.5% of revenue, a level that equals or exceeds the R&D investment of many other leading high-tech companies.

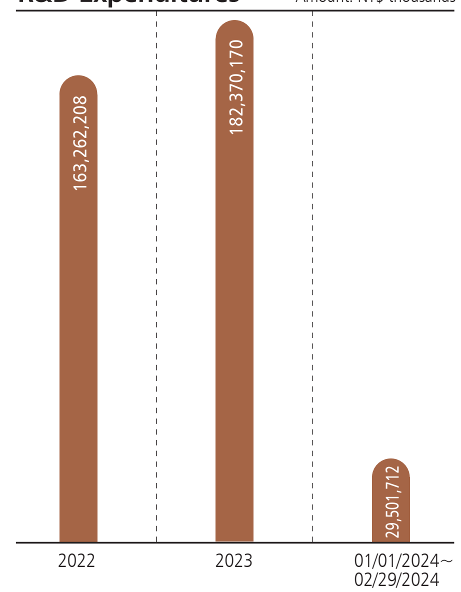
Faced with the continuous challenge of significantly scaling up semiconductor computing power every two years, thereby extending Moore's Law, the Company has focused its R&D efforts on contributing to customers' product success by offering leading-edge technologies and design solutions. In 2023, while the development of 2nm technology continued baseline setup and moved into yield enhancement stage, TSMC started development and made good progress on 14 Angstrom (A14) technology, which aims to further improve speed, power, density and cost. Furthermore, the Company's research efforts continued pushing forward with exploratory studies for nodes beyond 14 Angstrom technology.

In addition to complementary metal oxide semiconductor (CMOS) logic, TSMC conducts R&D on a wide range of other semiconductor technologies that provide the functionality required by customers for mobile system-on-chip (SoC) and other applications. Highlights in 2023 included:

- The Company's integrated interconnect and packaging solution, the 3DFabric® technology service, showed further progress in supporting the newest generation of high bandwidth memory, HBM3E, on both CoWoS®-S and CoWoS®-L. While TSMC continued its industry leadership in high-volume manufacturing of InFO_PoP Gen-8 packaging, InFO_PoP Gen-9 was also fully qualified for mobile applications. In addition, InFO_oS Gen-5 was successfully qualified, offering larger application-specific integrated circuits (ASIC) area, more chip-partition integration, larger package size and higher bandwidth.
- In specialty technologies, examples of progress included: 0.13μm and 90nm BCD (Bipolar-CMOS-DMOS) technologies were expanded to meet the demand of the automotive market; TSMC's industry leading GaN (Gallium Nitride) power device technology, the second generation of 650V and 100V E-HEMT, entered the reliability verification stage with production expected in 2024; the worldwide first CMOS image sensor technology with 3D-MiM embedded LOFIC (lateral overflow integration capacitor) pixel with a high dynamic range (DR>100dB) for high-end smart phone or advanced driver-assistance systems (ADAS) automotive imaging applications entered risk production; and the world's first mass-production of 22nm consumer-grade magnetoresistive random access memory (MRAM) was achieved.

In 2023, TSMC maintained strong partnerships with many world-class research institutions, including SRC in the U.S. and IMEC in Belgium. The Company also continued to expand research collaboration with leading universities throughout the world for two major purposes: the advancement of semiconductor technologies and the nurturing of human talent for the future.

R&D Expenditures Amount: NT$ thousands



5.2.2 R&D Accomplishments in 2023

Highlights

- 2nm Technology

In 2023, TSMC's 2nm technological development focused on baseline setup, yield enhancement, transistor and interconnect R/C performance improvement, and reliability evaluation. During the year, major customers completed IP design and started silicon validation. The Company also developed low resistance RDL (redistribution layer), super high performance metal-insulator-metal (MiM) capacitors and backside power delivery network to further boost performance.

- A14 Technology

Development of the 14 Angstrom (A14) platform technology, targeting both SoC and HPC applications, made good progress in 2023. 14 Angstrom platform technology is expected to offer excellent improvement in speed, power, density and cost over 2nm technology.

- Lithography Technology

In 2023, TSMC R&D demonstrated high performance and expected wafer yield for the development of 2nm technology. The Company's R&D efforts in lithography have been focused on improving patterning and material quality, controlling variations, reducing defects, and lowering costs to support 2nm technology. Looking ahead to A14 and beyond, TSMC R&D will continue to explore next-generation EUV (extreme ultraviolet) lithography scanners, conduct research on mask pellicles and blanks to support leading-edge technology and extend Moore's Law. Furthermore, TSMC R&D will continuously evaluate new process technologies and materials to enhance lithography capabilities in the future.

- Mask Technology

In 2023, to achieve the wafer yield and productivity for lithography requirements at 2nm node, the R&D team improved the critical dimension, pattern fidelity, overlay stability, exposure durability and defect mitigation of curvilinear patterns by EUV photoresist and blank material modification, multi-beam writer resolution enhancement, mask process recipe optimization, and advanced deep learning inspection. Future improvements will focus on developing new blank materials and new mask process technology at the A14 node and beyond.

Integrated Interconnect and Packaging

TSMC's existing fine pitch, chip-to-chip connection leveraging wafer processes is called 3DFabric® and consists of both wafer-level frontend and backend technologies. The Company's frontend technologies, or TSMC-SoIC®, enables leading-edge silicon for 3D silicon stacking. TSMC's advanced backend technologies includes CoWoS® with chips placed onto pre-made RDLs and InFO with chips embedded before interconnection. The Company's 3DFabric® technology service offers the ultimate flexibility in product design with integrated frontend and backend technologies to meet future computing systems integration scaling needs.

- 3DIC and TSMC-SoIC®

TSMC-SoIC® wafer product is an innovative wafer-level frontend 3DIC chip stacking platform with outstanding bonding density, interconnect bandwidth, power efficiency, and thin profile. It extends Moore's Law through system-level scaling with sustainable performance gains and corresponding cost benefits. SoIC integrated chips can be subsequently assembled by using conventional packages or TSMC's new 3DFabric® technology service, such as CoWoS® or InFO, for next generation HPC, AI and mobile applications. The SoIC CoW Face-to-Back Gen-1 process is in production and the SoIC CoW Face-to-Back Gen-2 process, with significant thermal performance improvement, is under product qualification and will enter production phase in 2024. The SoIC CoW

Face-to-Face Gen-1 process is under development and will provide an ultrahigh density connection solution in 2025. TSMC will continue to pursue SoIC technological improvements and co-optimize with the Company's advanced silicon technologies for further gains in transistor density, system power/performance/area and cost.

• CoWoS®

CoWoS® advanced packaging service is the leading 2.5D technology to make ultra-high-performance AI and HPC packages by integrating most advanced logic and memory dies on an interposer. Market demands became even greater with the advent of generative AI in late 2022. TSMC qualified the CoWoS®-S Si interposer up to 3.3-reticle size (1 reticle size ~830mm^2), with volume production launched in 2023. Beyond 3.3-reticle size, CoWoS®-L with reconstituted interposer of multiple LSIs (local silicon interconnects) increases the momentum for continuous interposer scaling. After its successful development in 2023, the first generation CoWoS®-L technology will enter volume production in 2024. HBM3E, the newest generation of high bandwidth memory, is ready now for production on both CoWoS®-S and CoWoS®-L, while the next generation of stacked memory of HBM4 and process upgrades in CoWoS® advanced packaging service are being planned to meet new performance requirements.

• InFO

In 2023, TSMC continued its industry leadership in high-volume manufacturing of InFO_PoP Gen-8 packaging for mobile applications. InFO_PoP Gen-9 was also successfully qualified for mobile applications, as was InFO_oS Gen-5, offering larger application-specific integrated circuits (ASIC) area, larger package size and higher bandwidth. InFO_M_PoP Gen-1, which integrates different functional chips suitable for wearable applications, started volume production in 2023, while the next-generation InFO_PoP with backside RDL for integrated low power DDR DRAM technology (LPDDR) was qualified in 2023 and is ready for volume production in 2024.

• Advanced Interconnect

TSMC's continuous striving for excellence and focus on innovative interconnect technologies empower its customers to design and manufacture highly competitive products. In 2023, the Company developed a unique backend-of-line process that reduces via resistance. In addition, TSMC research on new materials for future interconnect applications demonstrated significant line resistance reduction. These state-of-the-art technologies will reinforce TSMC's technology leadership in semiconductor field.

Corporate Research

TSMC remains at the forefront of 2D transistor research with innovation in devices and materials to enable extremely scaled logic transistors. At the 2023 Symposia on VLSI Technology and Circuits, the Company demonstrated contact length scaling with record low contact resistance. Monolayer-MoS_2 channel transistors have the same driving current at contact length down to 30nm. At the 2023 International Electron Device Meeting (IEDM), TSMC successfully demonstrated the first stacked nanosheet devices with two 2D monolayer MoS_2 channels. With gate dielectric optimization, the Company also showed high performance 40nm gate length 1L-MoS_2 single nanosheet n-FET with a high on-state current. Also at the 2023 IEDM, TSMC demonstrated, for the first time, n-type MoS_2 and p-type WSe_2 2D FET with comparable high on-state current. This on-state current for 2D p-FET also set a record for high performance. CMOS demonstration with co-integration of MoS_2 n-FET and WSe_2 p-FET on the same chip resulted in nearly unaltered performance.

The Company continues to research emerging high-density, non-volatile memory devices and hardware accelerators for AI and HPC applications. At the 2023 IEDM, TSMC presented a new 1S1R device based on the arsenic-free SNGCT chalcogenide selector and on the STT-MRAM memory element. This 1S1R device demonstrated excellent write and read performance, including low write voltage, high speed, low write error rate, high write endurance, and excellent immunity to read disturb. At the 2023 International Solid-State Circuits Conference (ISSCC), TSMC demonstrated a nonvolatile AI-Edge processor with 4MB hybrid-mode ReRAM compute-in-memory (CIM) macro. This CIM macro includes configurable circuits supporting both near-memory computing (NMC) and in-memory computing (IMC) modes within a macro. Among reported nonvolatile AI-edge processors, the proposed 22nm AI-edge processor achieved the highest energy efficiency.

Specialty Technologies

TSMC offers a broad array of technologies to address a wide range of applications:

• Mixed Signal/Radio Frequency (MS/RF)

While global consumer electronics were impacted by the aftermath of economic uncertainty triggered by COVID-19, in 2023 TSMC introduced N6RF+ technology to provide an alternative, cost-effective option to solve the excess inventory in smartphone markets and also provided N4RF for more high-end RF applications. To address the market in mmWave and RF frontend modules, the Company made continuous enhancements in N28HPC+ and N40SOI RF technologies by value-added design technology co-optimization (DTCO) as verified by many win-win solutions with customers. TSMC provided services for other RF technologies aimed at new emerging markets, such as low earth orbit (LEO) satellites and autonomous vehicles, in the form of RF process design kits (PDKs) with the most powerful ecosystem and time-to-market advantages from circuit design to product verification.

• Power IC/Bipolar-CMOS-DMOS (BCD)

In 2023, TSMC continued to improve its competitiveness in the 12-inch BCD technology process by expanding its 0.13μm and 90nm BCD technology to meet the demand of the automotive market, where the 0.13μm to support 45V operation is currently undergoing reliability verification and is expected to be launched in 2024. The 55nm BCD has been successfully put into mass production and offers multiple 5V solutions for high-performance and low-power mobile applications. The second-generation of 40nm BCD and ultra-low power (ULP) process are fully compatible with 5-28V high-voltage components, thereby enabling more power management chip applications. The Company also successfully developed a 5V operated 6nm FinFET device for RF power amplifiers in high-end SoC.

• Micro-Electromechanical Systems (MEMS)

In 2023, TSMC implemented qualified piezoelectric micro electromechanical systems (MEMS) technology for the sampling of in-ear dynamic vent application, which could optimize user experience for wireless earphones and strengthen customers' competitiveness. In parallel, TSMC's next generation monolithic CMOS-MEMS technology was qualified to produce 6-axis inertial measurement unit (IMU) for automotive with high frequency vibration rejection capability to enable reliable and accurate responses regardless of different vehicle designs and road conditions. Future plans include the development of next-generation environmentally friendly piezoelectric technology, and ultrasound transducer applications.

• Gallium Nitride (GaN)

TSMC's second generation of 650V and 100V E-HEMT entered the reliability verification stage in 2023, maintaining the Company's leading position in the field of GaN power devices. The reliability test is expected to be completed in 2024 and then put into production. Meanwhile, to enhance customer product competitiveness, TSMC is also developing 8-inch 650V HEMTs for power devices in automotive electronics, expected to be launched in 2025.

• Display Drivers

TSMC completed 28nm HV product IC yield and reliability verification in 2023 and will start production in 2024. To bolster the Company's leading position in the field of high voltage display driver technologies, TSMC is developing 16nm high voltage FinFET with better performance and lower power usage for customers to design more competitive OLED display driver ICs.

• Complementary Metal-Oxide-Semiconductor (CMOS) Image Sensors

TSMC achieved several accomplishments in CMOS Image Sensor technology in 2023, including (1) risk production of the worldwide first 3D-MiM embedded LOFIC pixel with a high dynamic range (DR>100dB) for high-end smartphones or ADAS automotive imaging applications; (2) technology transfer of an enhanced 3D-MiM (2.5X capacitance boost) embedded voltage domain global shutter (VDGS) CMOS image sensor to a manufacturing fab; (3) demonstration of TSMC's next generation Si SPAD (single photon avalanche diode) technology with 55% pixel area shrinkage and 2X PDE improvement for more advanced and powerful 3D depth sensing applications; and (4) demonstration of new generation Ge/Si heterogeneous photodetector with 90% dark current reduction for SWIR (short-wave infrared radiation) 3D depth and bio signal sensing applications.

• Emerging Memory/Memory WoW Stacking Technology

The Company reached several major milestones in emerging memory technologies in 2023. TSMC offered RRAM as a low-cost embedded NVM (Non-Volatile Memory) solution for the price sensitive IoT market. The Company's 40nm, 28nm and 22nm nodes entered volume production, while 12nm and the next generation also entered development stage.

TSMC has achieved the world's first mass-production of 22nm consumer-grade MRAM. Moreover, the Company has taken steps to enhance its properties to meet automotive grade applications on the 22nm node. In 2023, TSMC successfully completed the technical qualification of the 16nm consumer-grade MRAM. Going forward, TSMC will collaborate closely with customers to develop an automotive grade 16nm

MRAM, as well as explore the next generation of 16nm embedded MRAM technology and focus on reducing the bit cell size for cost efficiency to accelerate the deployment of future technologies for software-defined vehicles (SDVs), smart sensor and edge-AI applications.

TSMC developed 55nm node logic wafer and dynamic RAM heterogeneous wafer stacking processes, not only increasing data transfer bandwidth but also significantly reducing power consumption, with mass production already underway in 2023. TSMC also verified the wafer stacking technology of 28nm node RRAM. The electrical performance and reliability passed the test, providing a solution for high performance computing. In addition, TSMC demonstrated the wafer stacking technology of 22nm node MRAM, which is expected to meet the high speed and low power requirements of AI computing.

5.2.3 Technology Platform

TSMC provides customers with advanced technology platforms that include the comprehensive infrastructure needed to optimize design performance, power, area (PPA) and cycle times. These include electronic design automation (EDA) design flows; silicon-proven libraries and IPs; and simulation and verification design kits, also known as PDKs, and technology files.

For the latest advanced technologies such as 2nm, 3nm, 4nm and 3DFabric®, the Company provides certified EDA tools, features and IP solutions for customer adoption at various design stages to meet their product requirements. To help customers plan new product tape-outs incorporating library/IP from the Company's Open Innovation Platform® (OIP) ecosystem, the OIP ecosystem features a portal to connect customers to solution providers from 14 EDA partners, seven Cloud partners, 39 IP partners, 26 design center alliance (DCA) and nine value chain aggregator (VCA) partners, as well as 22 partners with 3DIC expertise in the new 3DFabric® Alliance.

5.2.4 Design Enablement

TSMC's technology platforms provide a solid foundation to facilitate the design process. Customers can design using the Company's internally developed IPs or use IPs and EDA tools available from TSMC's OIP partners.

Tech Files and PDKs

EDA tool certification, an essential element for IP and customer designs to ensure that features meet TSMC process technology requirements, can be found on TSMC-Online. Corresponding technology files and PDKs are available for customers to download and use with certified EDA tools. TSMC provides a broad range of PDKs for digital logic, mixed-signal, radio frequency (RF), high-voltage driver, CMOS image sensor (CIS) and embedded flash technologies from 0.5μm to 2nm. In addition, the Company provides technology files for design rule checking (DRC), layout versus schematic (LVS), resistance-capacitance (RC) extraction, automatic place and route, and a layout editor to ensure that process technology information is accurately represented in EDA tools. By 2023, TSMC had provided customers more than 48,000 technology files and 3,400 PDKs.

Library and IP

Silicon intellectual property (IP) is the basic building block of IC designs. Various IP types are available to support different customer design applications including: foundation, analog/mixed-signal, embedded memory, interface and soft IP. TSMC and its alliance partners offer customers a rich portfolio of reusable IPs, which are building blocks for many circuit designs. To support 3DIC customer needs, TSMC introduced 3DIC IP in 2019. By 2023, the Company had expanded its library and silicon IP portfolio to contain more than 73,000 items, a 33% increase over 2022.

Design Methodology and Flow

Design reference flows are developed based on certified EDA tools to provide robust and comprehensive design methodology innovations that can help boost productivity. In 2023, TSMC released N2 HPC, mobile and custom design reference flows through OIP collaboration and announced their availability for customer adoption. In addition to process technology advancements, the Company released the design reference flows for analog design migration 2.0, N16 79GHz mmWave and N4P RF sub-10GHz technologies, and continued to develop and offer 3DFabric® design solutions for both 3D chip stacking and 2.5D advanced packaging technologies, including solutions supporting the 3Dblox standard, to reduce 3DIC design barriers, thus helping customers to improve productivity in their system-level designs. These design reference flows feature FinFET-specific and 3DFabric® design solutions to optimize PPA.

5.2.5 Intellectual Property

For a long time, TSMC has been protecting R&D innovation and operation development by way of utilizing patents and trade secrets as dual tracks under the established comprehensive IP management system, encouraging Company's innovation culture, and strengthening Company's competitive strengths so as to fulfill the Company's ESG vision. TSMC's General Counsel updates the Board of Directors on the status of the intellectual property management scheme.

TSMC's comprehensive patent management system includes: Patent management strategies, such as Global patent deployment, Exploratory invention mining, Patent portfolio expansion, and Patent exploitation and exercise; and Patent management rules, such as Tier-based IP evaluation, Patent competition rewards, Educational patent promotion, and Patent professional training. TSMC has established technological patent road maps by way of innovative patent strategy, strict management and risk-control measures; analyzed and monitored competitors by using intelligent patent maps; conducted core technology mining through invention workshops; expanded patent families on key technologies; filed and maintained patents by tier-based management, further enhanced patent protection through quality control on patent applications and continued to construct massive global patent portfolio with high quality; and, diversified exploitation of patent assets. In terms of patent filings, TSMC has accumulated more than 94,000 patent applications worldwide as of end of 2023, including 8,700+ applications filed in 2023. TSMC ranked No. 2 among global U.S. patent applicants, and No. 1 among patent applicants in Taiwan. In terms of patent grants, TSMC has accumulated 62,000+ patents worldwide as of end of 2023, including more than 6,000 global patents received. TSMC ranked No. 3 among U.S. Patentees, and No. 1 among patent patentees in Taiwan. In terms of patent quality, the allowance rate of TSMC's U.S. applications approached 100%.

Turning to trade secret management and strategy, 10 years after TSMC pioneered the "Trade Secret Registration System" in 2013, followed by the adoption of numerous intelligent management programmes, TSMC successfully launched the "Trade Secret Intelligent Management Version 2.0" and piloted the "Trade Secret Innovation Talent Scouting Online Merge Offline Service" in specific departments selected by a customized artificial intelligence (AI) system at Fab 12B, Fab 15A, and Fab 15B in 2023. By leveraging AI, static data from registered trade secrets were intelligently utilized to select colleagues with innovative potential by analyzing innovation indicators of their registered trade secrets. One-on-one, tailored guidance were provided to these colleagues by enthusiastic senior managers who have won several Golden Trade Secret Awards in the past to elevate their innovation's quality and generate more exceptional trade secrets. Through the transformational synergistic effects of quality and quantity, a continuous upward spiral of innovation is generated, strengthening the company's sustainable innovative culture and competitive advantage. The pilot run demonstrated that not only 18 inventors with innovation potential were successfully mentored by 6 Golden Coaches, but it also verified the feasibility of this novel initiative. This laid the foundation for future expansion and implementation in other fabs and divisions.

TSMC identifies and rewards impactful and high-quality innovations through the annual Golden Trade Secret Award ceremony, presenting 2,738 trade secrets with the Golden Trade Secret Award between 2013 and 2023. In addition, immense innovative drive and potential are illustrated through the 348,503 trade secrets registered thus far and with annual registrations exceeding 100,000 cases for the first time in 2023.

TSMC established the "Green Trade Secret Registration" column in 2021, and in 2023 alone recorded 633 registrations, a 500% increase from 2021's registration numbers, demonstrating how much TSMC's colleagues value Green Trade Secrets. Participating employees who registered for Green Trade Secrets span across multiple departments. On top of the Facility department, departments such as R&D and Manufacturing also participated enthusiastically in recording innovations contributing to sustainability, energy conservation, and carbon emission reduction, enriching the innovation diversity of Green Trade Secrets.

TSMC received a AAA (the highest tier) certificate by Taiwan Intellectual Property Management System (TIPS) in December 2021, and the valid period will expire after December 31, 2024.

TSMC's IP team works closely with technical teams from R&D in early stage to mass production, and actively constructs IP portfolio for each key innovative technology, including the latest technology nodes, so as to ensure Company's technology leadership in semiconductor field; TSMC utilize patents and trade secrets as dual tracks to successfully protect Company's main business including process technologies, designs, manufacturing and sales, and have been strategically utilized for defense and cross-license negotiation, so as to secure freedom of business operation worldwide.

5.2.6 TSMC University Collaboration Programs

In recent years TSMC has collaborated closely with several prestigious universities in Taiwan to carry out a variety of joint research projects. These collaborations encourage more university professors to conduct leading-edge semiconductor research in areas such as novel devices, process, materials manufacturing technologies, specialty technologies for electronic applications, and green manufacturing. At the same time, these projects provide hands-on training opportunities for students interested in these fields to prepare them for joining the semiconductor industry after graduation. Starting in 2013, TSMC established research centers at four top universities in Taiwan: National Yang Ming Chiao Tung University, National Taiwan University, National Cheng Kung University and National Tsing Hua University. In the past ten years, a total of 295 professors and more than 3,800 students with backgrounds in the disciplines of electronics, electrical engineering, physics, materials, chemistry, chemical engineering, and mechanical engineering have joined the research centers. In 2022, TSMC also actively supported the establishment of semiconductor or key technology research academies at National Taiwan University, National Cheng Kung University, National Tsing Hua University, National Yang Ming Chiao Tung University, National Sun Yet San University, and National Chung Hsing University, providing continuous funding for forward-looking research in Taiwan's semiconductor field and planning scholarship programs to encourage students who are interested in the field. In 2019, the Company jointly launched the TSMC-NTHU Semiconductor Program to enhance the quality and number of domestic semiconductor students and attract more outstanding students to a career in the semiconductor industry. By 2023, the list of school partners had grown to thirteen universities, including National Taiwan University, National Cheng Kung University, National Yang Ming Chiao Tung University, National Taipei University of Technology, National Taiwan University of Science and Technology, National Central University, National Sun Yet San University, National Chung Hsing University, National Chung Cheng University, Feng Chia University, Yuan Ze University, and Chung Yuan Christian University, with over 7,600 students enrolled to date. In addition, TSMC has long conducted strategic research projects at top overseas universities such as Stanford University, Massachusetts Institute of Technology, Princeton University, University of California, San Diego, University of Texas at Austin, University of Toronto, and the University of Tokyo and so on, focusing on innovative capabilities in transistors, interconnect, materials, device simulation and circuit design.

TSMC University Shuttle Program

The TSMC University Shuttle Program was established to provide professors at outstanding research universities worldwide with access to the leading silicon process technologies needed to develop innovative circuit design concepts. In 2023, TSMC teamed up with the Taiwan Semiconductor Research Institute (TSRI) to apply the successful customer experience to the University Shuttle Program. 16 nm technology is available at TSRI for advanced students to design, enabling their creativity to be transformed into physical chips. The University Shuttle Program provides access to TSMC silicon process technologies for digital and analog/mixed-signal circuits, RF designs, non-volatile memory design and ultra-low power designs. TSMC and the University Shuttle Program participants enjoy win-win collaboration through the program, which allows graduate students to implement exciting designs and achieve silicon proof points for innovation in various end-applications.

5.2.7 Future R&D Plans

To maintain its technology leadership, TSMC plans to continue investing heavily in R&D. While TSMC's 2nm and 14 Angstrom advanced CMOS logic nodes are progressing through the development pipeline, the Company's exploratory R&D work is focused on nodes beyond 14 Angstrom, and on areas such as 3D transistors, new memories and low-R interconnect, to lay a strong foundation to foster the development of innovative technology platforms in the future. TSMC's 3DFabric® advanced packaging R&D is developing innovations in subsystem integration to further augment advanced CMOS logic applications. The Company maintains its intensified focus on new specialty technologies such as RF and 3D intelligent sensors for 5G and smart IoT applications. TSMC research continues to develop novel materials, processes, devices and memories that may be adopted in the distant future, ten years and beyond. The Company also continues to collaborate with external research bodies from academia and industry consortia alike with the goal of gaining early awareness and adoption of future cost-effective technologies and manufacturing solutions for its customers. With a highly competent and dedicated R&D team and unwavering commitment to innovation, TSMC is confident in its ability to drive future business growth and profitability for years to come, by delivering advanced competitive semiconductor technologies to its customers.

Summary of TSMC's Major Future R&D Projects

Project Name	Description
2nm logic technology platform and applications	3D CMOS technology platform for SoC
A14 and beyond logic technology platform and applications	3D CMOS technology platform for SoC
3DIC	Cost-effective solutions with better form factor and performance for 3DIC integration
Next-generation lithography	Next-generation EUV lithography and related patterning technology to extend Moore's Law
Long-term research	Specialty SoC technology (including new NVM, MEMS, RF, analog) and transistors with 8 to 10 years horizon
The projects above account for roughly 73% of the total R&D budget for 2024. Total R&D budget is estimated to be around 8% of 2024 revenue.	

5.3 Manufacturing Excellence

5.3.1 GIGAFAB® Facilities

Maintaining reliable production capacity is a key manufacturing strategy at TSMC. The Company currently operates four 12-inch GIGAFAB® facilities – Fab 12, 14, 15 and 18. The combined capacity of the four facilities exceeded 12 million 12-inch wafers in 2023. Production within these facilities support 0.13μm, 90nm, 65nm, 40nm, 28nm, 16nm, 7nm, 5nm and 3nm process technologies and their sub-nodes.

The GIGAFAB® facilities are coordinated by a centralized management system known as super manufacturing platform (SMP) to provide customers with consistent quality and reliability, greater flexibility to cope with demand fluctuations, and faster yield learning and time-to-volume production, as well as lower-cost product requalification. In July 2023, TSMC inaugurated its global R&D center specializing in the technology development of 2nm nodes and beyond and to support the exploration of new materials and research on transistors structures. In addition, in response to strong market demand for 3DIC, TSMC opened and started operating its Advanced Packaging Fab 6 also in June 2023 as to provide comprehensive semiconductor manufacturing services from frontend to backend and testing.

5.3.2 Engineering Performance Optimization

As advanced technology continues to evolve and IC geometry keeps shrinking, the need for tighter manufacturing process and quality control becomes extremely challenging. TSMC has tailored its manufacturing infrastructure to handle a diversified product portfolio that uses strict process control to meet tightened specs and higher product quality, performance and reliability requirements from customers. TSMC's process control systems are integrated with numerous intelligent functions to achieve excellence in both quality and manufacturing. Through intelligent detection, smart diagnosis, and cognitive action, the Company produces remarkable yield enhancement, quality assurance, workflow improvement, fault detection, and cost reductions, while shortening its R&D cycle.

To meet 5G's stricter quality requirements for mobile, high performance computing (HPC), automotive and the Internet of Things (IoT), TSMC is implementing artificial intelligence (AI) and machine learning technologies, and has developed systems for precise fault detection and classification, intelligent advanced equipment control and intelligent advanced process control to ensure the consistency of tool matching and process stability. Combining intelligent process variation detection with foundry know-how to identify potential defects and minimize the convergence of process variation through self-diagnosis and cognitive action. As the result, each chip can be precisely controlled at the nanometer level to produce the highest quality wafers for customers.

5.3.3 Agile and Intelligent Operations

The Company's sophisticated, agile and intelligent operating system drives manufacturing excellence. TSMC has integrated process experience, machine tuning, manufacturing know-how, and AI technologies to create an intelligent manufacturing environment. Intelligent manufacturing technologies are widely applied to lean manufacturing, employee productivity, equipment productivity, process and equipment control, quality defense, and robotic control to optimize quality, productivity, efficiency, and flexibility. The end result is real-time information analysis, improved forecast capability, maximum cost effectiveness, and accelerated innovation. TSMC has also integrated new applications such as intelligent mobile devices, IoT, edge computing, and mobile robot, with intelligent automated material handling systems (AMHS) to consolidate wafer manufacturing data collection and analysis, utilize manufacturing resources efficiently, and maximize manufacturing effectiveness. TSMC continues to improve semiconductor production through AI that uses massive amounts of production data to achieve agile and intelligent operations.

5.3.4 Digital Transformation

To meet strong pent-up demand from customers, TSMC continues to implement technology to transform the “automated fab” into the “intelligent fab,” with the simultaneous improvement of product quality, equipment capacity, and personnel effectiveness. Intelligent fab has integrated the domain knowledge of semiconductor manufacturing, enabled system self-learning, and expanded the application of AI and machine learning, which includes dispatching, equipment tuning, process control, equipment diagnosis and maintenance, and quality inspection. This frees today’s engineers to focus on problem solving. Looking ahead to the future, all manufacturing improvement plans and productivity enhancements within the factory can be synchronized across global factories through the Global Manufacturing and Management Platform. Furthermore, the implementation of augmented reality (AR) and remote operation platforms will provide greater flexibility and efficiency in cross-factory machine maintenance and operations, thereby enabling a collaborative model to achieve operational efficiency and manufacturing quality consistency across all factories.

5.3.5 Raw Materials and Supply Chain Management

In 2023, TSMC, together with suppliers, continued to review and resolve supply and quality issues as well as potential supply chain risks through the collaboration of teams formed by fab operations, quality control and business organizations. TSMC also worked with suppliers to drive research and process innovation for advanced materials, strengthen quality, and save energy and reduce carbon emission in the supply chain to achieve a sustainable supply chain and create benefits from win-win solutions.

Raw Materials Supply

Major Materials	Major Suppliers	Market Status	Procurement Strategy
Raw Wafers	FST GlobalWafers SEH Siltronic SK siltron SUMCO	These 6 suppliers together provide over 90% of the world’s raw wafer supply.	•TSMC’s suppliers of silicon wafers are required to pass stringent quality certification procedures. •TSMC procures wafers from multiple sources to ensure adequate supplies for volume manufacturing and to appropriately manage supply risk. •Raw wafer quality enhancement programs are in place to support TSMC’s technology advancement. •TSMC regularly reviews the quality, delivery, cost, sustainability and service performance of its wafer suppliers. The results of these reviews are incorporated into subsequent purchasing decisions. •A periodic audit of each wafer supplier’s quality assurance system ensures that TSMC can maintain the highest quality in its own products. •TSMC takes various approaches with suppliers to optimize cost and supply.
Chemicals	Air Liquide BASF DuPont Entegris Fujifilm Electronic Materials Kanto PPC Kuang Ming Merck RASA Shiny Tokuyama Wah Lee	These 12 companies are the major worldwide suppliers of chemicals.	•Most suppliers have located their new operations closer to TSMC’s major manufacturing facilities, thereby significantly improving procurement logistics and reducing supply risk. •All supplied products are regularly reviewed to ensure that TSMC’s specifications are met and product quality is satisfactory. •In order to effectively manage costs and supply chain, TSMC has collaborated with suppliers and adopted various strategies. •TSMC encourages and collaborates with chemical suppliers to implement innovative green manufacturing improvement programs.
Lithographic Materials	DuPont Fujifilm Electronic Materials JSR Nissan Shin-Etsu Chemical Sumitomo Chemical T.O.K.	These 7 companies are the major worldwide suppliers of lithographic materials.	•TSMC works closely with suppliers to develop materials that meet all application and cost requirements. •TSMC and suppliers periodically conduct programs to improve their quality, delivery, sustainability and green policies, and jointly set improvement programs and monitor progress to ensure continuous improvement in TSMC’s supply chain.
Gases	Air Liquide Air Products Central Glass Entegris Linde LienHwa Merck SK specialty Co., Ltd. Taiwan Material Technology Nippon Sanso Taiwan	These 9 companies are the major worldwide suppliers of specialty gases.	•The majority of these suppliers have facilities in multiple geographic locations, which minimizes supply risk for TSMC. •TSMC conducts periodic audits to ensure that these suppliers meet TSMC’s standards.
Slurry, Pad, Disk	3M AGC Entegris DuPont Fujibo Fujifilm Electronic Materials Fujimi	These 7 companies are the major worldwide suppliers of CMP (Chemical Mechanical Polishing) materials.	•TSMC works closely with suppliers to develop materials that meet all application and cost requirements. •TSMC and suppliers periodically conduct programs to improve their quality, delivery, sustainability and green policy, and jointly set improvement programs and monitor progress to ensure continuous improvement in TSMC’s supply chain. •Most suppliers have relocated or plan to establish new manufacturing sites closer to TSMC’s major manufacturing facilities, thereby significantly improving procurement logistics and reducing supply risks.

Suppliers Accounting for at Least 10% of Annual Consolidated Net Procurement in 2023 and 2022

Unit: NT$ thousands

Supplier	2023			2022		
	Procurement Amount	As % of 2023 Total Net Procurement	Relation to TSMC	Procurement Amount	As % of 2022 Total Net Procurement	Relation to TSMC
Company A	17,862,380	20%	None	18,259,301	20%	None
Company B	17,763,637	20%	None	16,120,039	18%	None
Others	53,109,061	60%	-	56,546,611	62%	-
Total Net Procurement	88,735,078	100%	-	90,925,951	100%	-

- Reason for Increase or Decrease: The changes of procurement amount and percentage were mainly due to customer product demand change.

5.3.6 Quality and Reliability (Q&R)

TSMC strives to offer excellence in semiconductor manufacturing services to all its customers worldwide. The Company is dedicated to providing outstanding quality in every facet of its business and maintains a culture of continuous improvement to assure customer satisfaction. TSMC implements containment and preventive measures to protect customers from potential product defects.

In the technology development stage, the Q&R organization helps customers design in superior product reliability. In 2023, Q&R worked continuously with R&D in advanced logic, specialty and advanced packaging technologies throughout development and qualification stages to ensure meeting commitments to customers with respect to device characteristics, process yield and product reliability.

For advanced logic technology, following 3nm FinFET, Q&R successfully certified N3E, which is an enhanced version of 3nm processes for better power, performance and density. For specialty technologies, Q&R successfully qualified consumer-grade 22nm embedded MRAM process enhancement IP and completed reliability certification for 28nm HV (high voltage) technology. In addition, TSMC’s advanced packaging solutions enabled system improvement of the wafer level process by integrating the frontend wafer process and backend chip packaging. In 2023, Q&R completed the qualification and entered volume production of TSMC-SoIC® stacking technology, which stacks chips on wafers (CoW). TSMC also successfully certified the CoWoS® advanced packaging technology on larger substrates, enabling the 3DFabric® technology platform to be applied to artificial intelligence and high-speed computing. In terms of advanced packaging technology, TSMC has successfully certified the InFO_PoP technology for advanced N3 chips and power management ICs (PMICs), achieving higher efficiency and lower power consumption in mobile devices.

To continuously reduce product defects, enhance process controls, facilitate early detection of abnormalities and prevent quality problems in general, Q&R collaborates with other operational entities to establish and continuously improve real-time defense systems using advanced statistical methods and quality tools. Q&R and the Company's fabs have also worked together on enhancements for automotive product quality improvement, including design rule implementation and migration to Automotive Quality System 2.0. This covers process capability requirements to tighten in-line and wafer acceptance testing in fabs and the handling of maverick wafers and lots. Q&R also provides dedicated resources for field/line return analysis and timely physical failure analysis (PFA) for process improvement to meet automotive customers' stringent defective parts per million (DPPM) requirements.

To stimulate employee problem-solving and develop related quality systems and methodologies, Q&R held several company-wide symposia and training programs on total quality excellence (TQE) in 2023. Q&R has successfully completed a series of digital transformation development tasks, applied in areas such as raw material management, statistical process control (SPC), metrology, and laboratory analysis. By leveraging advanced digital technologies and platforms, TSMC achieved its digital transformation goals. Moreover, during the initial phase of overseas expansion, Q&R addressed the challenges of personnel training, remote management, and support through digital transformation. This has made the successful practice of globalized management possible, achieving zero distance and zero time difference in quality management across global fabs. In 2024, Q&R will continue to promote the development of quality management methods and professional training and apply artificial intelligence technologies to consolidate TSMC comprehensive competitive advantages in this industry.

Q&R is committed to quality excellence, responsible supply chain, green manufacturing, and sustainable management practices. Q&R has established a state-of-the-art chemical lab responsible for monitoring raw material quality, assisting R&D organizations in the breakthrough of cutting-edge materials, and improving the yield of products and processes. In addition, Q&R and its chemical lab also assist the supply chain in material innovation, guiding suppliers to ensure compliance with international regulation for carcinogenic, mutagenic and reprotoxic (CMR) substances and to classify risky materials and carry out test sampling. In addition, Q&R applies best known methods based on professional expertise and collaborates with the materials supply chain management division to build a resilient raw material supply chain. Even in the face of pandemic restrictions, geopolitical tensions and material shortages, TSMC successfully expanded existing material production capacity with suppliers, established new production lines of verified quality at overseas bases, and developed sufficient qualified second sources. All the efforts above have supported TSMC in navigating through geo-political turmoil to achieve continuous growth and optimize the balance between quality and capacity.

Furthermore, Q&R assisted suppliers in developing recycling projects, enabling several recycled chemicals to achieve an electronic grade quality level. Q&R also collaborated with operations to conduct engineering verification for recycled chemicals, meeting TSMC's quality requirements and environmentally friendly sustainability goals. Q&R is also committed to the continual improvement of local supply chains and developing local talent. In 2023, TSMC again collaborated with the Semiconductor Equipment and Materials International (SEMI) to hold the fifth Strategic Materials Conference (SMC) in Taiwan and invited domestic and overbroad members to share the most advanced material technology, to motivate talented personnel and elevate the international competitiveness of the local supply chain. In addition, in 2023 Q&R collaborated with a professional consulting firm to participate in the Electronic Specialty Gases & Systems Conference in Arizona, U.S., to discuss the importance of technical goals and quality management with the local supply chain. This provided an opportunity to attract talented local individuals who share the same values.

TSMC fully supports continuous improvement programs to strengthen the work culture, improve product quality and production efficiency, reduce production costs, and enhance customer satisfaction. These programs encourage colleagues to strive for excellence, drive cross-departmental observation and learning, and enhance their innovative, problem-solving abilities – all traits that greatly contribute to achieving a win-win outcome of honing TSMC's competitive edge and building customer satisfaction. To continue and uphold the excellent quality culture of TSMC, Q&R began offering quality culture courses for new employees in 2022. These courses help new employees establish the correct quality values and accelerate their integration and adaptation to their roles. In addition to internal cross-organizational learning and exchange, TSMC participates in the Taiwan Continuous Improvement Award (TCIA) to promote the development of other local industries by sharing its experience, and to enhance the problem-solving and innovation ability of its colleagues by observing improvement methods of other industries. In 2023, TSMC's outstanding performance was recognized with seven gold, two silver and two "best improvement and innovation" awards. Meanwhile, Q&R encouraged local material suppliers to participate in the TCIA for ability and quality culture enhancement, and in 2023, they won a total of nine medals: one gold, seven silver, and one bronze. Additionally, Q&R added quality courses to TSMC's Supply Online 360, sharing basic concepts of quality tools, problem-solving, and continuous improvement, as well as explaining the necessary procedures for management changes and evaluation of new materials.

Thanks to qualification in technology development, real-time defense systems and innovative applications in semiconductor manufacturing services, as well as its continuous quality improvement culture, TSMC had no product recalls initiated by customers due to safety concerns in 2023. Meanwhile, a third-party audit verified the effectiveness of the Company's quality management systems in compliance with IATF 16949: 2016 and IECQ QC 080000: 2017 requirements. In 2023, TSMC's backend fabs also continually passed the certification of American National Standards Institute ANSI/ESD (electrostatic discharge) S20.20 standard. Regular customer feedback indicates that products shipped from TSMC have consistently met or exceeded all field quality and reliability requirements. In these ways, TSMC helps customers improve time-to-market delivery and competitiveness with excellent, reliable products for the five major growth markets the Company serves: HPC, smartphones, IoT, automotive, and digital consumer electronics.

5.4 Customer Trust

5.4.1 Customers

TSMC's customers make a wide variety of products that deliver excellent performance across the semiconductor industry. They include fabless semiconductor companies, system companies, and integrated device manufacturers such as Advanced Micro Devices, Inc., Amazon Web Services, Inc., Broadcom Inc., Infineon Technologies AG, Intel Corporation, MediaTek Inc., NVIDIA Corporation, NXP Semiconductors N.V., Qualcomm Incorporated, Sony Semiconductor Solutions Corporation and many more worldwide.

Customer Service

TSMC is committed to providing customers with the highest quality service. The Company believes that excellent service is key to maintaining and improving customer satisfaction, solidifying existing customers, and attracting new customers. To this end, TSMC has established a dedicated customer service team to act as the primary contact window, facilitating seamless communication and coordination with customers in areas such as product design, mask making, wafer manufacturing, and 3DFabric® technology services, ensuring world-class service every step of the way. TSMC is committed to continuously improving customer satisfaction, earning customer trust, maintaining sales and profitability, and solidifying its role as a most reliable partner.

To improve customer interaction on a real-time basis, TSMC-Online offers a suite of web-based applications to provide more proactive customer service and support in design, engineering and logistics. Customers thus have 24-7 access to critical information. TSMC-Online facilitates design collaboration by maintaining data availability and accessibility and providing customers with accurate up-to-date information at each stage of the design process. Engineering collaboration focuses on wafer, and 3DFabric® processes, yield and wafer acceptance test analysis, as well as data quality and reliability. Logistics collaboration includes information on wafer fabrication, advanced packaging, testing, and transportation. In addition, customers can generate customized reports through TSMC-Online to meet their system automation needs.

Customer Satisfaction

To ensure customer satisfaction, TSMC must fully comprehend its customers' needs. To this end, the Company works with third-party consulting firms to conduct annual customer satisfaction surveys (ACSS) with the majority of existing customers, either via online surveys or in direct interviews. In addition to the survey, TSMC also conducts quarterly business/technical reviews (QBR/QTR) with customers to collect their feedback on a regular basis. Customer feedback is routinely reviewed, analyzed and used to develop appropriate improvement plans, all in all becoming an integral part of the customer satisfaction process. Through surveys and feedback reviews, TSMC is able to closely interact with customers, provide better services, and enhance the quality of customer collaboration.

Customer Information Protection

TSMC complies with applicable regulations and international standards to protect customer information and has received ISO 27001 international information security certification. In addition, relevant proprietary information protection policies and standard work processes are also established to ensure only authorized personnel can access the engineering and production data of any specific customer.

Customers Accounting for at Least 10% of Annual Consolidated Net Revenue in 2023 and 2022

Unit: NT$ thousands

Customer	2023			2022		
	Net Revenue	As % of 2023Total Net Revenue	Relation to TSMC	Net Revenue	As % of 2022 Total Net Revenue	Relation to TSMC
Customer A	546,550,925	25%	None	529,649,200	23%	None
Customer B	241,152,357	11%	None	N/A	N/A	None
Others	1,374,032,559	64%	-	1,734,242,092	77%	-
Total Net Revenue	2,161,735,841	100%	-	2,263,891,292	100%	-

- Reason for increase or decrease: The changes of sales amount and percentage were mainly due to customer product demand change.

5.4.2 Open Innovation Platform® Initiative

At TSMC, innovation has always been an exciting challenge. Competition continues to intensify in the face of increasing industry consolidation and the commoditization of technology at more mature, conventional levels, and thus semiconductor companies must find ways to keep innovating in order to survive and prosper. One way to promote innovation is through active collaboration with external partners. At TSMC this is known as Open Innovation®, an "outside in" approach to complement traditional "inside out" methods. TSMC has chosen this path to stimulate innovation via its OIP initiative, which is a key part of the TSMC Grand Alliance.

The OIP initiative is a comprehensive design technology infrastructure that encompasses all critical IC implementation areas to lower design barriers and improve design cycle times and first-time silicon success rates. OIP promotes the speedy implementation of innovation within the semiconductor design community and its ecosystem partners using TSMC's process technology and OIP partners' solutions in design implementation and backend services.

Crucial to OIP are ecosystem interfaces and collaborative components initiated and supported by TSMC to empower innovation throughout the supply chain and, in turn, drive the creation and sharing of new revenue and profits. TSMC's active accuracy assurance (AAA) initiative is key to OIP, providing the precision and quality required by the ecosystem interfaces and collaborative components.

TSMC's Open Innovation® model brings together the creative thinking of customers and partners under the common goal of shortening each of the following: design time, time to volume production, time to market and, ultimately, time to revenue. The model features:

- The foundry segment's earliest and most comprehensive electronic design automation (EDA) certification program, delivering timely design tool enhancement required by new process technologies.
- The foundry segment's largest, most comprehensive and most robust silicon-proven IP (intellectual properties) and library portfolio.
- Alliances that enable semiconductor designing in the Cloud for the benefit of scalability, agility and flexibility to meet various customer requirements for work models.
- Alliances that provide design services to support customer demand regarding resources and capabilities, depending on the scope and various requirements in the semiconductor design stages and value chain.
- Alliances to enable customers' system-level designs for integrating multiple chips/chiplets in 3D stacking and advanced packaging.
- Participants consisting of 14 EDA partners, seven Cloud partners, 39 IP partners, 26 design center alliance (DCA) partners, nine value chain aggregator (VCA) partners and 22 partners in the new 3DFabric® Alliance.
- A partner management portal to facilitate communication with ecosystem partners for efficient business productivity – designed with a highly intuitive interface and accessible via a direct link from TSMC-Online.

TSMC and partners work together proactively and engage much earlier and deeper than ever before in order to address the mounting design challenges of advanced technology nodes. Through this early and intensive collaboration, OIP is able to deliver the needed design infrastructure with timely enhancement of EDA tools, early availability of critical IPs and quality design services when customers need them. Taking full advantage of the process technologies once they reach production-ready maturity is critical to customer success. Hence, this helps achieve DTCO among TSMC process technologies, OIP design solutions and customer product designs.

The 2023 annual OIP Ecosystem Forum in North America demonstrated how TSMC and its ecosystem partners jointly develop design solutions on top of TSMC's advanced technologies through OIP. At the forum, TSMC made key presentations on its comprehensive 3nm technology family that continues the full-node PPA scaling trend, together with the offering of high-density and high-performance libraries and design solutions to support smartphone and high performance computing (HPC) design applications. The Company also made presentations on the readiness of analog cells that can help boost analog IP yields and analog design productivity, with the design solutions to enable EDA and design flow automation to support analog design migration. In response to the rising demand for more complex system level designs, TSMC collaborates with 3DFabric® alliance partners of 3DIC expertise in EDA, IP, DCA/VCA, memory, substrate, outsourcing semiconductor assembly testing (OSAT) and testing to provide 3D chip stacking and 2.5D advanced packaging design solutions, together with EDA tools compliant to the 3Dblox open standard to facilitate integration of multiple chips/chiplets in system-level designs using 3DFabric® technology services which include TSMC-SoIC®, InFO and CoWoS®. The availability of the aforementioned design ecosystem solutions helps customers successfully pursue opportunities in all major markets: HPC, smartphones, the Internet of Things (IoT), automotive and digital consumer electronics.

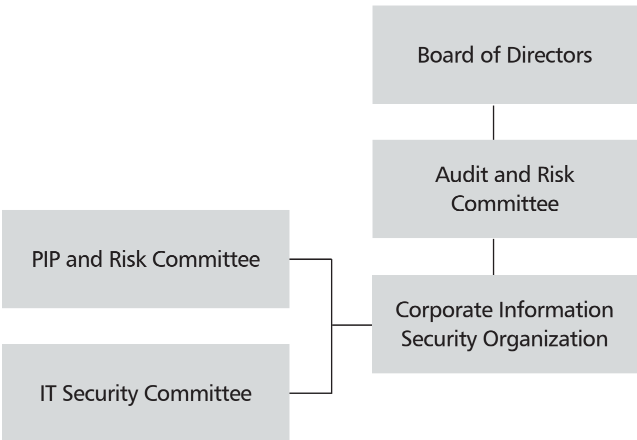
5.5 Information Security Management

5.5.1 Information Security Policy and Organization

TSMC is committed to information security and confidentiality protection for its customers, shareholders, and partners. To this end, the Company has formulated, implemented and regularly updated rigorous cybersecurity policies, procedures and measures as reflected in TSMC's Information Security Declaration.

In 2022, following the regulations of the Financial Supervisory Commission of Taiwan, TSMC appointed J.K Lin, Senior Vice President of Information Technology, Material and Risk Management, to take on the addition role of Chief Information Security Officer (CISO). Mr. Lin is responsible for the overall planning and coordination of Company resources, communicating on information security policies and directions. TSMC has established a dedicated corporate information security (CIS) organization, led by Director James Tu, to be responsible for the implementation, planning, monitoring, and management of information security. TSMC has also established the PIP and Risk Committee and the IT Security Committee to cooperate with the Company's information technology and related organizations to strengthen corporate information security protection and management mechanisms. Both committees are chaired by the CISO and comprise VP-level executives who meet regularly to review and deliberate on important information security policies as well as project implementation. Every six months, CIS executives report risk management measures to the Audit and Risk Committee, including global information security trends, corporate information security policies, plans, and implementation results. The chair of the Audit and Risk Committee also reports on the effectiveness of information security supervision and risk control measures to the Board of Directors.

Corporate Information Security Organization Structure



5.5.2 Information Security Management Strategy and Resources

To achieve TSMC's information security goals and maintain competitiveness, the corporate information security organization actively strengthens security and confidential information protection mechanisms. CIS sets clear policy, procedures and guidelines and continuously enhances the Company's management systems and implements comprehensive risk controls. In addition, CIS regularly performs information security risk assessments and sets priorities based on the impact and probability of a risk, as well as the cost of reducing such risk. CIS uses the plan-do-check-act (PDCA) methodology to continuously enhance multi-layer information security defenses and establish key performance indicators (KPIs) for information security. In 2023, TSMC invested in excess of NT$1 billion to strengthen information security, involving more than 500 employees for information security-related activities, with more than 1,000 external security personnel engaged in the physical aspects of information security services.

5.5.3 Information Security Incident Handling and Notification

TSMC has established enterprise risk management mechanisms and procedures to handle information security incidents. The mechanisms and procedures define relevant processes and measures for incident notification, designation of personnel responsible for handling material information security incidents, and assessment of losses suffered as well as additional measures needed, evaluation of information security risks to the Company's financial and operations, and proposed countermeasures to mitigate these risks. In 2023 and as of the date of this Annual Report, TSMC has not suffered any financial losses nor experienced any operational impact due to material information security incidents.

5.6 Human Capital

Human capital is TSMC's most treasured asset. The Company strives to provide employees with meaningful work, continuous learning, a safe and pleasant work environment that is both diverse and inclusive, and high-quality compensation and benefits. TSMC goes beyond this by actively encouraging employees to nurture and enjoy a healthy family life, develop personal interests, expand social participation, and, in general, live a happy life.

5.6.1 Human Rights Policy and Specific Actions

TSMC strongly believes that respecting human rights and promoting a decent work environment are vitally important. The Company is committed to supporting the following international human rights standards while complying with local laws in all operating locations, treating and respecting all personnel equally. The TSMC Human Rights Policy applies to the management team and all employees (those employed by TSMC and receiving wages or compensation), affiliated enterprises, suppliers, contractors, partners (including customers and communities), and other stakeholders committed to eliminating any human rights violations.

Management Principles

- Human Rights Governance Structure

TSMC has established a human rights governance structure with the Board of Directors at the highest level. The ESG Committee has established a cross-department human rights task force, encompassing Customer Service, Corporate Sustainability, Environmental Safety and Health, Human Resources, Information Technology, Corporate Information Security, Materials Management, Legal, Operations, Quality and Reliability, Research and Development and other functional organizations to systematically and effectively promote human rights management activities. In addition to regularly reporting progress to the ESG Steering Committee, the chairperson of the ESG Committee reports to The Nominating, Corporate Governance and Sustainability Committee under the Board of Directors on human rights management actions and implementation results.

- Due Diligence

TSMC follows the recommendations of the OECD Due Diligence Guidance for Responsible Business Conduct to carry out the Company's due diligence process. TSMC conducts the due diligence process by embedding responsible business practices into its policies and management systems, regularly identifying and assessing risks, implementing prevention and mitigation measures, and tracking mechanisms.

- Training and Advocacy

TSMC develops human rights protection training to establish awareness and develop a culture of respecting human rights. Through such training, the Company informs employees about human rights concepts and their importance, accessible grievance channels to all, and TSMC's measures for the management, prevention, and remediation of human rights violations.

- Grievance Channels

TSMC establishes robust grievance and communication channels and commits to protecting complainants. Potential human rights violations can be reported anonymously or through multiple communication mechanisms to provide concerns or suspected violations to TSMC, and the Company will initiate corresponding measures.

- Remediation

Once a human rights violation caused or contributed to by TSMC is identified, the Company will initiate a remediation mechanism based on the type of incident and, if necessary, cooperate with relevant stakeholders to prevent recurrence.

- Communication and Disclosure

TSMC identifies affected individuals on a case-by-case basis based on salient human rights issues to build a solid, trusting relationship, and listens to the voices of stakeholders through diverse, open, and two-way communication channels. The Company regularly discloses human rights management goals, actions, performance, and progress on the Company's ESG website, Sustainability Report, and Human Rights Report.

In 2023, the Company used the Responsible Business Alliance's Self-Assessment Questionnaire (SAQ) to identify the greatest risks regarding labor, health and safety, environment, and ethics matters and to formulate substantive actions and managerial response. The SAQ scores of each of TSMC's operating fabs were in the low risk range, defined as xx points or above.

TSMC conducted multiple human rights protection training courses in 2023 including plant safety and health, emergency response, first-aid personnel training, friendly workplace, etc. The total training hours are 156,595 hours, and a total of 70,576 employees have completed the training, accounting for 92% of employees. To further promote human rights, TSMC offered a course called "Understand TSMC Human Rights Policy, Create a Friendly Workplace, and Eliminate Sexual Harassment". 65,364 employees completed this training, and the passing rate of the post-training test was 100%.

TSMC abides by the rights granted to workers by laws and regulations and respects the freedom of collective consultation and assembly and association of all employees. The Company will not interfere or intervene with these activities. TSMC holds Silicon Garden meetings, aka Labor-Management meetings, on a regular basis, listens to employees' opinions and makes timely and appropriate responses through a diversified and comprehensive internal communication framework, in order to strengthen the communication between the Company's management team and employees and ensure harmonious employee relations.

5.6.2 Diversity and Inclusion

TSMC believes that a diverse management and talent structure contributes to the Company's competitive advantage and sustainable development. Through the implementation of the Diversity and Inclusion Statement, TSMC actively establishes an open management model, creates an inclusive working environment, and encourages people of varying skills and backgrounds to join the semiconductor sector, so that the industry can maximize the benefits of diverse talent resources.

To realize TSMC's People Vision and provide an inclusive workplace, TSMC has officially established three employee resource groups (ERGs), Women@tsmc, Global Family@tsmc and Accessibility@tsmc, to focus on the diversity areas of gender, race/nationality and disability since 2022-2023. In 2023, TSMC hosted the first Diversity and Inclusion Campaign, turning the Company's goals into concrete actions and promoting the innovative value of diversity and inclusion. TSMC has further expanded the scope of diversity and inclusion, planning learning structures and learning focus for different roles for all employees, aiming to support colleagues in understanding the subtleties of diversity and inclusion, including unconscious bias and how it is formed, jointly raising diverse and inclusive awareness.

5.6.3 Workforce Structure

At the end of 2023, TSMC had 76,478 employees worldwide, including 7,861 managers, 36,807 professionals, 9,235 assistants and 22,575 technicians. The following two tables summarize the makeup of TSMC's workforce and the female portion of management as of the end of February 2024:

Workforce Structure

		12/31/2022	12/31/2023	02/29/2024
Job	Managers	7,295	7,861	8,000
	Professionals	35,189	36,807	37,129
	Assistant Engineer/Clerical	8,665	9,235	9,284
	Technicians	21,941	22,575	22,620
Total		73,090	76,478	77,033
Gender	Male	65.6%	65.8%	65.9%
	Female	34.4%	34.2%	34.1%
Education	Ph.D.	3.8%	3.9%	3.9%
	Master's	47.2%	47.7%	47.9%
	Bachelor's	29.3%	29.5%	29.5%
	Other Higher Education	8.4%	8.0%	8.0%
	High School	11.3%	10.9%	10.9%
Average Age		35.7	36.2	36.2
Average Years of Service		8.3	8.7	8.8

Female Ratio in Management

	12/31/2022	12/31/2023	02/29/2024
Female Ratio in Junior Management	13.6%	14.3%	14.4%
Female Ratio in Senior Management	13.0%	13.7%	13.9%
Female Ratio in Top Management	6.1%	5.9%	5.9%

Note: Junior management positions include first-line managers; top management positions include vice presidents and higher as well as the CEO.

5.6.4 Recruitment

Sharing a common vision and values by the Company's employees is key to TSMC's growth and success. As for recruitment of new employees, the Company is committed to finding and hiring top-notch professionals in all positions. TSMC is an equal opportunity employer and practices open and fair recruitment. In addition to prioritizing integrity and ability as the primary conditions for employment, the Company also considers suitability for the position, evaluating all candidates equally regardless of race, gender, age, religion, nationality or political affiliation.

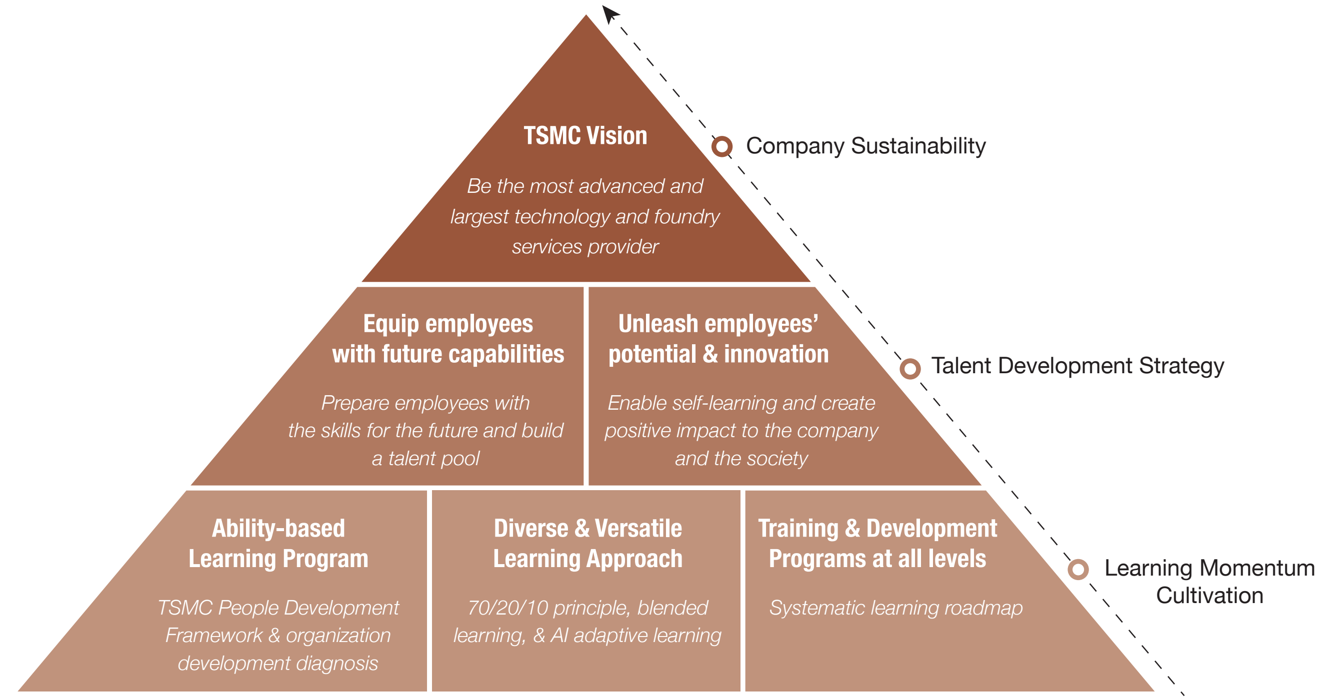
TSMC adheres to its core values and continues to move forward with a lofty vision, attracting the attention of young talents both in Taiwan and overseas. To ensure the talent it needs for the continuous growth, TSMC expanded its recruiting channels to attract top-notch professionals in all positions and employed over 6,000 employees worldwide in 2023.

5.6.5 Talent Development

Employees are TSMC's most important asset. In addition to creating a diverse and inclusive workplace that encourages employees to learn and develop their strengths, TSMC also attaches great importance to the early and continuous development of the capabilities of all employees. In this regard, the Company integrates internal and external resources, provides challenging, meaningful and interesting work in a world-class workplace and creates a continuous, diverse learning environment. In addition, the Company has initiated training and education procedures to ensure that the employees and the Company can grow together with "goals, plan and discipline" so as to become a force to uplift the society.

To pursue sustainable growth TSMC intends to expand global operations, and talent development is crucial to achieving this strategic goal. Therefore, the Company selects and cultivates talented employees based on the TSMC Talent Development Model to support sustainability and follows two strategies for talent development: equipping employees with future capabilities, i.e. preparing employees with the skills for the future and building a talent pool, and unleashing employees' potentials and innovation, i.e. encouraging and enabling self-learning and continuous innovation to create positive impacts on the Company and society. To this end, the Company initiates ability-based learning programs, focusing on the core traits of character (perseverance, resilience, initiative, innovation, judgment, broadness of mind and breadth/depth of knowledge), and further develop leadership, professional and general skills according to colleagues' different positions and professional, and the needs of Company's organization. At the same time, the Company uses a blended approach consisting of experiential learning (70%), feedback and guidance (20%), and education and training (10%). The Company also employs future AI adaptive learning, together with training and development programs at all levels, to comprehensively and systematically plan and develop the capabilities required by all employees. These approaches help cultivate learning momentum and support employees and the Company in achieving continuous growth and breakthroughs.

TSMC Talent Development Model



In 2023, TSMC conducted over more than 7,000 training sessions, more than 10,000 online courses, and provided over 6.53 million hours of training with a total in excess of 2.59 million participants. The average annual training time per employee grew to 85.4 hours, an increase of 23% over the previous year. TSMC training expense reached NT$887 million and the average training cost per employee was approximately NT$11,604, a 12 percent decrease from the previous year (Note).

5.6.6 Competitive Overall Compensation

In order to develop the most effective compensation strategies, TSMC reviews and selects benchmark companies annually and collects market information on compensation data of the whole industry for competitiveness analysis.

TSMC's compensation program includes a monthly salary, performance bonuses based on quarterly business results, and profit sharing based on annual results.

The purpose of the business performance bonus and profit sharing programs is to reward employee contributions appropriately, to encourage employees to work consistently toward ensuring TSMC's success, and to align employee interests with those of TSMC's shareholders so as to achieve win-wins for the Company, shareholders and employees alike. The Company determines the bonus and profit sharing amounts based on operating results and domestic industry practice. The amount and distribution of the employee bonuses are recommended by the Compensation and People Development Committee to the Board of Directors for approval. Individual rewards are based on each employee's job responsibility, contributions and performance.

A similar approach is used in TSMC's compensation programs at subsidiaries. In addition to providing employees with a locally competitive base salary, annual bonuses are granted as a part of total compensation, in line with local regulations, market practices and the overall operating performance of each subsidiary.

Note: In order to align the definition of training expenses with international market research information (as in *Training* magazine) to include total training spending, outside products and services, and training staff payroll, starting in 2022 the Company began including training staff payroll in annual training expenses. The change in the average training cost per employee in 2023 reflects the comprehensive impact of training manpower's business performance bonus and profit sharing and changes in the number of employees.

In addition to the competitive compensation described above, the Company approved and implemented a global employee stock purchase plan in 2022, which is available to all regular employees of TSMC and its wholly owned subsidiaries. Through this plan, employees are encouraged to participate in the Company's long-term success.

To strengthen the link between TSMC managers and shareholders' interests, the Company established corporate officer shareholding guidelines in 2020. The required holding value of TSMC shares by the chairman, CEO, and corporate officers is proportional to their annual base salary: 18 times for the chairman and CEO, nine times or three times for officers (three times is only applicable for officers hired in overseas) Officers shall fulfill the required value within three years of appointment and maintain the required value for the entire period of employment. Furthermore, to attract and retain corporate executives and other critical talent and to link their compensation with shareholder interests and environmental, social, governance (ESG) achievements, TSMC established employee restricted stock awards rules in 2021, 2022 and 2023.

5.6.7 Employee Benefit System Superior to Statute

TSMC offers employee benefits that are superior to those required by applicable statutes. In addition to twelve national holidays per year, seven memorial days are also designated as holidays. To alleviate traffic congestion during commuting hours, support family care needs, and create a diverse and inclusive workplace, the Company implemented a staggered commuting policy in 2023 and continuously optimized related flexible support. In order to support employees in practicing the Company's sustainable vision of "making society better," TSMC provides one day of volunteer leave per year since 2023. The Company provides employees with statuary labor insurance and national health insurance as well as comprehensive paid group insurance plans. Coverage includes life insurance and insurance for accidents, hospitalization, cancer, critical illness, maternity and international business travel. There are also various and unique employee self-paid group insurance plans available for employee family members. The group insurance coverage is extended to employees on approved unpaid leave. To better support new hires, TSMC offers one day of annual leave for every two months of service in the first year. Employees who need to take long leaves of absence for military service or severe injuries can also apply for unpaid leave, and then apply for reinstatement after the expiration of the period. In addition, TSMC provides pensions, financial assistance for emergencies, subsidies for marriage, childbirth and funerals, as well as discounts in designated shops.

In accordance with local laws and regulations, TSMC provides breastfeeding and breast milk collection rooms. To help employees balance their personal and work lives, TSMC not only offers parental leave but also provides a comprehensive leave management system. To further create a family-friendly workplace and support for TSMC employees' parenting needs, starting from October 1, 2023 the Company implemented the TSMC Childcare Benefit Program 2.0, to extend maternity leave for second birth from 12 to 16 weeks and third birth from 16 to 20 weeks. The maternity subsidy increased to a maximum of NT$20,000 (NT$10,000 from employee welfare committee and maximum NT$10,000 maternity insurance). TSMC has set up four onsite kindergartens for employees in Taiwan. In addition, a holiday STEAM (science, technology, engineering, art and math) campus has been organized for employees' children.

All TSMC facilities are equipped with 24-hour health centers, where healthcare management professionals and appointed onsite physicians provide quality services beyond those required legally. The health centers work with hospitals and employee assistance program service providers to offer comprehensive support for the emotional and physical well-being of employees. In addition to annual checkups for all employees, in 2023 TSMC began providing employees with five advanced checkup items upon completion of every five years of service. The Company encourages employees to exercise regularly by subsidizing 65 clubs, improving exercise facilities, and holding regular sports events to help employees find peers with similar sports interests. Also, to help employees balance their work and life, TSMC provides:

- Convenient onsite services and amenities such as in-fab cafeterias, convenience stores, and other services
- Comprehensive health management services, including in-fab clinic services, post health-exam follow-up activities, and employee assistance programs
- Diverse employee welfare programs, leisure and art events, hobby clubs, vibrant sports centers and onsite preschool services to meet employees' needs for childcare, festival bonuses and emergency subsidies if and when needed

Vacation and insurance policies at TSMC's overseas offices are designed to be in compliance with local regulations. In China, North America and Europe, TSMC provides more vacation days to employees than legally required. In overseas offices, TSMC offers a more comprehensive life and medical insurance than required by local regulations and customs.

5.6.8 Diverse Employee Recognition

TSMC sponsors various internal award programs to recognize employees for outstanding achievement, both individual and at a team level. With these award programs, TSMC aims to encourage continued employee development, which also enhances the Company's competitiveness.

The award programs include:

- TSMC Academy to recognize outstanding scientists and engineers whose individual technical capabilities have made significant contributions
- TSMC Excellent Labor Award to recognize technicians whose outstanding performances have made significant contributions
- Total Quality Excellence to recognize employees' continuous efforts in creating value at each fab
- Service Award to recognize and show appreciation of senior employees for their long-term commitment and dedication
- Excellent Instructor Award to praise the outstanding performance and contribution of internal instructors of training courses for employees

Apart from the recognitions above, there are function-wide awards dedicated to innovation, such as the Idea Forum, the Total Quality Excellence Award and the ESG Award, which recognize employee initiative and continuous implementation of innovative practices. In addition, TSMC encourages employees to participate in external talent activities and competitions. In 2023, distinguished TSMC employees continued to be recognized through a host of awards, such as the Model Labor Award, the Excellent Young Engineers Award, the Outstanding Engineer Award, the Taiwan Continuous Improvement Awards, the National Manager Excellence Award and the National Industrial Awards.

5.6.9 Employee Engagement

The Company encourages employees to maintain a healthy and well-balanced life while pursuing their career goals effectively. TSMC facilitates employee communication and provides employee caring, benefit, rewards and recognition programs.

Employee Communication

TSMC values employee communication and is committed to keeping communication channels open and transparent between managers and employees, and amongst peers. The Company is committed to ensuring that employees are able to communicate openly and share ideas and concerns with management regarding work conditions and management practices without fear of recrimination, reprisal, intimidation or harassment. TSMC makes continuous efforts to listen to employees and to facilitate mutual and timely employee communication, through multiple channels and platforms, which in turn fosters harmonious labor relations.

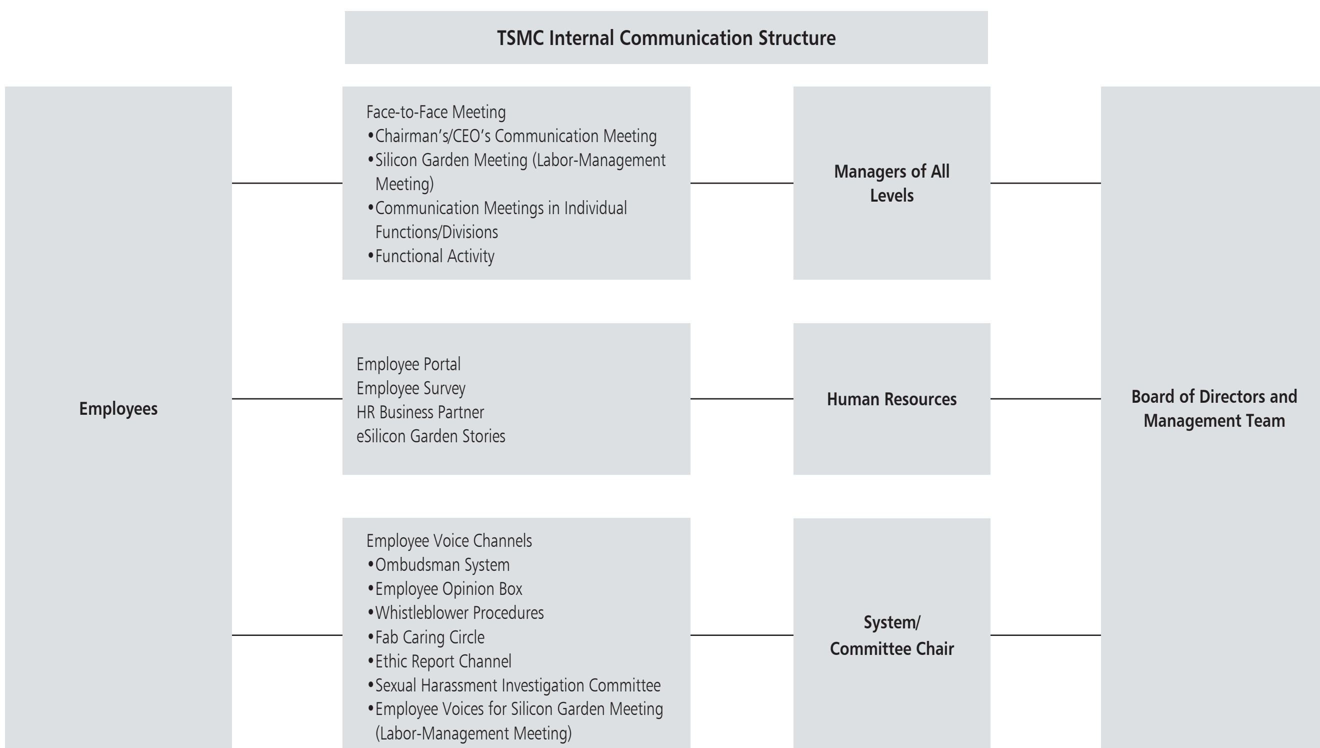
TSMC conducts biannual face-to-face CEO dialogue sessions in Hsinchu, Taichung, and Tainan, which allows the employees to make suggestions, express their thoughts and get direct feedback from the CEO. In addition, the Company has also enlarged the scope of the labor-management meeting, transforming it into the Silicon Garden Meeting, which helps all employees feel free to put forward their ideas so the Company can take appropriate action.

TSMC supports a host of various communication channels including:

- Communication meetings for various levels of managers and employees, e.g. the executives communication meeting, skip levels and communication meetings in individual functions/divisions
- Quarterly Silicon Garden meetings, aka Labor-Management meetings, to provide business updates and discuss issues of concern for employees
- The biennial employee survey on core values taken to understand the Company's implementation of core values and employee commitment
- The biennial global employee engagement survey taken to systematically understand the work experience of employees and to enhance employee engagement and sense of belonging in the Company

- Periodic employee pulse surveys and service satisfaction surveys given to selected employees with follow-up actions based on survey findings
- *myTSMC* employee portal, an internal website featuring talks by the Founder, the Chairman and the CEO, corporate messages, executive interviews, and other topics of interest to employees
- e*Silicon Garden Stories*, TSMC's newsletter providing real-time updates on major activities of the Company as well as inspirational content featuring outstanding teams or individuals
- Three channels for reporting complaints regarding managerial, financial, auditing, ethics and business conduct issues:
  – The whistleblower reporting system, administered by the Audit Committee
  – The irregular business conduct reporting system, administered by the Ethics Committee
  – The ombudsman system administered by a senior manager, appointed by the CEO
- The Employee Opinion Box, which provides an opportunity to submit suggestions or opinions regarding work and the work environment
- The Fab Caring Circle in each fab, which addresses issues related to employees' work and personal life – dedicated mainly to the Company's direct laborers
- The sexual harassment investigation committee, a channel dedicated to ensuring a work environment free from the threat of sexual harassment; the committee consists of three directors appointed by the CEO, one from human resources, one from legal affairs, and the third from another organization

Employee Communication Channels



During 2023 and as of the date of this Annual Report, TSMC has not incurred any labor-dispute related losses. However, the Company was fined for the following labor inspection results: NT$100,000 issued on 04/26/2023 for the extension of working hours combined with the regular working hours exceeding permitted limit (Labor Standards Act Article 32 Paragraph 2). NT$100,000, and NT$50,000 issued, respectively, on 05/19/2023 for the extension of working hours combined with the regular working hours exceeding permitted limit, and inadequate rest time of a minimum of 12 hours after the occurrence of an emergency or unexpected event (Labor Standards Act Article 32 Paragraph 2, and Paragraph 4). NT$300,000 issued on 08/07/2023 for the extension of working hours combined with the regular working hours exceeding permitted limit (Labor Standards Act Article 32 Paragraph 2). NT$350,000 issued on 08/18/2023 for the extension of working hours combined with the regular working hours exceeding permitted limit (Labor Standards Act Article 32 Paragraph 2). NT$150,000 issued on 09/26/2023 for the extension of working hours combined with the regular working hours exceeding permitted limit (Labor Standards Act Article 32 Paragraph 2). NT$150,000 issued on 10/03/2023 for the extension of working hours combined with the regular working hours exceeding permitted limit (Labor Standards Act Article 32 Paragraph 2). NT$400,000 issued on 02/07/2024 for the extension of working hours combined with the regular working hours exceeding permitted limit (Labor Standards Act Article 32 Paragraph 2).

The Company has reviewed its working hour management process and established indices to remind employees to apply for overtime payment on time and for mangers to respond to such applications efficiently and in a timely fashion, and to be more diligent about employee working hours as well as to strengthen communication about these matters and relevant policies.

5.6.10 Retention

In 2023, TSMC conducted its second global employee engagement survey (EES), based on High Performance Employee Experience Model (Note) to maintain comparability with 2021 EES data. The survey aimed to understand the strengths and opportunities for continuous improvement in employee experience at TSMC and to develop action plans that retain talent. The survey participants included global TSMC employees and its subsidiaries, except for VisEra due to its different industrial background. Overall, 65,123 employees participated in the survey, representing 89% of all TSMC employees.

Based on the survey results in 2023, TSMC is perceived by its employees as possessing strong competitiveness in the market, exhibiting agility in responding to market changes, and being adept at delivering innovative products and services that create value for its customers. TSMC will continue to enhance the following 3 aspects:

- Encourage colleagues to proactively share their ideas through an open management model in order to create a mutually respectful environment.
- Enhance colleagues' sense of belonging and achievement by unleashing their potential, allowing them to enjoy their work, continuously learn, and grow.
- Motivate and retain talent by providing more non-monetary rewards.

TSMC's turnover rate was 3.7% in 2023 compared to 6.7% in 2022, both within a healthy range of less than 10%.

5.6.11 Retirement Policy

TSMC established its statutory defined benefit plan and supervisory committee of labor retirement reserve according to the Labor Standards Act, and also set up its statutory defined contribution plan according to Labor Pension Act, which became effective starting July 1, 2005. For each region, TSMC also established pension plans according to local standards and regulations. The previously mentioned supervisory committee not only holds quarterly meetings but also supervises affairs in connection with labor's retirement reserve fund. To meet legal requirements for disclosure of financial reporting and ensure sufficient funding levels, TSMC makes contributions based statutory requirements and also engages an actuarial consulting firm to assess the valuation of the defined benefit plan. Please refer to page 45-47 of the attached financial report for details. Thanks to the Company's sound financial condition, it is able to ensure the future viability of employee retirement benefits and solid pension contributions and payments, which encourages employees to make long-term career plans with and further deepen their commitment to TSMC.

5.7 Material Contracts

TSMC is not currently a party to any material contracts, other than those entered into in the ordinary course of its business. The Company's "Significant Contingent Liabilities and Unrecognized Commitments" are disclosed in Annual Report section (II), Financial Statements, page 73.

Note: Based on Willis Towers Watson's "High Performance Employee Experience (HPEX) Model".

Fab 8

6 Financial Highlights & Analysis

TSMC's gross profit margin was 54.4% in 2023.

6.1 Financial Highlights

6.1.1 Condensed Balance Sheet

Condensed Balance Sheet from 2019 to 2023 (Consolidated)

Unit: NT$ thousands

Item \ Year	2019	2020	2021	2022	2023
Current Assets	822,613,914	1,092,185,308	1,607,072,907	2,052,896,744	2,194,032,910
Long-term Investments	30,172,039	27,728,208	29,384,701	68,927,920	129,442,117
Property, Plant and Equipment	1,352,377,405	1,555,589,120	1,975,118,704	2,693,836,970	3,064,474,984
Right-of-use Assets	17,232,402	27,728,382	32,734,537	41,914,136	40,424,830
Intangible Assets	20,653,028	25,768,179	26,821,697	25,999,155	22,766,744
Other Assets (Note 1)	21,756,244	31,712,208	54,370,909	81,203,953	81,229,630
Total Assets	2,264,805,032	2,760,711,405	3,725,503,455	4,964,778,878	5,532,371,215
Current Liabilities					
Before Distribution	590,735,701	617,151,048	739,503,358	944,226,817	913,583,316
After Distribution	655,561,652	681,976,999	810,811,904	1,015,535,363	1,004,345,564 (Note 2)
Noncurrent Liabilities	51,973,905	292,938,358	815,266,892	1,060,063,194	1,135,525,052
Total Liabilities					
Before Distribution	642,709,606	910,089,406	1,554,770,250	2,004,290,011	2,049,108,368
After Distribution	707,535,557	974,915,357	1,626,078,796	2,075,598,557	2,139,870,616 (Note 2)
Equity Attributable to Shareholders of the Parent					
Capital Stock	259,303,805	259,303,805	259,303,805	259,303,805	259,320,710
Capital Surplus	56,339,709	56,347,243	64,761,602	69,330,328	69,876,381
Retained Earnings					
Before Distribution	1,333,334,979	1,588,686,081	1,906,829,661	2,637,524,688	3,158,030,792
After Distribution	1,268,509,028	1,523,860,130	1,835,521,115	2,566,216,142	3,067,268,544 (Note 2)
Others	(27,568,369)	(54,679,873)	(62,608,515)	(20,505,626)	(28,314,256)
Equity Attributable to Shareholders of the Parent					
Before Distribution	1,621,410,124	1,849,657,256	2,168,286,553	2,945,653,195	3,458,913,627
After Distribution	1,556,584,173	1,784,831,305	2,096,978,007	2,874,344,649	3,368,151,379 (Note 2)
Noncontrolling Interests	685,302	964,743	2,446,652	14,835,672	24,349,220
Total Equity					
Before Distribution	1,622,095,426	1,850,621,999	2,170,733,205	2,960,488,867	3,483,262,847
After Distribution	1,557,269,475	1,785,796,048	2,099,424,659	2,889,180,321 (Note 2)	3,392,500,599 (Note 2)

Note 1: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.
Note 2: The amount was approved by Board of Directors on February 6, 2024.

Condensed Balance Sheet from 2019 to 2023 (Unconsolidated)

Unit: NT$ thousands

Item \ Year	2019	2020	2021	2022	2023
Current Assets	355,118,125	580,949,248	783,205,937	1,118,550,389	1,185,788,564
Long-term Investments	559,380,999	565,432,338	603,640,944	728,961,910	1,095,656,042
Property, Plant and Equipment	1,310,900,634	1,511,784,556	1,889,970,529	2,432,675,050	2,453,465,322
Right-of-use Assets	15,030,020	25,184,827	30,123,052	39,051,427	37,872,705
Intangible Assets	16,271,444	21,733,597	22,910,400	21,456,104	17,684,064
Other Assets (Note 1)	18,774,850	28,420,547	48,644,283	81,724,184	83,612,587
Total Assets	2,275,476,072	2,733,505,113	3,378,495,145	4,422,419,064	4,874,079,284
Current Liabilities					
Before Distribution	605,540,547	680,529,735	704,833,370	899,245,600	763,602,324
After Distribution	670,366,498	745,355,686	776,141,916	970,554,146	854,364,572 (Note 2)
Noncurrent Liabilities	48,525,401	203,318,122	505,375,222	577,520,269	651,563,333
Total Liabilities					
Before Distribution	654,065,948	883,847,857	1,210,208,592	1,476,765,869	1,415,165,657
After Distribution	718,891,899	948,673,808	1,281,517,138	1,548,074,415	1,505,927,905 (Note 2)
Equity					
Capital Stock	259,303,805	259,303,805	259,303,805	259,303,805	259,320,710
Capital Surplus	56,339,709	56,347,243	64,761,602	69,330,328	69,876,381
Retained Earnings					
Before Distribution	1,333,334,979	1,588,686,081	1,906,829,661	2,637,524,688	3,158,030,792
After Distribution	1,268,509,028	1,523,860,130	1,835,521,115	2,566,216,142	3,067,268,544 (Note 2)
Others	(27,568,369)	(54,679,873)	(62,608,515)	(20,505,626)	(28,314,256)
Total Equity					
Before Distribution	1,621,410,124	1,849,657,256	2,168,286,553	2,945,653,195	3,458,913,627
After Distribution	1,556,584,173	1,784,831,305	2,096,978,007	2,874,344,649	3,368,151,379 (Note 2)

Note 1: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.
Note 2: The amount was approved by Board of Directors on February 6, 2024.

6.1.2 Condensed Statement of Comprehensive Income

Condensed Statement of Comprehensive Income from 2019 to 2023 (Consolidated)

Unit: NT$ thousands (Except EPS: NT$)

Item \ Year	2019	2020	2021	2022	2023
Net Revenue	1,069,985,448	1,339,254,811	1,587,415,037	2,263,891,292	2,161,735,841
Gross Profit	492,701,896	711,130,120	819,537,266	1,348,354,806	1,175,110,628
Income from Operations	372,701,090	566,783,698	649,980,897	1,121,278,851	921,465,606
Non-operating Income and Expenses	17,144,246	17,993,482	13,145,417	22,911,867	57,705,718
Income before Income Tax	389,845,336	584,777,180	663,126,314	1,144,190,718	979,171,324
Net Income	345,343,809	518,158,082	597,073,134	1,016,900,515	837,767,517
Other Comprehensive Income (Loss) for the Year, Net of Income Tax	(11,823,562)	(30,321,802)	(7,619,456)	42,430,165	(8,813,644)
Total Comprehensive Income for the Year	333,520,247	487,836,280	589,453,678	1,059,330,680	828,953,873
Net Income Attributable to:					
Shareholders of the Parent	345,263,668	517,885,387	596,540,013	1,016,530,249	838,497,664
Noncontrolling Interests	80,141	272,695	533,121	370,266	(730,147)
Total Comprehensive Income Attributable to:					
Shareholders of the Parent	333,440,460	487,563,478	588,918,059	1,059,124,890	830,509,542
Noncontrolling Interests	79,787	272,802	535,619	205,790	(1,555,669)
Basic/Diluted Earnings Per Share (Note)	13.32	19.97	23.01	39.20	32.34

Note: Based on weighted average shares and diluted weighted average shares outstanding in each year.

Condensed Statement of Comprehensive Income from 2019 to 2023(Unconsolidated)

Unit: NT$ thousands (Except EPS: NT$)

Item \ Year	2019	2020	2021	2022	2023
Net Revenue	1,059,646,793	1,314,793,013	1,574,745,881	2,252,320,561	2,153,285,095
Gross Profit	480,143,141	682,004,023	788,629,037	1,300,392,888	1,130,624,931
Income from Operations	365,923,992	543,465,507	629,632,836	1,090,746,689	907,372,855
Non-operating Income and Expenses	22,821,227	39,153,435	30,869,355	49,927,127	70,398,381
Income before Income Tax	388,745,219	582,618,942	660,502,191	1,140,673,816	977,771,236
Net Income	345,263,668	517,885,387	596,540,013	1,016,530,249	838,497,664
Other Comprehensive Income (Loss) for the Year, Net of Income Tax	(11,823,208)	(30,321,909)	(7,621,954)	42,594,641	(7,988,122)
Total Comprehensive Income for the Year	333,440,460	487,563,478	588,918,059	1,059,124,890	830,509,542
Basic/Diluted Earnings Per Share (Note)	13.32	19.97	23.01	39.20	32.34

Note: Based on weighted average shares and diluted weighted average shares outstanding in each year.

6.1.3 Financial Analysis

Financial Analysis from 2019 to 2023 (Consolidated)

		2019	2020	2021	2022	2023
Capital Structure Analysis	Debts Ratio (%)	28.38	32.97	41.73	40.37	37.04
	Long-term Fund to Property, Plant and Equipment (%)	123.79	137.80	151.18	149.25	150.72
Liquidity Analysis	Current Ratio (%)	139.25	176.97	217.32	217.42	240.16
	Quick Ratio (%)	124.92	154.35	190.61	193.65	212.46
	Times Interest Earned (Times)	120.92	281.95	123.48	80.18	54.08
Operating Performance Analysis	Average Collection Turnover (Times)	7.95	9.35	9.20	10.52	9.96
	Days Sales Outstanding	45.91	39.04	39.67	34.70	36.65
	Average Inventory Turnover (Times)	6.20	5.70	4.65	4.42	4.18
	Average Inventory Turnover (Days)	58.87	64.04	78.49	82.58	87.32
	Average Payment Turnover (Times)	15.48	15.45	17.10	17.40	17.34
	Property, Plant and Equipment Turnover (Times)	0.88	0.92	0.90	0.97	0.75
	Total Assets Turnover (Times)	0.49	0.53	0.49	0.52	0.41
Profitability Analysis	Return on Total Assets (%)	15.99	20.69	18.56	23.64	16.14
	Return on Equity attributable to Shareholders of the Parent (%)	20.94	29.84	29.69	39.76	26.18
	Operating Income to Paid-in Capital Ratio (%)	143.73	218.58	250.66	432.42	355.34
	Pre-tax Income to Paid-in Capital Ratio (%)	150.34	225.52	255.73	441.25	377.59
	Net Margin (%)	32.28	38.69	37.61	44.92	38.75
	Basic Earnings Per Share (NT$)	13.32	19.97	23.01	39.20	32.34
	Diluted Earnings Per Share (NT$)	13.32	19.97	23.01	39.20	32.34
Cash Flow	Cash Flow Ratio (%)	104.13	133.30	150.39	170.57	135.94
	Cash Flow Adequacy Ratio (%)	106.60	100.74	97.84	101.82	100.63
	Cash Flow Reinvestment Ratio (%)	8.45	11.24	13.56	17.25	10.84
Leverage	Operating Leverage	2.41	1.97	2.05	1.77	2.03
	Financial Leverage	1.01	1.00	1.01	1.01	1.01
	Advanced Technologies (7-nanometer and below) Percentage of Wafer Sales (%)	27	41	50	53	58
	Sales Growth (%)	3.73	25.17	18.53	42.61	-4.51
	Net Income Growth (%)	-1.67	50.00	15.19	70.40	-17.51

Analysis of deviation of 2023 vs. 2022 over 20%:
1. Times interest earned decreased by 33% mainly due to increase in interest expenses.
2. Property, Plant and Equipment Turnover (Times) decreased by 23% mainly due to increase in average Property, Plant and Equipment.
3. Total Assets Turnover (Times) decreased by 21% mainly due to increase in average total assets.
4. Return on Total Assets decreased by 32% mainly due to increase in average total assets and decrease in net income.
5. Return on Equity attributable to Shareholders of the Parent decreased by 34% mainly due to increase in average Equity attributable to Shareholders of the Parent and decrease in net income.
6. Cash Flow Ratio decreased by 20% as a result of decrease in cash generated by operating activities.
7. Cash Flow Reinvestment Ratio decreased by 37% as a result of decrease in cash generated by operating activities.

* Glossary

1. Capital Structure Analysis
   (1) Debt Ratio = Total Liabilities / Total Assets
   (2) Long-term Fund to Property, Plant and Equipment Ratio = (Shareholders' Equity + Noncurrent Liabilities) / Net Property, Plant and Equipment

2. Liquidity Analysis
   (1) Current Ratio = Current Assets / Current Liabilities
   (2) Quick Ratio = (Current Assets - Inventories - Prepaid Expenses) / Current Liabilities
   (3) Times Interest Earned = Earnings before Interest and Taxes / Interest Expenses

3. Operating Performance Analysis
   (1) Average Collection Turnover = Net Sales / Average Trade Receivables (including Accounts Receivable and Notes Receivable originated from operation)
   (2) Days Sales Outstanding = 365 / Average Collection Turnover
   (3) Average Inventory Turnover = Cost of Sales / Average Inventory
   (4) Average Inventory Turnover Days = 365 / Average Inventory Turnover
   (5) Average Payment Turnover = Cost of Sales / Average Trade Payables (including Accounts Payable and Notes Payable originated from operation)
   (6) Property, Plant and Equipment Turnover = Net Sales / Average Net Property, Plant and Equipment
   (7) Total Assets Turnover = Net Sales / Average Total Assets

4. Profitability Analysis
   (1) Return on Total Assets = (Net Income + Interest Expenses * (1 - Effective Tax Rate)) / Average Total Assets
   (2) Return on Equity Attributable to Shareholders of the Parent = Net Income Attributable to Shareholders of the Parent / Average Equity Attributable to Shareholders of the Parent
   (3) Operating Income to Paid-in Capital Ratio = Operating Income / Paid-in Capital
   (4) Pre-tax Income to Paid-in Capital Ratio = Income before Tax / Paid-in Capital
   (5) Net Margin = Net Income / Net Sales
   (6) Earnings Per Share = (Net Income Attributable to Shareholders of the Parent - Preferred Stock Dividend) / Weighted Average Number of Shares Outstanding

5. Cash Flow
   (1) Cash Flow Ratio = Net Cash Provided by Operating Activities / Current Liabilities
   (2) Cash Flow Adequacy Ratio = Five-year Sum of Cash from Operations / Five-year Sum of Capital Expenditures, Inventory Additions, and Cash Dividend
   (3) Cash Flow Reinvestment Ratio = (Cash Provided by Operating Activities - Cash Dividends) / (Gross Property, Plant and Equipment + Long-term Investments + Other Noncurrent Assets + Working Capital)

6. Leverage
   (1) Operating Leverage = (Net Sales - Variable Cost) / Income from Operations
   (2) Financial Leverage = Income from Operations / (Income from Operations - Interest Expenses)

Financial Analysis from 2019 to 2023 (Unconsolidated)

		2019	2020	2021	2022	2023
Capital Structure Analysis	Debt Ratio (%)	28.74	32.33	35.82	33.39	29.03
	Long-term Fund to Property, Plant and Equipment Ratio (%)	127.39	135.80	141.47	144.83	167.54
Liquidity Analysis	Current Ratio (%)	58.64	85.37	111.12	124.39	155.29
	Quick Ratio (%)	45.81	65.93	84.33	100.95	123.93
	Times Interest Earned (Times)	122.80	330.85	261.58	277.57	183.38
Operating Performance Analysis	Average Collection Turnover (Times)	8.32	9.80	9.80	11.28	10.65
	Days Sales Outstanding	43.88	37.24	37.23	32.35	34.26
	Average Inventory Turnover (Times)	6.65	6.13	4.98	4.84	4.58
	Average Inventory Turnover Days	54.91	59.58	73.23	75.43	79.69
	Average Payment Turnover (Times)	15.10	14.89	17.06	17.68	17.55
	Property, Plant and Equipment Turnover (Times)	0.91	0.93	0.93	1.04	0.88
	Total Assets Turnover (Times)	0.49	0.52	0.52	0.58	0.46
Profitability Analysis	Return on Total Assets (%)	16.00	20.74	19.59	26.14	18.12
	Return on Equity (%)	20.94	29.84	29.69	39.76	26.18
	Operating Income to Paid-in Capital Ratio (%)	141.12	209.59	242.82	420.64	349.90
	Pre-tax Income to Paid-in Capital Ratio (%)	149.92	224.69	254.72	439.90	377.05
	Net Margin (%)	32.58	39.39	37.88	45.13	38.94
	Basic Earnings Per Share (NT$)	13.32	19.97	23.01	39.20	32.34
	Diluted Earnings Per Share (NT$)	13.32	19.97	23.01	39.20	32.34
Cash Flow	Cash Flow Ratio (%)	98.00	114.56	153.79	173.41	158.12
	Cash Flow Adequacy Ratio (%)	106.59	99.88	97.62	104.90	108.97
	Cash Flow Reinvestment Ratio (%)	8.23	10.93	14.20	18.23	11.39
Leverage	Operating Leverage	2.46	2.04	2.11	1.81	2.07
	Financial Leverage	1.01	1.00	1.00	1.00	1.01

Analysis of deviation of 2023 vs. 2022 over 20%:
1. Current Ratio increased by 25% mainly due to decrease in Current Liability.
2. Quick Ratio increased by 23% mainly due to decrease in Current Liability.
3. Times interest earned decreased by 34% mainly due to increase in interest expenses.
4. Return on Total Assets Turnover (Times) decreased by 20% mainly due to increase in average total assets.
5. Return on Total Assets decreased by 31% mainly due to increase in average total assets and decrease in net income.
6. Return on Equity decreased by 34% mainly due to increase in average equity and decrease in net income.
7. Cash Flow Reinvestment Ratio decreased by 38% as a result of decrease in cash generated by operating activities.

* Glossary
1. Capital Structure Analysis
   (1) Debt Ratio = Total Liabilities / Total Assets
   (2) Long-term Fund to Property, Plant and Equipment Ratio = (Shareholders' Equity + Noncurrent Liabilities) / Net Property, Plant and Equipment

2. Liquidity Analysis
   (1) Current Ratio = Current Assets / Current Liabilities
   (2) Quick Ratio = (Current Assets - Inventories - Prepaid Expenses) / Current Liabilities
   (3) Times Interest Earned = Earnings before Interest and Taxes / Interest Expenses

3. Operating Performance Analysis
   (1) Average Collection Turnover = Net Sales / Average Trade Receivables(including Accounts Receivable and Notes Receivable originated from operation)
   (2) Days Sales Outstanding = 365 / Average Collection Turnover
   (3) Average Inventory Turnover = Cost of Sales / Average Inventory
   (4) Average Inventory Turnover Days = 365 / Average Inventory Turnover
   (5) Average Payment Turnover = Cost of Sales / Average Trade Payables(including Accounts Payable and Notes Payable originated from operation)
   (6) Property, Plant and Equipment Turnover = Net Sales / Average Net Property, Plant and Equipment
   (7) Total Assets Turnover = Net Sales / Average Total Assets

4. Profitability Analysis
   (1) Return on Total Assets = (Net Income + Interest Expenses * (1 - Effective Tax Rate)) / Average Total Assets
   (2) Return on Equity = Net Income / Average Shareholders' Equity
   (3) Operating Income to Paid-in Capital Ratio = Operating Income / Paid-in Capital
   (4) Pre-tax Income to Paid-in Capital Ratio = Income before Tax / Paid-in Capital
   (5) Net Margin = Net Income / Net Sales
   (6) Earnings Per Share = (Net Income - Preferred Stock Dividend) / Weighted Average Number of Shares Outstanding

5. Cash Flow
   (1) Cash Flow Ratio = Net Cash Provided by Operating Activities / Current Liabilities
   (2) Cash Flow Adequacy Ratio = Five-year Sum of Cash from Operations / Five-year Sum of Capital Expenditures, Inventory Additions, and Cash Dividend
   (3) Cash Flow Reinvestment Ratio = (Cash Provided by Operating Activities - Cash Dividends) / (Gross Property, Plant and Equipment + Long-term Investments + Other Noncurrent Assets + Working Capital)

6. Leverage
   (1) Operating Leverage = (Net Sales - Variable Cost) / Income from Operations
   (2) Financial Leverage = Income from Operations / (Income from Operations - Interest Expenses)

6.1.4 Auditors' Opinions from 2019 to 2023

Year	CPA	Audit Opinion
2019	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2020	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2021	Mei Yen Chiang, Shang Chih Lin	An Unmodified Opinion
2022	Mei Yen Chiang, Shang Chih Lin	An Unmodified Opinion
2023	Shih-Tsung Wu, Shang Chih Lin	An Unmodified Opinion

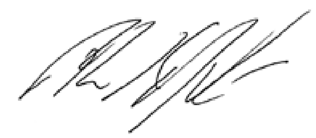
Deloitte & Touche
20F, No. 100, Songren Rd., Xinyi Dist., Taipei, Taiwan, R.O.C.
Tel: 886-2-2725-9988

6.1.5 Audit and Risk Committee's Review Report

The Board of Directors has prepared the Company's 2023 Business Report, Financial Statements, and proposal for allocation of quarterly earnings. The CPA firm of Deloitte & Touche was retained to audit TSMC's Financial Statements and has issued an audit report relating to the Financial Statements. The Business Report, Financial Statements, and quarterly earnings allocation proposal have been reviewed and determined to be correct and accurate by the Audit and Risk Committee members of Taiwan Semiconductor Manufacturing Company Limited. According to relevant requirements of the Securities and Exchange Act and the Company Law, we hereby submit this report.

Taiwan Semiconductor Manufacturing Company Limited

Chairman of the Audit and Risk Committee: Sir Peter L. Bonfield



February 6, 2024

6.1.6 Financial Difficulties

The Company should disclose the financial impact to the Company if the Company and its affiliated companies have incurred any financial or cash flow difficulties in 2022 and as of the date of this Annual Report: None.

6.1.7 Consolidated Financial Statements and Independent Auditors' Report along with Parent Company Only Financial Statements and Independent Auditors' Report

Please refer to Annual Report section (II), Financial Statements.

6.2 Financial Status and Operating Results

6.2.1 Financial Status

Consolidated

Unit: NT$ thousands

Item	2023	2022	Difference	%
Current Assets	2,194,032,910	2,052,896,744	141,136,166	7%
Long-term Investments (Note 1)	129,442,117	68,927,920	60,514,197	88%
Property, Plant and Equipment	3,064,474,984	2,693,836,970	370,638,014	14%
Right-of-use Assets	40,424,830	41,914,136	(1,489,306)	-4%
Intangible Assets	22,766,744	25,999,155	(3,232,411)	-12%
Other Assets (Note 2)	81,229,630	81,203,953	25,677	0%
Total Assets	5,532,371,215	4,964,778,878	567,592,337	11%
Current Liabilities	913,583,316	944,226,817	(30,643,501)	-3%
Noncurrent Liabilities	1,135,525,052	1,060,063,194	75,461,858	7%
Total Liabilities	2,049,108,368	2,004,290,011	44,818,357	2%
Capital Stock	259,320,710	259,303,805	16,905	0%
Capital Surplus	69,876,381	69,330,328	546,053	1%
Retained Earnings	3,158,030,792	2,637,524,688	520,506,104	20%
Others Equity	(28,314,256)	(20,505,626)	(7,808,630)	-38%
Equity Attributable to Shareholders of the Parent	3,458,913,627	2,945,653,195	513,260,432	17%
Total Equity	3,483,262,847	2,960,488,867	522,773,980	18%

Note 1: Long-term investments consist of noncurrent financial assets at fair value through profit and loss, noncurrent financial assets at fair value through other comprehensive income, noncurrent financial assets at amortized cost, and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.

- Analysis of Deviation over 20%

Increase in Long-term Investments: The increase was mainly due to increase in financial assets at amortized cost and noncurrent financial assets at fair value through profit and loss.
Increase in Retained Earnings: The increase was mainly due to net income of 2023, partially offset by distribution of earnings.
Decrease in Others Equity: The decrease was mainly due to currency exchange loss arising from translation of foreign operations in 2023.

- Major Impact on Financial Position

The above deviations had no major impact on TSMC's financial position.

- Future Plan on Financial Position: Not applicable.

Unconsolidated

Unit: NT$ thousands

Item	2023	2022	Difference	%
Current Assets	1,185,788,564	1,118,550,389	67,238,175	6%
Long-term Investments (Note 1)	1,095,656,042	728,961,910	366,694,132	50%
Property, Plant and Equipment	2,453,465,322	2,432,675,050	20,790,272	1%
Right-of-use Assets	37,872,705	39,051,427	(1,178,722)	-3%
Intangible Assets	17,684,064	21,456,104	(3,772,040)	-18%
Other Assets (Note 2)	83,612,587	81,724,184	1,888,403	2%
Total Assets	4,874,079,284	4,422,419,064	451,660,220	10%
Current Liabilities	763,602,324	899,245,600	(135,643,276)	-15%
Noncurrent Liabilities	651,563,333	577,520,269	74,043,064	13%
Total Liabilities	1,415,165,657	1,476,765,869	(61,600,212)	-4%
Capital Stock	259,320,710	259,303,805	16,905	0%
Capital Surplus	69,876,381	69,330,328	546,053	1%
Retained Earnings	3,158,030,792	2,637,524,688	520,506,104	20%
Others	(28,314,256)	(20,505,626)	(7,808,630)	-38%
Total Equity	3,458,913,627	2,945,653,195	513,260,432	17%

Note 1: Long-term investments consist of noncurrent financial assets at fair value through other comprehensive income, and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.

- Analysis of Deviation over 20%

Increase in Long-term Investments: The increase was mainly due to increase in investments accounted for using equity method.
Increase in Retained Earnings: The increase was mainly due to net income of 2023, partially offset by distribution of earnings.
Decrease in Others Equity: The decrease was mainly due to currency exchange loss arising from translation of foreign operations in 2023.

- Major Impact on Financial Position

The above deviations had no major impact on TSMC's financial position.

- Future Plan on Financial Position: Not applicable.

6.2.2 Financial Performance

Consolidated

Unit: NT$ thousands

Item	2023	2022	Difference	%
Net Revenue	2,161,735,841	2,263,891,292	(102,155,451)	-5%
Cost of Revenue	986,625,213	915,536,486	71,088,727	8%
Gross Profit	1,175,110,628	1,348,354,806	(173,244,178)	-13%
Operating Expenses	253,833,716	226,707,552	27,126,164	12%
Other Operating Income and Expenses, Net	188,694	(368,403)	557,097	NM
Income from Operations	921,465,606	1,121,278,851	(199,813,245)	-18%
Non-operating Income and Expenses	57,705,718	22,911,867	34,793,851	152%
Income before Income Tax	979,171,324	1,144,190,718	(165,019,394)	-14%
Income Tax Expenses	141,403,807	127,290,203	14,113,604	11%
Net Income	837,767,517	1,016,900,515	(179,132,998)	-18%
Other Comprehensive Gain (Loss), Net of Income Tax	(8,813,644)	42,430,165	(51,243,809)	-121%
Total Comprehensive Income for the Year	828,953,873	1,059,330,680	(230,376,807)	-22%
Total Net Income Attributable to Shareholders of the Parent	838,497,664	1,016,530,249	(178,032,585)	-18%
Total Comprehensive Income Attributable to Shareholders of the Parent	830,509,542	1,059,124,890	(228,615,348)	-22%

- Analysis of Deviation over 20%

Increase in other Operating Income and Expenses, Net: The increase was mainly due to a net gain on disposal of property, plant and equipment in 2023.
Increase in Non-operating Income and Expenses: The increase was mainly due to higher interest income in 2023.
Decrease in Other Comprehensive Gain (Loss), Net of Income Tax: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2023.
Decrease in Total Comprehensive Income for the Year and Total Comprehensive Income Attributable to Shareholders of the Parent: The decrease was mainly due to lower net income in 2023.

- Sales Volume Forecast and Related Information

For additional details, please refer to "1. Letter to Shareholders".

- Major Impact on Financial Performance

The above deviations had no major impact on TSMC's financial performance.

- Future Plan on Financial Performance: Not applicable.

Unconsolidated

Unit: NT$ thousands

Item	2023	2022	Difference	%
Net Revenue	2,153,285,095	2,252,320,561	(99,035,466)	-4%
Cost of Revenue	1,022,660,164	951,927,673	70,732,491	7%
Gross Profit	1,130,624,931	1,300,392,888	(169,767,957)	-13%
Operating Expenses	223,733,531	209,637,924	14,095,607	7%
Other Operating Income and Expenses, Net	481,455	(8,275)	489,730	NM
Income from Operations	907,372,855	1,090,746,689	(183,373,834)	-17%
Non-operating Income and Expenses	70,398,381	49,927,127	20,471,254	41%
Income before Income Tax	977,771,236	1,140,673,816	(162,902,580)	-14%
Income Tax Expenses	139,273,572	124,143,567	15,130,005	12%
Net Income	838,497,664	1,016,530,249	(178,032,585)	-18%
Other Comprehensive Gain (Loss), Net of Income Tax	(7,988,122)	42,594,641	(50,582,763)	-119%
Total Comprehensive Income for the Year	830,509,542	1,059,124,890	(228,615,348)	-22%

- Analysis of Deviation over 20%

Increase in other Operating Income and Expenses, Net: The increase was mainly due to a net gain on disposal of property, plant and equipment in 2023.
Increase in Non-operating Income and Expenses: The increase was mainly due to higher interest income and share of profits of subsidiaries and associates in 2023.
Decrease in Other Comprehensive Gain (Loss), Net of Income Tax: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2023.
Decrease in Total Comprehensive Income for the Year: The decrease was mainly due to lower net income in 2023.

- Sales Volume Forecast and Related Information

For additional details, please refer to "1. Letter to Shareholders".

- Major Impact on Financial Performance

The above deviations had no major impact on TSMC's financial performance.

- Future Plan on Financial Performance: Not applicable.

6.2.3 Cash Flow

Consolidated

Unit: NT$ thousands

Cash Balance 12/31/2022	Net Cash Provided by Operating Activities in 2023	Net Cash Used in Investing Activities in 2023	Net Cash Generated by Financing Activities in 2023	Effect of Exchange Rate Changes on Cash and Cash Equivalents in 2023	Cash Balance 12/31/2023	Remedy for Liquidity Shortfall	
						Investment Plan	Financing Plan
1,342,814,083	1,241,967,347	(906,120,596)	(204,894,252)	(8,338,829)	1,465,427,753	None	None

- Analysis of Cash Flow

NT$1,242.0 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT$906.1 billion net cash used in investing activities: primarily for capital expenditures.

NT$204.9 billion net cash used in financing activities: mainly for cash dividend payment, partially offset by issuance of corporate bonds.

- Remedial Actions for Liquidity Shortfall

As a result of positive operating cash flows and cash on-hand, remedial actions are not required.

- Cash Flow Projection for Next Year: Not applicable.

Unconsolidated

Unit: NT$ thousands

Cash Balance 12/31/2022	Net Cash Provided by Operating Activities in 2023	Net Cash Used in Investing Activities in 2023	Net Cash Used in Financing Activities in 2023	Cash Balance 12/31/2023	Remedy for Liquidity Shortfall	
					Investment Plan	Financing Plan
628,875,897	1,207,082,903	(588,128,653)	(529,126,435)	718,703,712	None	None

- Analysis of Cash Flow

NT$1,207.1 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT$588.1 billion net cash used in investing activities: primarily for capital expenditures.

NT$529.1 billion net cash used in financing activities: mainly for investment in subsidiaries and cash dividend payment, partially offset by issuance of corporate bonds and hedges of net investments in foreign operations.

- Remedial Actions for Liquidity Shortfall

As a result of positive operating cash flows and cash on-hand, remedial actions are not required.

- Cash Flow Projection for Next Year: Not applicable.

6.2.4 Recent Years Major Capital Expenditures and Impact on Financial and Business

Unit: NT$ thousands

Plan	Actual or Planned Source of Capital	Total Amount for 2023 and 2022	Actual Use of Capital	
			2023	2022
Production Facilities, R&D and Production Equipment	Cash flow generated from operations and issuance of corporate bonds	2,010,767,157	938,456,321	1,072,310,836
Others	Cash flow generated from operations	21,721,798	11,360,504	10,361,294
Total		2,032,488,955	949,816,825	1,082,672,130

Based on capital expenditures listed above, TSMC's annual production capacity increased by approximately 0.8 million 12-inch equivalent wafers in 2023.

6.2.5 Long-term Equity Investment Policy and Results

TSMC's long-term equity investments, accounted for using the equity method, were all made for strategic purposes. In 2023, the gains from these investments amounted to NT$4,655,098 thousand on a consolidated basis, down from the previous year mainly due to decreases in product demand. In the future, TSMC's long-term equity investments, accounted for using the equity method, will continue to focus on strategic purposes through prudent assessments.

6.3 Risk Management

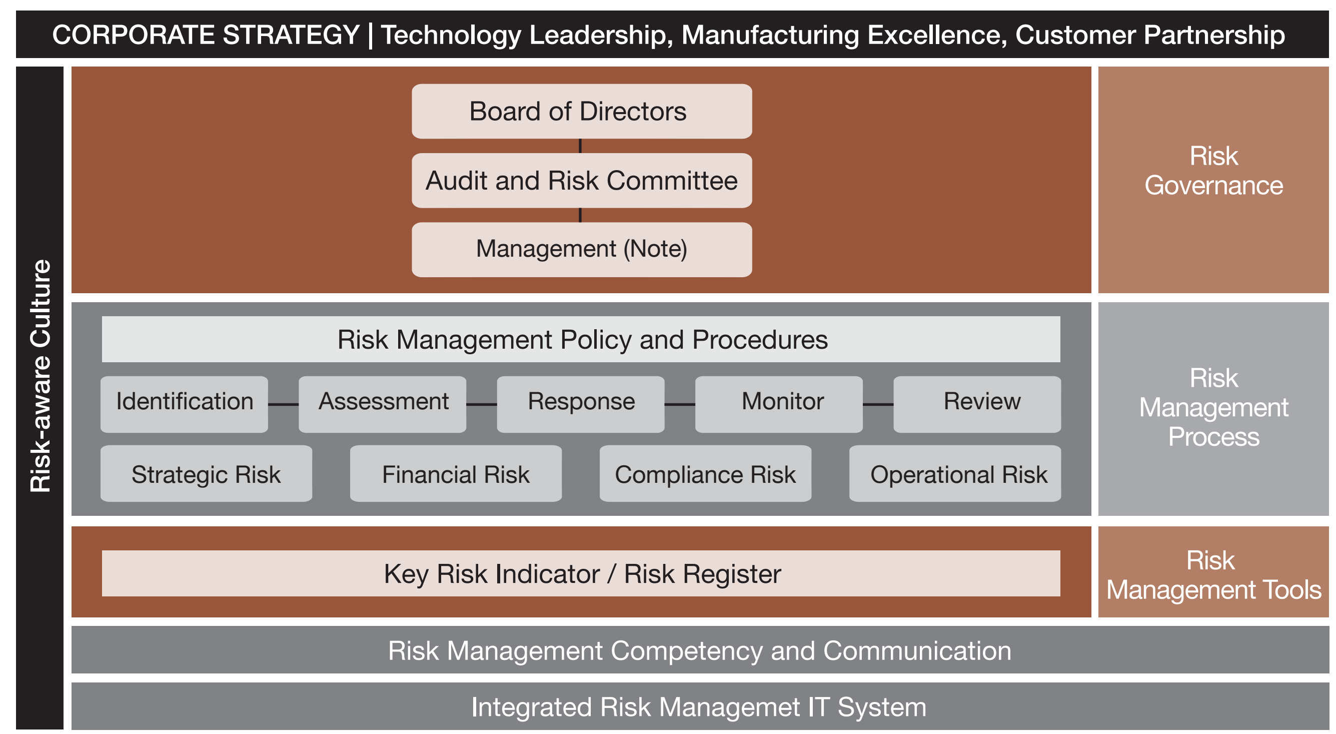
6.3.1 Risk Management Overview

Risk Management Policy and Framework

TSMC adopts a balanced risk-reward approach to risk management to optimize business returns while considering the holistic impact on corporate sustainability. TSMC's risk management policy, approved by the Board of Directors and signed by the Chairman, affirms the commitment to proactive and robust risk management system in assisting TSMC in making well-considered, risk-based decisions that fulfill the corporate vision and deliver sustainable value to TSMC and its stakeholders.

Adhering closely to the ISO 31000: 2018 Risk Management System and the Committee of Sponsoring Organizations of the Treadway Commission (COSO)'s Enterprise Risk Management – Integrated Framework, TSMC's enterprise risk management (ERM) framework was established to provide a systematic approach to risk management. It outlines the risk governance structure, the management process that integrates business operations, and tools that facilitate the monitoring of risks, as well as a formalized training and communication program in building risk competency and fostering a risk-aware culture, to assist the management in making informed risk-based decisions while implementing business strategies.

- **Enterprise Risk Management Framework**



Note: Includes the Risk Management Steering Committee, Risk Management Executive Council, Risk Management Taskforces, Central Crisis Command Center and Crisis Management Team

Risk Appetite and Risk Management Scope

TSMC has defined its risk appetite in statements that outline the nature and extent of risks that TSMC is willing to take in pursuit of its business goals:

- Risk taken should be carefully evaluated, commensurate with rewards and be in line with the Company's strategic, investment, financial and corporate objectives.
- Risk considerations are an integral part of business operations and managed within the risk tolerance (risk indicators) of the divisions, of relevant functional units and of the Company itself.
- The Company will not invest or participate in any business activities that exceed its risk tolerance. Specifically, the Company does not safety related breaches or lapses, non-compliance with laws and regulations, or illegal acts such as fraud, bribery and corruption.

Following a five-step risk management process – identification, assessment, response, monitoring and review, risks assessments are performed by key functional units to form an enterprise-level risk map and mitigation plans, which are presented to the Audit and Risk Committee. This process is supported by ongoing education and awareness efforts in fostering a risk-aware culture and building risk competencies. TSMC recognizes that its systems and processes provide reasonable but not absolute assurance and hence continually strives to improve its ability to manage and respond to risks and opportunities that remain relevant and effective.

• TSMC's Key Risks

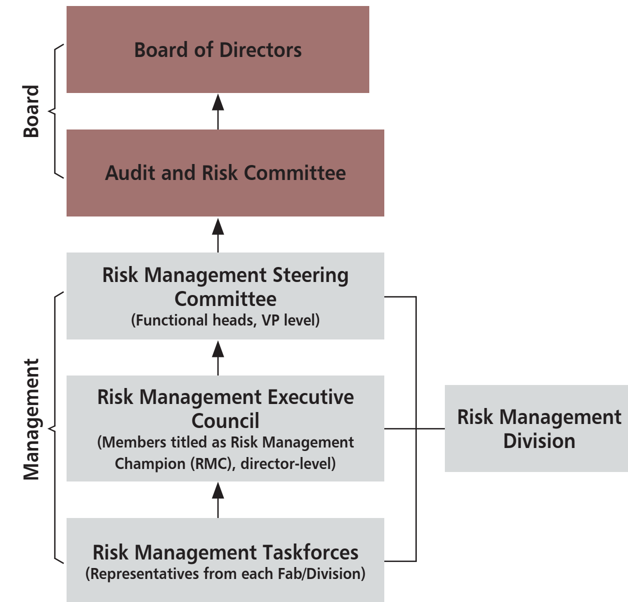
Strategic Risks	Operational Risks
•Industry developments •Changes in technology •Decrease in demand and average selling price •Competition •Investment and capacity expansion	•Natural and man-made disasters •Project management, construction of new fabs •Sales concentration •Purchasing concentration •Intellectual property rights •Mergers and acquisitions •IT security •Recruiting quality personnel •Future R&D plans and expected R&D spending •Change in corporate reputation and impact on the Company's crisis management •Change in management
Financial Risks	
•Economic risks including interest rate fluctuation, foreign exchange volatility, inflation, and amendments to tax regulations or implementation of new tax laws •External financing •High-risk or highly leveraged investments; lending, endorsements, and guarantees for other parties; and financial derivative transactions •Impairment charges	
Compliance Risks	
•Changes in the government policies and regulatory environment •Litigation and non-litigation matters •Non-compliance with export control, environmental and climate change related laws, regulations and accords, and failure to timely obtain requisite approvals necessary for conducting business	

Risk Management Governance Structure

Risk management at TSMC involves both the Board of Directors and management in an effort to embed sound risk management practices in business decisions and operations across the Company. The Board of Directors is responsible for the governance of risk and has authorized the Audit and Risk Committee to review TSMC's ERM framework. At the managerial level, risk management governance structure includes Risk Management Steering Committee, Risk Management Executive Council, taskforces and the risk management division.

Assisting the Audit and Risk Committee in establishing and overseeing a proactive and effective risk management system, the risk management division works with each function and fab in applying the ERM framework to assess and mitigate risks throughout TSMC by monitoring, implementing risk related policies and guidelines, as well as taking initiatives to support the implementation of ERM framework. Every six months, the risk management division reports to the Audit and Risk Committee on TSMC's key risks and mitigation efforts. The Audit and Risk Committee's chairperson then reports to the Board of Directors on the current risk profile and risk mitigation measures being taken.

• Risk Management Governance Structure



Risk management is a responsibility shared by both management and employees. All employees are required to be competent and accountable for managing risks related to their area of responsibility with clear risk ownership. TSMC Risk Management Academy is set up with the aim to equip and raise risk competencies for all levels of employees, including Board of Directors and management in support of an effective risk-aware culture embedding risk management as part of performance appraisal process promotes risk accountability and ownership. The roles and responsibilities of the risk management governance structure are defined as below:

Risk Management Steering Committee

- Advises the Board in determining overall risk appetite, tolerance, strategy and resource allocation, taking into account current and prospective macroeconomic, technological, regulatory, environmental and social developments and trends.
- Reviews and oversees the applicability and performances of the risk management framework, policy and procedures.
- Provides advice and assurance to the Board by adopting a holistic view of the key risks that TSMC is exposed to and approves the prioritization of risk mitigations.
- Sets the tone toward risk management from the top, provides sponsorship to initiatives and activities to nurture the desired risk culture, awareness and capabilities of effectively and sufficiently managing key risks and new type of risks, including clarifying risk ownership.
- Ensures that risk management is incorporated into strategic business development and operational planning, day-to-day management and decision making.
- Advises the Board on proposed transactions to address strategic risks and capitalize on opportunities.

Risk Management Executive Council

- Identifies potential and emerging risks that may impact TSMC in achieving its objectives and/or the continued effectiveness and efficiency of its business operations.
- Conducts risk assessments, defines mitigation plans, including incident management plans, provides sponsorship and allocates sufficient resources to enable timely and effective mitigation.
- Leads and drives cross-functional taskforces, meetings or other activities to ensure that risks are adequately and effectively mitigated, including collaboration with risk management division and various other parties.
- Defines key risk indicators (KRIs) to proactively monitor risk dynamics and respond in a timely and effective manner.
- Builds a risk-aware culture and raises risk competency in fabs and divisions, including but not limited to training, exercises and continuous improvements.
- Defines and facilitates action plans based on root cause analysis to prevent reoccurrences of major incidents, high-risk events and major findings raised from internal and external reviews.
- Reports to the risk management steering committee on the progress, effectiveness, and lessons learned, and implements the decisions made by the committee.

Risk Management Taskforce

- Identifies and assesses potential risks and threats that may prevent TSMC from achieving its business objectives and deploys appropriate mitigation measures.
- Plans and executes risk prevention and mitigation in accordance with various scenarios.
- Organizes and/or participates in cross-functional meetings, in addressing risks that span multiple disciplines or divisions/fabs.
- Participates in the implementation and execution of risk management initiatives and activities.
- Reviews the investigation of major incidents, high-risk events and major findings raised from internal and external checks for division. Monitors the effectiveness of action plans.

Risk Management Division

- Assists the Board in establishing and overseeing a proactive and effective mechanism of risk management and business continuity, including risk appetite and tolerance, risk strategy and management framework, policy, and procedures.
- Strengthens risk culture, awareness, and risk management capabilities through continuous trainings, communications and awareness programs.
- Identifies and analyzes the sources and categories of risks to the Company and regularly reviews their relevance.
- Facilitates risk management committees and risk owners in the implementation of risk management activities and initiatives to identify and manage risks, including the review of mitigation plans, business continuity, crisis and incident management plans; reviews the effectiveness of risk management activities through documented reports, management discussions and meetings.
- Coordinates cross-department and cross-functional interaction and communication of risk management operations and decisions, including implementing decisions of Risk Management Steering Committee.
- Consults with management, consultants and peers on best practices and standards for continuous improvement and benchmarking.
- Prepares reports to stakeholders that may be required from time to time by regulators, government agencies, insurers/brokers and customers, including an annual report on the implementation of Company's risk management system.

Crisis Management and Business Continuity Management

TSMC is committed to maintaining operational resilience and business continuity by following standards that enable the Company to respond effectively to business disruption. The Company is cognizant of the major risks of natural and man-made disasters, including earthquakes, flooding, typhoons, droughts, tsunamis, sandstorms, wildfires, volcanic eruptions, fire, gas/chemical leakage, pandemic, cyberattacks, supply chain disruption, geopolitical tension, sabotage, failure of critical facilities and equipment, and shortages in the supply of utilities, such as water, electricity and natural gas that could disrupt operations.

To mitigate the operational impact of crisis events, the risk management division implements pre-crisis risk assessment, response procedures and recovery plans. Exercises and drills are also conducted to validate emergency responses, crisis management, business continuity plans to enhance operational preparedness. In major incidents or crisis events, the crisis management guidelines are followed. The Central Crisis Command Centre (C4), headed by the CEO and comprised of senior executives across key functions, provides guidance and decision-making to ensure a constant readiness-to-respond capability, including timely responses and communication to key stakeholders.

6.3.2 Strategic Risks

Risks Associated with Changes in Technology and Industry

- Industry Developments

The electronics industries and semiconductor market are cyclical and subject to significant and often rapid fluctuations in product demand, which could impact TSMC's semiconductor foundry business. Variations in customer order levels may result in volatility in the Company's revenue and earnings.

From time to time, the electronics and semiconductor industries have experienced significant and occasionally prolonged periods of downturns and overcapacity. Because TSMC is, and will continue to be, dependent on the demand of electronics and semiconductor companies for its services, periods of downturns and overcapacity in the general electronics and semiconductor industries could lead to reduced demand for overall semiconductor foundry services, including TSMC's services. If TSMC is not able take appropriate actions, such as reducing its costs to sufficiently offset declines in demand, the Company's revenue, margins and earnings will likely suffer during periods of downturns and overcapacity.

- Changes in Technology

The semiconductor industry and its technologies are constantly changing. TSMC competes by developing process technologies using increasingly advanced nodes and manufacturing products with more functions. The Company also competes by developing new derivative technologies. If TSMC does not anticipate these changes in technologies and rapidly develop new and innovative technologies, or if the Company's competitors unforeseeably gain sudden access to additional technologies, TSMC may not be able to provide foundry services on competitive terms. For example, the global surge in the development of artificial intelligence (AI) has had a significant impact on customer demand for advanced semiconductor chips and the market dynamics in TSMC's industry; thus, TSMC's ability to continuously develop relevant technologies, products and services to meet these customer needs will be critical for the Company to effectively compete in this space. TSMC also believes that the effective use of AI in its internal operations is important to its long-term success. As the AI technologies are rapidly evolving, if TSMC is unable to deploy new AI technologies in its internal operations as effectively as its competitors, it may hurt the Company's competitive position. In addition, TSMC's customers have significantly decreased the time in which their products or services are launched into the market. If TSMC is unable to meet these shorter product time-to-market, it risks losing these customers. These factors have also been intensified by the shift of the global technology market to consumer driven products, such as smartphones, and increasing competition and concentration of customers (all further discussed among these risk factors).

Also, the uncertainty and instability inherent in advanced technologies impose challenges for achieving expected product quality and product yield. If TSMC fails to maintain quality, it may result in loss of revenue and additional cost, as well as loss of business or customer trust. If TSMC is unable to overcome the above factors, it may become less competitive and its revenue may decline significantly.

Regarding the response measures for the above-mentioned risks, please refer to "2.2.4 TSMC Position, Differentiation and Strategy" on page 19-21 of this Annual Report.

- IT Security

Even though TSMC has established a comprehensive internet and computing security network, the Company cannot guarantee that its computing systems which control or maintain vital corporate functions, such as manufacturing operations and enterprise accounting, would be completely immune to crippling cyberattacks. In the event of a serious cyberattack, TSMC's systems may lose important corporate data or its production lines may be shut down pending the resolution of such attack. Major cyberattacks could also lead to loss or divulgence of trade secrets and other sensitive information, such as proprietary information of its customers and other stakeholders and personal information of its employees. While TSMC seeks to continuously review and assess its cybersecurity policies and procedures to ensure their adequacy and effectiveness, it can't guarantee that it will not be susceptible to new and emerging risks and attacks in the evolving landscape of cybersecurity threats. For example, as AI continues to evolve, cyber-attackers could also use AI to develop malicious codes and sophisticated phishing attempts.

Malicious hackers may also try to introduce computer viruses, corrupted software or ransomware into TSMC's network systems to disrupt its operations, blackmail the Company to regain control of its computing systems, or spy on it for sensitive information. These attacks may result in TSMC having to pay damages for its delayed or disrupted orders or incur significant expenses in implementing remedial and improvement measures to further enhance its cybersecurity network, and may also expose the Company to significant legal liabilities arising from or related to legal proceedings or regulatory investigations associated with such breaches.

TSMC has experienced in the past, and may in the future be subject to attacks by malicious software. TSMC has implemented and continually updated rigorous cybersecurity measures to prevent and minimize harm caused by such attacks. Such measures include establishing advanced portable virus scanning tools and new fab tool virus scanning including internal computer scanning to protect fab equipment, strengthening GIGAFAB® network architecture and network controls to prevent computer viruses from spreading among tools and fabs, installing advanced malware defense solutions for critical computers, building a defense shield in the Cloud, including new Cloud solution architecture to secure internet access, and enhancing Cloud solutions and public website security policy and framework, adopting advanced solutions against distributed denial-of-service attacks, introducing new technology for data protection, enhancing and certifying office computer security compliance, improving email phishing defense and implementing employee awareness testing. TSMC also established an integrated and automatic security operation platform, enabled the automation of cybersecurity event detection and response, enhanced internal security assessment automation, conducted external red team testing and practiced responses to ransomware attacks. For supply chain risk reduction, through collaboration, TSMC helps major suppliers improve their security, shares best practices at industry security events, and conducts supplier security onsite audits. Moreover, TSMC has collaborated with the Semiconductor Equipment and Materials Institute (SEMI) to set up a Semiconductor Cybersecurity Committee to promote security standards (SEMI E187) as well as security assessment methodology for improving the resilience of the semiconductor supply chain, an action that was recognized by a 2023 SEMI International

Standards award. While these ongoing enhancements further improve Company's cybersecurity defense solutions, there can be no assurance that the Company is immune to cyberattacks.

In addition, TSMC employs certain third-party service providers for itself and its affiliates worldwide with whom it needs to share highly sensitive and confidential information to enable them to provide the relevant services. While TSMC requires such third-party service providers to strictly fulfill the confidentiality and/or internet security requirements in its service agreements with them, there is no assurance that each of them will comply with such obligations. Moreover, such third-party service providers may also be susceptible to cyberattacks. If TSMC or its service providers are not able to timely resolve the respective technical difficulties caused by such cyberattacks, or ensure the integrity and availability of its data (and data belonging to its customers and other third parties) or maintain control of its or its service providers' computing systems, the Company's commitments to its customers and other stakeholders may be materially impaired and its results of operations, financial condition, prospects and reputation may also be materially and adversely affected.

Risks Associated with Decrease in Demand and Average Selling Price

A vast majority of the Company's revenue is derived from customers who use TSMC's products in high performance computing ("HPC"), smartphones, IoT, automotive, and digital consumer electronics. Any deterioration in or a slowdown in the growth of such end markets resulting in a substantial decrease in the demand for overall global semiconductor foundry services, including TSMC's products and services, could adversely affect the Company's revenue. Further, semiconductor manufacturing facilities require substantial investment to construct and are largely fixed cost assets once they are in operation. Because the Company owns most of its manufacturing capacities, a significant portion of its operating costs is fixed. In general, these costs do not decline when customer demand or TSMC's capacity utilization rates drop, and thus declines in customer demand, among other factors, may significantly decrease TSMC's margins. Conversely, as product demand rises and factory utilization increases, the fixed costs are spread over increased output, which can improve TSMC's margins. In addition, the historical trend of declining average selling prices ("ASP") of end-use applications places downward pressure on the prices of the components that go into such applications. Decreases in the ASP of end use applications may increase pricing pressure on components produced by us, which, in turn, may negatively impact the Company's revenue, margin and earnings.

Risks Associated with Competition

The competition in the semiconductor foundry industry is fierce. The Company competes with other foundry service providers, as well as a number of integrated device manufacturers. Some of these companies may have access to more advanced or different technologies than TSMC. Other companies may have greater financial and other resources than TSMC, such as the possibility of receiving direct or indirect government subsidies, economic stimulus funds, or other incentives that may be unavailable to TSMC. The governments of the United States, China, Europe, South Korea and Japan provide various incentive programs to promote developments of their domestic semiconductor industries, such as the Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022 (the "U.S. CHIPS Act"), which provides financial incentives to incentivize the development of U.S. semiconductor industry. Although governments in certain of the countries or regions where TSMC is currently expanding or planning to expand its production capacity have extended or may in the future extend certain financial incentives to the Company, there is no assurance that TSMC will be able to receive such financial incentives at the levels TSMC anticipates or at all. Additionally, any financial incentives the Company receives may be subject to conditions imposed by the grantors, such as restrictions on the expansion of facilities in foreign countries of concern and on joint research and technology licensing efforts with foreign entities of concern on any technology or product that raises national security concerns, or the grantors could seek to recover any funds provided to TSMC, or cancel, reduce or deny TSMC's requested subsidies or grants in the future. This could materially increase TSMC's costs or otherwise adversely affect its operations.

Moreover, the Company's competitors may, from time to time, also decide to undertake aggressive pricing initiatives in one or several technology nodes. The Company's competitors may also compete for its customers who seek to diversify their supply chains. These competitive activities may decrease TSMC's customer base, TSMC's pricing, or both. If TSMC is unable to compete effectively with such competitors on technology, manufacturing capacity, product quality, supply chain diversification and resilience, and customer satisfaction, it risks losing customers or business to such contenders.

Risks Associated with Changes in the Government Policies and Regulatory Environment

TSMC management closely monitors all domestic and foreign governmental policies and regulations that might impact TSMC's business and financial operations. During 2023 and as of the date of this Annual Report, the following changes or developments in governmental policies and regulations may influence the Company's business operations:

The manufacturing, assembling and testing of TSMC's products require the use of chemicals and materials that are subject to environmental, climate related, health and safety laws and regulations issued worldwide as well as international accords such as the Paris Agreement. Climate change related laws or regulations currently are too indefinite for the Company to assess the impact on our future financial condition with any degree of reasonable certainty. For example, the Taiwan "Greenhouse Gas Reduction and Management Act", which became effective on July 1, 2015, was amended and was renamed as "Climate Change Response Act". The amendments became effective in February 2023, which set a goal of reaching net-zero emissions in Taiwan by 2050 and also established a carbon fee system to collect carbon fees on direct and indirect emissions from emitters whose emissions reach certain thresholds. The government will start collecting carbon fees from 2025 but the rate for such fees has yet to be determined by the relevant authorities. We could be required to pay any incurred carbon fees since our emission levels exceed applicable thresholds pursuant to the current regulatory requirements, which will result in increased operating costs for us and affect us financially to a certain extent. We expect to see more of its relevant regulations promulgated by the regulators in the future. Also, the R.O.C. legislative authority is reviewing, at all times, various environmental issues to develop laws and regulations relating to environmental protection and climate related changes. The impact of such laws and regulations, as well as of the carbon fee, is indeterminable at the moment. It is not expected that other governmental policies or regulatory changes would materially impact TSMC's operations or financial condition.

6.3.3 Operational Risks

Natural and Man-Made Disaster

TSMC is committed to maintaining operational resilience in accordance with business continuity management standards that equips it with the capability to respond effectively to business disruption. Disruptions caused by natural and man-made disasters, including earthquakes, flooding, typhoons, droughts, tsunamis, sandstorms, wildfires, volcanic eruptions, fire, gas/chemical leakage, pandemic, supply chain disruption, geopolitical tensions, cyberattacks, sabotage, failure of critical facilities and equipment, shortages in the supply of utilities, such as water, electricity and natural gas, etc., could interrupt TSMC's operations.

Most of TSMC's production facilities, as well as those of many of its suppliers, customers and upstream providers of complementary semiconductor manufacturing services, are located in areas susceptible to natural disasters and may face potential shortages of electricity and/or water, which could cause interruptions to TSMC's operations.

Thus, if one or more natural disasters result in a prolonged disruption to TSMC's operations or those of its customers or suppliers, or if any of its fabs or vendor facilities were to be damaged or cease operations as a result of an unforeseen disruptive event, it could reduce TSMC's manufacturing capacity and cause the loss of important customers and thereby have an adverse, material impact on its operational and financial performance.

To cope with possible droughts resulted from severe climate change, TSMC implemented manufacturing process water saving, as well as building up industrial water recycling plants, using household water and cooperating with government to mitigate water shortage risk. As part of TSMC's business continuity plans, measures taken include water conservation measures, use of alternative water sources. Close monitoring of water situation including stress testing and exercises are carried out to validate our response plan.

TSMC has occasionally suffered power outages, dips or surges caused by difficulties encountered by its electricity supplier or other power consumers on the same power grid. Some of these incidents have resulted in interruptions to TSMC's operations. Such outages, shortages or interruptions in electricity supply could further be exacerbated by changes in the energy policy of the governments. If TSMC is unable to secure reliable and uninterrupted supply of electricity to power its manufacturing fabs, its ability to fill customers' orders would be jeopardized. Moreover, TSMC has encountered and may continue to encounter increases in the prices of utilities. For example, effective from April 1, 2024, TSMC is subject to a higher electricity tariff rate in Taiwan, which is estimated to increase by 25%, as compared to the tariff rate applicable to the Company in 2023. The increased prices for electricity could increase TSMC's manufacturing costs and therefore adversely impact TSMC's financial results.

If such events were to occur over prolonged periods of time, TSMC's operations and financial performance may be materially adversely affected. Moreover, TSMC's future capacity expansions in Taiwan and elsewhere could be curtailed by utility shortages.

TSMC has further strengthened its business continuity management, which includes periodic risk assessments and mitigations, and the establishment of taskforces before emergency events. The taskforces define emergency response, crisis communication, recovery plans and preventative measures based on the thorough analysis of derivative effects and alternative solutions to ensure the impacts of people injury, business interruption, finance are minimized. TSMC reviews periodically its business continuity plans and refines them to reflect exercise results and implementation. In response to the impact of the earthquakes that occurs in Taiwan, TSMC continues to improve its earthquake emergency response, tool anchorage and seismic isolation facilities, and readiness for tool salvage and production recovery. These improvements have been integrated into new fab design. TSMC's business continuity procedures were further enhanced through close reference to ISO 22301 business continuity management system (BCMS).

TSMC maintains a comprehensive risk management system dedicated to human safety, the conservation of natural resources and the protection of property. In order to cope effectively with emergencies and natural disasters, management at each facility has developed comprehensive plans and procedures that focus on risk prevention, emergency response, crisis management and business continuity. All TSMC manufacturing fabs have been ISO 14001 certified (environmental management) and ISO 45001 certified (occupational health and safety management). All manufacturing fabs in Taiwan have also been TOSHMS (Taiwan Occupational Safety and Health Management System) certified. New fabs will also attain the above certifications within 18 months after acquiring factory registration certification.

TSMC and many of its suppliers use flammable and toxic materials in their manufacturing processes and are therefore subject to risks that cannot be completely eliminated arising from explosion, fire, or environmental influences. Although TSMC maintains multiple layers of risk prevention and protection, as well as fire and casualty insurance, TSMC's risk management and insurance coverage may not always be sufficient to cover all of its potential losses. If any of TSMC's fabs or vendor facilities were to be damaged or cease operations as a result of an explosion, fire or environmental causes, it could reduce the TSMC's manufacturing capacity leading to the loss of important sales and customers and have a negative impact on TSMC's financial performance. In addition to periodic fire-protection inspections and firefighting drills, TSMC has also carried out a corporate-wide fire risk mitigation project focused on managerial and hardware improvements.

TSMC continues to monitor key disruptive threats to its business operations and adapt the plans to ensure operational resilience.

Risks Associated with Capacity Expansion

TSMC performs long-term market demand forecasts for its products and services to manage its overall capacity. Based on its market demand forecasts, the Company has continued to add capacity to meet market needs for its products and services, including in Taiwan, in Arizona, U.S., in Nanjing, China, in Kumamoto, Japan and in Dresden, Germany.

Implementing these capacity expansion plans will increase its costs, and the increases may be substantial. For example, the Company would need to build new facilities, purchase additional equipment and hire and train personnel to operate the new equipment. If TSMC does not increase its net revenue accordingly, its financial performance may be adversely affected by these increased costs.

In addition, market conditions are dynamic and TSMC's market demand forecasts may change significantly at any time. During periods of decreased demand, certain manufacturing lines or tools in some of the Company's manufacturing facilities may be suspended or shut down temporarily. However, if demand subsequently increases rapidly over a short period of time, TSMC may not be able to restore the capacity in a timely manner to take advantage of the upturn. In such circumstances, its financial performance and competitiveness may be adversely affected.

In order to mitigate the risk associated with capacity expansion, TSMC continuously watches for changes in market conditions and works closely with its customers. When market demand is not as expected, the Company tries to adjust its capacity plans in a timely manner to reduce the impact on its financial performance.

Risks Associated with Construction of New Fabs

The Company has multiple expansion projects that are currently underway, including the design and construction of new fabs worldwide. Global expansion has required and will continue to require considerable managerial, financial and other resources. The Company expects to face particular challenges in global expansion and operations, including but not limited to:

- higher costs associated with construction of new fabs, establishing supply chains for various materials in different overseas locations, the impact on the Company's ability to sustain its current level of productivity and manufacturing efficiency provided by its ecosystem of interconnected semiconductor fabs, employees and suppliers in the R.O.C., and recruiting and retaining talent in various overseas locations;
- labor shortages, interruptions in the supply chains for various materials, and construction issues, which could substantially delay the completion of the Company's expansion projects, and could further result in substantial additional costs or failure to meet its capacity expansion plans;
- disruptions to the Company's operations caused by natural or man-made disasters, including earthquakes, flooding, typhoons, droughts, tsunamis, sandstorms, wildfires, volcanic eruptions, fire, gas/chemical leakage, pandemic, supply chain disruption, geopolitical tensions, sabotage, failure of critical facilities and equipment and shortages in the supply of utilities, such as water, electricity, and natural gas, etc.;
- scarcity of industrial-use land, which could limit the Company's future expansion of operations;
- compliance with applicable foreign laws and regulations, and the risk of penalties if the Company's practices are deemed not to be in compliance;
- challenges in managing information technology infrastructure in multiple locations and across different systems and risks of our information technology infrastructure succumbing to cyberattacks by third parties worldwide;
- adverse changes relating to government grants or other government incentives;
- challenges in creating an inclusive workplace in new sites to embrace the cultural differences and managing the operation over large geographic distances;
- limited or insufficient intellectual property protection or difficulties enforcing the Company's rights to intellectual property; and
- exposure to different tax jurisdictions and potential adverse tax consequences.

If TSMC is unable to overcome the above challenges, the Company's business, financial condition and results of operations could be adversely affected.

Risks Associated with Sales Concentration

Over the years, the Company's customer profile and the nature of the Company's customers' business have changed dramatically. While TSMC generates revenue from hundreds of customers worldwide, TSMC's ten largest customers in 2021, 2022 and 2023 accounted for approximately, 71%, 68% and 70% of TSMC's net revenue in the respective year. TSMC's largest customer in 2021, 2022 and 2023 accounted for 26%, 23% and 25% of the Company's net revenue in the respective year. TSMC's second largest customer in 2021, 2022 and 2023 accounted for 10%, less than 10% and 11% of TSMC's net revenue in the respective year.

A more concentrated customer base will subject TSMC's revenue to seasonal demand fluctuations from the Company's large customers, and cause different seasonal patterns in the Company's business. This customer concentration results in part from the changing dynamics of the electronics industry with the structural shift to mobile and high performance computing (HPC) devices and applications and software that provide the content for such devices.

There are only a limited number of customers who are successfully exploiting this new business model paradigm. Also, TSMC has seen changes in the nature of its customers' business models in response to this new business model paradigm. For example, there is a growing trend among system companies designing their own semiconductors and working directly with the semiconductor foundries, which makes their products and services more marketable in a changing consumer market.

Also, since the global semiconductor industry has become increasingly competitive, some of TSMC's customers have engaged in industry consolidations in order to remain competitive. Such consolidations have taken the form of mergers and acquisitions. If more of TSMC's major customers consolidate, this will further decrease the overall number of the Company's customer pool. In addition, regulatory restrictions, such as export controls directed at TSMC's major customers, could impact the Company's ability to supply products to those customers or reduce those customers' demand for TSMC's products and services and thus impact their business operations.

The loss of, or significant curtailment of purchases by, one or more of the Company's top customers including curtailments due to increased competitive pressures, industry consolidation, changes in applicable regulatory restrictions, product designs, manufacturing sourcing or outsourcing policies or practices of these customers, the timing of customer inventory adjustments, or changes in its major customers' business models, may adversely affect TSMC's results of operations and financial condition.

Risks Associated with Purchasing Concentration

- Raw Materials

TSMC's production operations require that it obtain adequate supplies of raw materials, such as silicon wafers, gases, chemicals and photoresist, on a timely basis and at commercially reasonable prices. In the past, shortages in the supply of some materials, whether by specific suppliers or by the semiconductor industry generally, have resulted in occasional industry-wide price adjustments and delivery delays. Moreover, major natural disasters, trade barriers and political or economic turmoil, including military conflicts and inflation, occurring within the country of origin of such raw materials may also significantly disrupt the availability of such raw materials or increase their prices. Also, since TSMC procures some of its raw materials from sole-sourced suppliers, there is a risk that the Company's needs for such raw materials may not be met or that back-up supplies may not be readily available. Importation and domestic production limitations may also limit the Company's ability to obtain adequate supplies of raw materials as well as materials of the necessary quality. In addition, recent trade tensions could result in increased prices or even unavailability of raw materials due to tariffs, export control or other non-tariff barriers. TSMC's revenue and earnings could decline if it is unable to obtain adequate supplies of the necessary raw materials in a timely manner or if there are significant increases in the costs of raw materials. To reduce the supply chain risk and to manage costs effectively, TSMC commits resources toward developing new supply sources and developing a future capacity plan with qualified raw material suppliers. Furthermore, the Company continually encourages its suppliers to reduce their supply chain risk by decentralizing production plants to improve their cost competitiveness and to support TSMC global demands in a timely fashion.

TSMC not only operates world-class manufacturing process and facilities but needs sufficient world-class high-quality raw materials. As a result, TSMC engages early and extensively with primary suppliers on managing quality and capacity issues so as to be prepared for any unexpected need to ramp up or curtail production. To streamline supply chain risk, the Company communicates early on with major material suppliers regarding quality and capacity topics and has formed a dedicated team for supplier plant onsite or remote audits to extend supply chain best practices to its upstream suppliers. In addition, in response to the rapid increase or decrease in production capacity of new products, TSMC has continued to improve its inventory monitoring system to achieve more accurate demand forecasts and ensure that the supply chain maintains sufficient inventory levels. The Company also performs supply chain risk assessments to ensure that critical suppliers meet various standards in labor, ethics, environmental, safety and health (ESH) practices and business continuity plans (BCPs).

- Equipment

The Company's operations and ongoing expansion plans depend on its ability to obtain necessary equipment and related services available from a limited number of suppliers. As a result, TSMC may encounter the situation of limited supply and/or long delivery cycles. To better manage its supply chain, the Company evaluates and projects delivery lead times to minimize the impact of supply chain risks on operating costs. TSMC has also implemented various collaborative business models and risk management contingencies with suppliers to ensure supply and shorten the procurement lead time. To enhance its sourcing capabilities for its global sites, the company has also taken steps to strengthen its understanding of local regulations, policies, and supply chains. However, if TSMC is unable to acquire in a timely manner the equipment and parts it needs, it may fail to successfully implement capacity expansion plans and exploit time sensitive business opportunities. Additionally, ongoing trade tensions could result in increased prices for, or even unavailability of, key equipment, through delay or denial of necessary export licenses, adoption of additional export control measures and other tariff or non-tariff barriers. If TSMC is unable to obtain equipment in a timely fashion to fulfill its customers' demand for technology and production capacity, or unable to do so at a reasonable cost, its financial condition and results of operations could be negatively impacted.

Risks Associated with Intellectual Property Rights

The Company's ability to compete successfully and to achieve future growth depends in part on the continued strength of its intellectual property portfolio. While the Company actively enforces and protects our intellectual property rights, there can be no assurance that its efforts will be adequate to prevent the misappropriation or improper use of its proprietary technologies, software, trade secrets or know-how. Also, the Company cannot assure you that, as its business or business models expand into new areas, it will be able to develop independently the technologies, patents, software, trade secrets or know-how necessary to conduct its business or that it can do so without unknowingly infringing the intellectual property rights of others. As a result, the Company may have to rely on, to a certain degree, licensed technologies and patent licenses from others. To the extent that the Company relies on licenses from others, there can be no assurance that it will be able to obtain any or all of the necessary licenses in the future on terms it considers reasonable or at all. The lack of necessary licenses could expose the Company to claims for damages and/or injunctions from third parties, as well as claims for indemnification by its customers in instances where it has contractually agreed to indemnify its customers against damages resulting from infringement claims.

The Company has received, from time to time, communications from third parties, including non-practicing entities and semiconductor companies, asserting that TSMC's technologies, its manufacturing processes, or the design IPs of the semiconductors made by TSMC or the use of those semiconductors by its customers may infringe their patents or other intellectual property rights. Because of the nature of the industry, its market position, and the expansion of its manufacturing operations outside of Taiwan, the Company may receive an increased number of such communications in the future. The assertions made and lawsuits initiated by litigious, well-funded, non-practicing entities are particularly aggressive in their monetary demand and in seeking court-issued injunctions. Such lawsuits and assertions may increase TSMC's cost of doing business and may potentially be extremely disruptive if these asserting entities succeed in blocking the trade of products made and services offered by TSMC. Also, with the expansion of its manufacturing operations into certain non-R.O.C jurisdictions, it has faced increased challenges in managing risks of intellectual property misappropriation. Despite our efforts to adopt robust measures to mitigate the risk of intellectual property misappropriation in such new jurisdictions, we cannot guarantee that the protection measures we adopted will be sufficient to prevent us from potential infringements by others, or at all.

If the Company fails to obtain or maintain certain technologies or intellectual property licenses or fails to prevent our intellectual property from being misappropriated and, if litigation relating to alleged intellectual property matters occurs, it could: (1) prevent the Company from manufacturing particular products or selling particular services or applying particular technologies; and (2) reduce our ability to compete effectively against entities benefiting from our misappropriated intellectual property, which could reduce its opportunities to generate revenue.

The Company has taken related measures to minimize potential loss of shareholder value arising from intellectual property claims and litigation filed against it. These measures include: strategically obtaining licenses from certain semiconductor and other technology companies as needed; timely securing intellectual property rights originating within and outside of TSMC for defensive and/or offensive protection of TSMC technology and business; and aggressively defending against baseless litigation.

Risks Associated with Litigious and Non-litigious Matters

As is the case with many companies in the semiconductor industry, the Company has received from time to time communications from third parties asserting that its technologies, its manufacturing processes, or the design of the semiconductors made by TSMC or the use of those semiconductors by its customers may infringe upon their patents or other intellectual property rights. These assertions have at times resulted in litigation by or against the Company and settlement payments by the Company. Irrespective of the validity of these claims, the Company could incur significant costs in the defense thereof or could suffer adverse effects on its operations. The Company is also subject to antitrust compliance requirements and scrutiny by governmental regulators in multiple jurisdictions. Any adverse results of such proceeding or other similar proceedings that may arise in those jurisdictions could harm TSMC's business and distract its management, and thereby have a material adverse effect on its results of operations or prospects, and subject the Company to potential significant legal liability.

Currently, TSMC's material legal proceeding is as follows:

In September 2022, Daedalus Prime LLC ("Daedalus") filed complaints in the U.S. International Trade Commission ("ITC") and the U.S. District Court for the Eastern District of Texas alleging that TSMC, TSMC North America, and other companies infringe four U.S. patents. The ITC instituted an investigation in October 2022. In June 2023, Daedalus dropped two of the asserted patents in the ITC. Also in June 2023, Daedalus filed another complaint in the Eastern District of Texas alleging that TSMC infringes five U.S. patents. In September 2023, the ITC granted the parties' joint motion to suspend the procedural schedule while the parties finalize the settlement agreement and then request termination of the ITC Investigation and related litigations. In October 2023, the parties jointly requested the ITC to terminate the investigation and Eastern District of Texas to dismiss the related litigations. In November 2023, the ITC investigation was terminated and the related litigations in the Eastern District of Texas were dismissed.

Other than the matter described above, as of the date of this Annual Report, TSMC is not currently a party to any other material legal proceedings.

Risks Associated with Mergers and Acquisitions
In 2023 and as of the date of this Annual Report, TSMC had not conducted any merger or acquisition.

Risks Associated with Recruiting Quality Personnel
TSMC relies on the continued services and contributions of its management team, as well as skilled technical and professional personnel. The Company's business could suffer from the inability to fulfill personnel needs with high quality professionals in a timely fashion caused by the loss of personnel, talent shortages, illegal talent poaching, immigration controls, or related changes in market demand for our products and services. Since there is fierce competition for talent recruitment, the Company cannot ensure timely fulfillment of its personnel demand.

In order to reduce the risk of talent recruitment, TSMC encourages job rotation and employs an on-the-job training and certification system. In this way, employees can continuously learn and enhance their work efficiency and effectiveness in the workplace. Moreover, TSMC creates multiple recruitment channels and continues to hire diverse top-notch, talented professionals from Taiwan and overseas. At the same time, the Company continues to expand industry-academic cooperation to meet outstanding talent at an early phase to recruit them in the future.

Future R&D Plans and Expected R&D Spending
For additional details, see "5.2.7 Future R&D Plans" on page 104-105 of this Annual Report.

Changes in Corporate Reputation and Impact on the Company's Crisis Management
TSMC has established an excellent reputation worldwide based on its core values of integrity, commitment, innovation and customer trust. The Company's positive image also reflects outstanding operations, rigorous corporate governance and dedication to sustainable responsibility by serving as a good corporate citizen. TSMC continues to pursue innovation in economic, environmental and social dimensions.

In 2023, TSMC was honored with numerous awards and citations for achievements in various areas including operations, corporate governance, patents, profit growth, investor relations, environmental protection, and corporate sustainability. The Company was selected as a part of the Dow Jones Sustainability World Index for the 23rd consecutive year. TSMC won first place in *CommonWealth* magazine's inaugural Talent Sustainability award and in the Taiwan Institute for Sustainable Energy's *Corporate Sustainability* award for 2023. The Company was recognized as a Taiwan Top Ten Sustainability Exemplary in the Corporate Sustainability report, and for Climate Leadership, Circular Economy Leadership, Supply Chain Management, Sustainable Water Management and Information Security Leadership. The Carbon Disclosure Project chose TSMC as a Supplier Engagement Leader in 2022, ranking in the top 5% of the Taiwan Stock Exchange corporate governance evaluation. The Company was named a member of *Fortune*'s 2023 World's Most Admired Companies and the *Fortune* Global 500; *Forbes*'s World's Largest Technology Companies in 2023; PricewaterhouseCoopers' Global Top 100 Companies by market capitalization; and the 2023 Carbon Clean 200™ list issued by the media research company Corporate Knights and the non-profit As You Sow organization. TSMC was honored to be a part of the World Benchmarking Alliance's SDG2000, the 2,000 Most Influential Companies, and included in Morgan Stanley Capital International's All Country World Index ESG Leaders, while being ranked AAA by MSCI Research in its ESG Indexes.

To promote sustainability, TSMC's ESG Steering Committee, led by Chairman Dr. Mark Liu, presented the fourth TSMC ESG Award in 2023, honoring internal organizations and divisions for tangible achievements in the Company's five ESG strategic directions: drive green manufacturing, build a responsible supply chain, create a diverse and inclusive workplace, develop talent, and care for the disadvantaged. At the same time, this award presentation encouraged all employees to propose new ideas for sustainability to be assessed for feasibility and potential incorporation in the Company's implementation plans. Compared to 1,880 sustainability proposals in the third year, the fourth annual ESG Award generated 3,166 innovative ideas, adding new energy to the Company's culture of sustainability.

Mindful of its global reputation, TSMC employs numerous preventative measures to address potential risks from earthquakes, fires, IT service disruption, yield loss, cyberattacks, supply chain disruption, pandemics, environmental events, and utility supply disruption. TSMC practices crisis management, implements recovery measures to deal with possible crisis events, maintains a crisis command center for control guidelines, and prepares emergency response procedures to ensure timely and prompt responses during a crisis. TSMC also performs regular exercises for crisis scenarios to ensure that crisis management procedures are comprehensive and valid. In 2023, TSMC received a rating of Low ESG Risk from the Sustainalytics ESG Risk Ratings.

TSMC's environment, safety and health committee holds monthly meetings to coordinate with relevant departments in each fab to conduct emergency response drills and continuously improve their notification and operational procedures to ensure clear channels of communication to stakeholders if a crisis arises, with the public relations division serving as the designated gateway for external communications.

In 2023, the Board of TSMC took steps to enhance its corporate governance by expanding and strengthening the functions and responsibilities of its committees. The "Audit Committee" was renamed as the "Audit and Risk Committee" to assist the Board in overseeing the quality and integrity of accounting, auditing, reporting, financial control practices, and risk management structure. TSMC also deepened the risk management mechanisms of its overseas subsidiaries by conducting risk management and business continuity management workshops and incident commander trainings. Business continuity plans are also rehearsed and validated through regular exercises to ensure timely and effective responses. These efforts aim to fortify operational resilience and raise risk awareness of operational preparedness across TSMC's global footprint.

If the above-mentioned crisis occurs, relevant personnel at TSMC's headquarters and global operating locations can deploy comprehensive emergency response measures to eliminate or minimize the impact on personnel safety, environment, property and operations. Responders also involve the public relations division from initial stage to ensure timely, clear and consistent external communication regarding the situation.

Risks Associated with Change in Management
In 2023 and as of the date of this Annual Report, there were no such risks for TSMC.

Risks Regarding Non-Compliance with Export Control, Environmental and Climate Change Related Laws, Regulations and Accords, and Failure to Timely Obtain Requisite Approvals Necessary for Conducting Business
Because TSMC engages in manufacturing activities in multiple jurisdictions and conducts business with its customers located worldwide, such activities are subject to a myriad of governmental regulations. For example, the manufacturing, assembling and testing of TSMC's products require the use of equipment that is subject to export control laws and regulations, as well as metals, chemicals, and materials that are subject to environmental, climate-related, health and safety, and humanitarian forced labor prohibition and conflict-free sourcing laws, regulations and guidelines issued worldwide. The Company's failure to comply with any such laws or regulations, as amended from time to time, and its failure to comply with any information and document sharing requests from the relevant authorities in a timely manner could result in:
- significant penalties and legal liabilities, such as the denial of import or export permits or third party private lawsuits, criminal or administrative proceedings;
- the temporary or permanent suspension of production of the affected products;
- the temporary or permanent inability to procure or use certain production critical chemicals or materials;
- unfavorable alterations in TSMC's manufacturing, fabrication and assembly and test processes;
- challenges from its customers that place TSMC at a significant competitive disadvantage, such as loss of actual or potential sales contracts in case the Company is unable to satisfy the applicable legal standard or customer requirement;
- restrictions on TSMC's operations or sales;

- loss of tax benefits, including termination of current tax incentives, disqualification of tax credit application and repayment of the tax benefits that the Company is not entitled to; and
- damages to TSMC's goodwill and reputation.

Complying with applicable laws and regulations, such as environmental and climate related laws and regulations, could also require TSMC, among other things, to do the following: (1) purchase, use or install remedial equipment; (2) implement remedial programs such as climate change mitigation programs and air pollution reduction plans; (3) modify its product designs and manufacturing processes, or incur other significant expenses such as paying any incurred carbon fees if the Company's emission levels exceed applicable thresholds, and obtaining renewable energy sources, renewable energy certificates or carbon credits, substitute raw materials or chemicals that may cost more or be less available for the Company's operations.

TSMC's inability to timely obtain approvals necessary for the conduct of its business could impair its operational and financial results. For example, if the Company is unable to timely obtain environmental related approvals needed to undertake the development and construction of a new fab or expansion project, then such inability may delay, limit, or increase the cost of its expansion plans that could also in turn adversely affect its business and operational results. In light of increased public interest in environmental issues, TSMC's operations and expansion plans may be adversely affected or delayed in response to public concern and social environmental pressures even if the Company complies with all applicable laws and regulations.

TSMC believes that climate change should be regarded as a significant corporate risk that must be managed to improve competitiveness. For TSMC's climate change related risks and control measures, see the "Climate Change and Energy Management" section under "7.2.1 Environmental Protection" on page 158-159 of this Annual Report.

6.3.4 Financial Risks

Economic Risks

Any future systemic political, economic or financial crisis or market volatility, including but not limited to interest rate and foreign exchange rate fluctuations, inflation or deflation or changes in economic, fiscal and monetary policies in major economies, could cause revenue or profits for the semiconductor industry as a whole to decline dramatically. If the economic conditions or financial conditions of the Company's customers were to deteriorate, the demand for its products and services may decrease and additional accounting related allowances may be required, which could reduce TSMC's operating and net income.

- Interest Rate Fluctuation

TSMC is exposed to interest rate risks primarily in relation to its investment portfolio and outstanding debt. Changes in interest rates affect the interest earned on the Company's cash and cash equivalents and fixed income securities, the fair value of those securities, as well as the interest paid on its debt.

The objective of TSMC's investment policy is to achieve a return that will allow the Company to preserve principal and support liquidity requirements. The policy generally requires the Company to invest in investment grade securities and limits the amount of credit exposure to any one issuer. The majority of TSMC's fixed income investments are fixed-rate securities, which are classified as financial assets at fair value through other comprehensive income ("FVTOCI") or amortized cost. For those fixed income investments classified as financial assets at FVTOCI, changes in their fair value are recognized through other comprehensive income; for those classified as financial assets at amortized cost, changes in their fair value are not reflected in asset values unless the assets are sold.

TSMC has entered and may in the future enter into interest rate derivatives to partially hedge interest rate risk on its fixed income investments and anticipated debt issuance. However, these hedges can offset only a limited portion of the financial impact from movements in interest rates.

The majority of TSMC's debt is fixed-rate and measured at amortized cost and, as such, changes in interest rates would not affect future cash flows or the carrying amount.

- Foreign Exchange Volatility

Substantially all of TSMC's sales are denominated in U.S. dollars and over half of its capital expenditures are denominated in currencies other than the NT dollar, primarily in U.S. dollars, Euros and Japanese yen. As a result, any significant fluctuations to its disadvantage in the exchange rate of the NT dollar against such currencies, in particular a weakening of the U.S. dollar against the NT dollar, would have an adverse impact on the Company's revenue and operating profit as expressed in NT dollars. For example, every one percent depreciation of the U.S. dollar against the NT dollar would result in an approximately 0.4 percentage point decrease in the Company's operating margin based on its 2023 results.

Conversely, if the U.S. dollar appreciates significantly versus other major currencies, the demand for the products and services of TSMC's customers and for its goods and services will likely decrease, which will negatively affect the Company's revenue.

TSMC uses foreign currency derivatives contracts, such as currency forwards or currency swaps, and non-derivative financial instruments, such as foreign currency denominated debts, to protect against currency exchange rate risks associated with non-NT dollar-denominated assets and liabilities, investments in foreign subsidiaries, and certain forecasted transactions. These hedges reduce, but do not entirely eliminate, the effect of foreign currency exchange rate movements on its assets and liabilities.

Fluctuations in the exchange rate between the U.S. dollar and the NT dollar may affect the U.S. dollar value of the Company's common shares and the market price of the Company's American Depositary Shares (ADSs) as well as any cash dividends paid in NT dollars on TSMC's common shares represented by ADSs.

- Inflation

TSMC is subject to the effects of inflation through increases in the cost of items such as raw materials and equipment used to produce its products, wage expenses and employee benefits, electricity costs, and costs in relation to construction of fabs. Although TSMC does not believe that inflation has had a material impact on its financial position or results of operations to date, a high inflation in the future may have an adverse effect on the Company's ability to maintain current levels of profit margin if the selling prices of its products and services do not increase with these increased costs.

Amendments to Tax Regulations or Implementation of New Tax Laws

Any amendments to existing tax regulations or the implementation of any new tax laws in the jurisdictions in which TSMC operates its business may have an adverse effect on its net income.

While the Company is subject to tax laws and regulations in various jurisdictions in which it operates or conducts business, TSMC's principal operations are in the R.O.C. and it is exposed primarily to taxes levied by the R.O.C. government. The R.O.C. Controlled Foreign Company ("CFC") rules enacted in 2016 have been implemented since January 1, 2023, pursuant to which, certain profits retained at a CFC located in a low-tax jurisdiction would be taxable at its parent company in Taiwan. On the other hand, effective from January 1, 2023, the R.O.C. Statute for Industrial Innovation was amended such that eligible companies that develop innovative technologies domestically and possess leading position in global supply chain may claim investment tax credit of 25% on qualified R&D expenditure and 5% on procurement of machinery/equipment for advanced processes over a fiscal year. The Company is eligible for these new incentives pursuant to the R.O.C. Statute for Industrial Innovation. Further, changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organization for Economic Cooperation and Development (OECD). These changes may increase tax uncertainty and have an adverse effect on TSMC's operating results.

In order to control tax risk, the Company closely monitors all domestic and foreign governmental policies and regulations that might impact its financial operations. TSMC has established risk management procedures to collect information, analyze potential tax implications, and develop countermeasures.

Risks Associated with External Financing

In times of market instability, sufficient external financing may not be available to the Company on a timely basis, on commercially reasonable terms to the Company, or at all. If sufficient external financing is not available when TSMC needs such financing to meet its capital requirements, the Company may be forced to curtail its expansion, modify plans or delay the deployment of new or expanded services until it obtains such financing.

Risks Associated with High-Risk/Highly Leveraged Investments; Lending, Endorsements, and Guarantees for Other Parties; and Financial Derivative Transactions

In 2023 and as of the date of this Annual Report, TSMC made no high-risk or highly leveraged financial investments. All financial derivative transactions engaged by TSMC were strictly for hedging and not for trading or speculative purposes. All guarantees and intercompany loans provided by TSMC and its subsidiaries were solely for TSMC and/or its wholly-owned subsidiaries. All guarantees and intercompany loans were in compliance with relevant rules and regulations.

To manage risks of various financial transactions, TSMC has established internal control policies and procedures based on sound financial and business practices, all in compliance with the relevant rules and regulations issued by the R.O.C. Financial Supervisory Commission. TSMC's policies and procedures include Procedures for Financial Derivatives Transactions, Procedures for Lending Funds to Other Parties, Procedures for Acquisition or Disposal of Assets, and Procedures for Endorsement and Guarantee.

Risks Associated with Impairment Charges

Under Taiwan-IFRSs, TSMC is required to evaluate its tangible assets, right-of-use assets and intangible assets for impairment whenever triggering events or changes in circumstances indicate that the asset may be impaired. If certain criteria are met, TSMC is required to record an impairment charge. TSMC is not able to estimate the extent or timing of any impairment charge for future years. Any impairment charge required may have a material adverse effect on the Company's net income.

The determination of an impairment charge at any given time is mainly based on the projected results of operations over several years subsequent to that time. Consequently, an impairment charge is more likely to occur during a period when the Company's operating results are otherwise already depressed. See "Note 5. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY" in Annual Report section (II), Financial Statements for a discussion of how TSMC assesses if an impairment charge is required and, if so, how the amount is determined.

6.3.5 Other Risks

Potential Impact and Risks Associated with Sales of Significant Numbers of Shares by TSMC's Directors, and/or Shareholders Who Own 10% or More of TSMC's Total Outstanding Shares

The value of TSMC shareholders' investment may be reduced by possible future sales of TSMC shares owned by major shareholders.

As of the date of this Annual Report, no single shareholder owned 10% or more of TSMC's total outstanding shares.

Risks of Trade Policies

As TSMC's revenue is primarily derived from sales to major economies in the world (please refer to "2.2.4 TSMC Position, Differentiation and Strategy" on page 19-21 of this annual report), any changes in the trade policies (such as the increase of tariffs on certain products, the implementation of import and export controls, and the adoption of other trade barriers) of such major economies can affect the sales of TSMC or its customers and thereby affect TSMC's operating results.

In 2020, the U.S. tightened its export control measures against Huawei Technology Co. Ltd. and its affiliates (collectively, "Huawei"). To comply with relevant laws and regulations, TSMC has discontinued shipment of products to Huawei since September 2020. Since February 2022, there have been expansive sanctions and export controls imposed by several countries and regions against Russia, including certain individuals and entities, in connection with the military conflict in Ukraine. In October 2022 and October 2023, the U.S. adopted additional export controls over specified countries (including China) under the U.S. Export Administration Regulations ("U.S. EAR") on certain advanced computing integrated circuits ("ICs"), computer commodities that contain such ICs, and certain semiconductor manufacturing items, as well as controls on transactions involving items for supercomputer and semiconductor manufacturing end-uses. The new controls add new license requirements for items subject to the U.S. EAR where the items are destined to a semiconductor fabrication facility in China that fabricates ICs meeting specified advanced node parameters as well as for U.S. persons' activities supporting such facility or semiconductor manufacturing items. In October 2022, the Company secured a one-year general authorization from the U.S. government, which allows TSMC to maintain the Company's fab's operations in Nanjing, China. This general authorization has been renewed and extended to be effective until May 31, 2024. TSMC is also applying for a Validated End-User (the "VEU") authorization for its Nanjing fab, which, once obtained, would be a permanent authorization that allows the Company to receive exports of eligible items from the U.S. without separate licenses. However, there is no assurance that TSMC will be able to obtain the VEU authorization for our Nanjing fab or that the obtained general authorization will not be terminated in the future. On the other hand, measures adopted by an affected country to counteract the impact of another country's actions or regulations could lead to significant legal liability to multinational corporations including our own. For example, in January 2021, China adopted a blocking statute that, among other matters, entitles Chinese entities incurring damages from a multinational's compliance with foreign laws to seek civil remedies.

Imposition of trade barriers, including protectionist measures, sanctions and import and export controls (including without limitation the export control measures mentioned in the foregoing paragraph), could increase TSMC's manufacturing costs, limit TSMC's access to certain supplies, make TSMC's pricing less competitive, and impact the sales of TSMC or its customers. In 2023 and as of the date of this annual report, our current results of operations have not been materially affected. Nevertheless, depending on future developments of global trade tensions, such relevant regulations, rules, or measures may have an adverse impact on the Company's business and operations, and TSMC may incur significant legal liability and financial losses as a result.

TSMC continues to monitor the recent shifts in trade policies and measures among the relevant major economies and will take corresponding responsive actions in accordance with subsequent developments.

Fab 6

7 Environmental, Social & Governance (ESG)

TSMC is the only semiconductor company to be selected as a component of the Dow Jones Sustainability Indices for 23 consecutive years.

7.1 Overview

TSMC actively implements ESG management following three missions: Acting with Integrity, Strengthening Environmental Protection, and Caring for the Disadvantaged. In so doing, the Company seeks maximum achievements as the leading technology and capacity provider of the global logic IC industry and strives to establish mutually beneficial interaction with all stakeholders – employees, shareholders/investors, customers, suppliers/contractors, governments/associations and society as a whole – aiming to create sustainable value and to be a force for positive change.

Guidance for Implementing – ESG

With the vision of Uplifting Society, TSMC has formulated its ESG Policy as the overarching guiding principle for sustainable development, in which the ESG Matrix, established by the Company's founder Dr. Morris Chang, clearly defines the scope of its ESG responsibilities. TSMC strives to carry out its ESG commitment in seven areas: morality, business ethics, economy, rule of law, sustainability, work-life balance and happiness, and philanthropy. Actions that TSMC has taken to fulfill these commitments are integrity, law compliance, anti-corruption/anti-bribery/anti-cronyism, environmental protection/climate control/energy conservation, corporate governance, providing well-paying jobs, generating good shareholder return, employee work-life balance, encouraging innovation and a good work environment. TSMC also advances ESG through its Charity Foundation and Education and Culture Foundation to fulfill corporate citizenship responsibilities.

TSMC ESG Matrix

Society / TSMC	Morality	Business Ethics	Economy	Rule of Law	Sustainability	Work/Life Balance Happiness	Philanthropy
Integrity	V	V					
Law Compliance				V			
Anti-Corruption Anti-Bribery Anti-Cronyism	V	V		V			
Environmental Protection Climate Control Energy Conservation				V	V		
Corporate Governance		V	V	V			
Provide Well-Paying Jobs			V			V	
Good Shareholder Return			V				
Employees' Work-Life Balance						V	
Encourage Innovation		V	V				
Good Work Environment						V	
TSMC Charity Foundation					V	V	V
TSMC Education and Culture Foundation					V	V	V

ESG Management

TSMC has established the ESG Steering Committee as the highest level of ESG decision-making, chaired by the Company's Chairman, while the Chairperson of the ESG Committee serves as executive secretary, and other members are senior executives from a wide variety of functions. All work together to examine material ESG issues in relation to the Company's operations, set the short-, medium- and long-term strategic directions that link to the UN's Sustainable Development Goals (SDGs).

The ESG Committee functions to coordinate and integrate resources, and facilitate communication among various divisions, implementing the resolutions of the Company's ESG Steering Committee. The ESG Department, on behalf of the ESG Committee, works together with cross-organizational representatives to identify key sustainability issues in relation to the Company's operations and stakeholders' concerns. Task forces are formed to address various issues and frame adaptive strategies, goals and action plans. The ESG Committee holds quarterly meetings to track progress and ensure the strategies are implemented effectively in daily operations. At the same time, every quarter the chairperson of the ESG Committee reports on the implementation of plans and results to the Board of Directors/Nominating, Corporate Governance and Sustainability Committee, under whose supervision the ESG Committee continues to improve TSMC's sustainability management policies, strategies, and goal setting and deepen sustainable development.

In 2023, TSMC focused primarily on green manufacturing and supply chain management (including net zero emissions, renewable energy access and use, biodiversity strategy, and low-carbon value chain management), diverse and inclusive workplace, and talent development (including a series of activities promoting diversity and inclusion, conducting human rights due diligence, deepening high school students' science, technology, engineering, and mathematics (STEM) programs), and public welfare investments such as the Public Welfare Green Energy Project. TSMC also planned and oversaw ESG budgets for 2023 and 2024. The Company uses sustainability reports as an ESG management tool and updates themed reports such as the Climate and Nature Report, the UN's SDG Action Report, and the Materiality Analysis Report. In June 2024, TSMC will release its first Sustainability Impact Valuation Report, which includes social impact and environmental profit and loss analysis, and Human Rights Report to further expand sustainability transparency and drive towards a better future.

Stakeholder Engagement

TSMC respects all stakeholders' rights and interests in sustainability issues and aims to foster interaction through diverse communication platforms. These channels include a dedicated ESG website, ESG mailbox, Investor mailbox, Employee Feedback Channels, Irregular Business Conduct Reporting System, and the Supply Chain Worker Grievance Channel. TSMC systematically manages and addresses stakeholders' concerns through identification, prioritization, and validation.

Stakeholders and Communication Channels in 2023

Stakeholders	Communication Channels
Employees	•Employee Opinion Survey on Company Core Values, Employee Engagement Survey •Employee trainings •Silicon Garden Meeting (labor-management meeting) •Communication meetings for various levels of managers and employees; e.g. the executives communication meeting, skip levels and communication meeting in individual functions or divisions •Human Resources Business Partner Team •Ombudsman system, whistleblower reporting system, irregular business conduct reporting system, and sexual harassment investigation committee •Corporate intranet (myTSMC), internal emails, and other announcement channels (such as promotion posters at facilities), TSMC eSilicon Garden Stories •Employee suggestion channels, such as the Fab Caring Circle, Employee Opinion Box, Wellness Center, wellness website, employee PIP & IT Security mailbox and hotline, etc.
Shareholders/Investors	•Annual general shareholders' meeting •Annual Reports, Sustainability Reports, Theme Reports (UN SDGs Action Reports, Materiality Analysis Reports, Sustainability Impact Valuation Report, Climate and Nature Report, Human Rights Report), and Form 20-F with the U.S. Securities and Exchange Commission •Quarterly earnings conference •Domestic and overseas broker conference •Face-to-face meetings, video conference calls and telephone conference calls •Major announcements on the Market Observation Post System, and corporate press releases on the Company's website
Customers	•Customer satisfaction survey •Business and technology assessment •Customer meetings •Customer visits/audits
Suppliers/Contractors	•Supplier Code of Conduct promotion •Supplier Sustainability Management Self-Assessment Questionnaire (SAQ) •Supply chain environment, safety and health training •Sustainable Supply Chain Environment, Safety and Health Forum •Carbon reduction follow-up meeting with major emission contributors •Supplier meetings •On-site support and audit •Supply Chain Employee Grievance Channel •Supply Online 360 Global Responsible Supply Chain Platform
Government/Industry Associations	•Industry association communication platform •Official correspondence and visits •Offer industry experience and advice, and keynote speech •Conferences (e.g., briefings, public hearings, symposia, seminars, meetups)
Society	•Volunteer activities and services, volunteer cadre meetings •Project collaboration and visit •Sponsorship of charity projects and educational projects •"Sending Love" charity platform •TSMC Education and Culture Foundation and TSMC Charity Foundation websites •ESG website, ESG Newsletter, ESG mailbox and social media (Facebook and LinkedIn)

Responsibilities of ESG Steering Committee and ESG Committee Members

Committee Members	Responsibilities	Stakeholders
Legal	Corporate governance, code of conduct, legal compliance (including fair competition, privacy and personal information, and protection for whistle-blowers), intellectual property, protection of confidential information	Employees Government/Industry Associations Society (Note)
Customer Service	Customers' service and satisfaction, customer trust, customer confidentiality, Responsible Business Alliance and its code of conduct	Customers Government/Industry Associations
Information Technology and Materials & Risk Management	Information security, materials and supply chain risk management, supplier management, conflict minerals, Responsible Business Alliance and its code of conduct; risk management, crisis management, emergency response and action plan	Employees Shareholders/Investors Customers Suppliers/Contractors Government/Industry Associations Society
Quality and Reliability	Product quality and reliability, product recall mechanism	Customers Suppliers/Contractors
Research and Development	Innovation management, green products	Employees Customers Suppliers/Contractors Government/Industry Associations
Business Development	Shaping an energy-efficient technology roadmap; building alliance with customers to foster smarter and greener product innovations; establishing and promoting TSMC as a responsible technology thought leader, and sharing its experiences and achievements	Employees Customers Society
Finance	Financial disclosure, dividend policy, tax strategy	Employees Shareholders/Investors Customers Suppliers/Contractors Government/Industry Associations
Investor Relations	Resolving issues of stakeholder concern, establishing trusting long-term relationships, effective two-way communication, annual report production	Shareholders/Investors
Operations	Operational eco-efficiency, pollution prevention, water resource risk management, green manufacturing	Customers Shareholders/Investors Suppliers/Contractors
Environment, Safety and Health	Environmental policy and management system, climate change mitigation and adaption, pollution prevention, energy consumption efficiency, carbon emissions and carbon rights management, product environmental responsibility, response mechanism for environmental issues, environmental spending, green supply chain, policy and management systems for occupational health and safety, workplace health and safety, occupational disease prevention and health promotion, communication of ESH regulations	Employees Shareholders/Investors Customers Suppliers/Contractors Government/Industry Associations Society
Human Resources	Diversity and inclusion, talent attraction and retention, talent development, human rights	Employees Government/Industry Associations Society
TSMC Education and Culture Foundation	Cultivating young generation, educational collaboration, promote arts and culture	Society
TSMC Charity Foundation	Philanthropy, community relations	Society
Public Relations	Stakeholder engagement, mechanism for reflecting issues of social concern, media relations	Society

Note: Society includes community, non-governmental organizations, non-profit organizations, and the public.

TSMC demonstrated its commitment to sustainable development by publishing a non-financial annual report for the 25th consecutive year and engaging diverse stakeholders in daily operations. Based on the five ESG directions of Drive Green Manufacturing, Build a Responsible Supply Chain, Create a Diverse and Inclusive Workplace, Develop Talent, and Care for the Disadvantaged, TSMC continued to develop more sustainable innovation models. The Company conducted a materiality analysis in line with GRI 3: Material Topics 2021 from the GRI Universal Standards 2021 released in October 2021 by the Global Sustainability Standards Board (GSSB), incorporated the spirit of its risk management policy, and identified ESG issues of significant impact on its operations and potential challenges that need to be addressed at its Taiwan facilities (headquarters, wafer fabs, backend packaging fabs, and testing fabs), TSMC China, TSMC Nanjing, TSMC Arizona, TSMC Washington, LLC, Japan Advanced Semiconductor Manufacturing, Inc., VisEra and other subsidiaries. This process has helped calibrate the Company's sustainable strategy, set goals, implement risk mitigation measures, enhance operational resilience, and deepen its sustainable development capacity. The TSMC sustainability report incorporates the following: the GRI Standards, Task Force on Climate-related Financial Disclosures (TCFD) Recommendations, Taskforce on Nature-related Financial Disclosures (TNFD) Recommendations, Sustainability Accounting Standards Board (SASB) Standards, AA1000 Accountability Principles. TSMC received assurance from the DNV Business Assurance Co. Ltd. that the Company is in compliance with DNV VeriSustain™ Protocol, the GRI standards, SASB Standards, and the TCFD framework.

As the only semiconductor company selected for the Dow Jones Sustainability World Indices for the past 23 consecutive years, TSMC actively fulfills its corporate citizenship responsibilities and responds to the UN SDGs by setting long-term goals for 2030 and implementing corresponding actions. Anchored in the concept of SDG 17 Partnerships for the Goals, TSMC collaborates with internal and external stakeholders to create sustainable value in ESG aspects. Through mutual dialogue, cooperation, and participation, TSMC strengthens resource linkage and overall value chain influence, driving substantial positive change and building a better future for all.

2023 ESG Awards and Ratings

Category	Organization	Awards and Ratings
Overall ESG	Dow Jones Sustainability Indices (DJSI)	•Dow Jones Sustainability World Index for the 23rd consecutive year
	MSCI ESG Indexes	•MSCI ACWI ESG Leaders Index component •MSCI ESG Research – AAA Ratings •MSCI ACWI SRI Index component •MSCI ACWI Islamic Index component •MSCI Emerging Markets ESG Leaders Index
	Sustainalytics	•Company ESG Risk Ratings: Low ESG Risk – Semiconductor Industry
	ISS ESG	•"Prime" Rated by ISS ESG Corporate Rating
	FTSE4Good Index	•FTSE4Good Emerging Index component •FTSE4Good All-World Index component •FTSE4Good TIP Taiwan ESG Index component
	World Benchmarking Alliance (WBA)	•SDG2000 – The 2,000 Most Influential Companies
	S&P Global	•The Sustainability Yearbook Award 2023 – Top 10% S&P Global ESG Score
	Taiwan Institute for Sustainable Energy	•Taiwan Top 10 Sustainability Exemplary Awards for the 8th consecutive year •Corporate Sustainability Report Awards •Circular Economy Leadership Awards •Information Security Leadership Awards •Supply Chain Leadership Awards •Sustainable Water Management Leadership Awards •Climate Leadership Awards
	Morningstar	•The Best Sustainable Companies to Own in 2023
	The Financial Times and Statista	•Asia-Pacific Climate Leaders 2023

(Continued)

Category	Organization	Awards and Ratings
Economy and Governance	Institutional Investor Magazine	•Most Honored Company (Technology/Semiconductors) – All-Asia •Best Overall ESG (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best CEO (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best CFO (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Program (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Professional (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Team (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Company Board (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia
	IFI Claims Patent Services	•Ranked as 3rd in 2023 Top 50 US Patent Assignees
	Forbes	•The World's Top 10 Largest Technology Companies in 2023 •Global 2000
	FutureBrand Index	•FutureBrand Index component
	FORTUNE	•2023 World's Most Admired Companies •Fortune Global 500
	Brand Finance	•Brand Finance Global 500
	Asiamoney	•Overall Outstanding Companies by market •2023 Asia's Outstanding Companies – Semiconductors & Semiconductor Equipment Sector for the 6th consecutive year
	Business Today	•Top 1,000 Enterprises in Taiwan, Hong Kong and Mainland China
	Taiwan Stock Exchange	•Top 5% in Corporate Governance Evaluation of Listed Companies for the 9th consecutive year
	PricewaterhouseCoopers	•Global Top 100 Companies by Market Capitalization for the 11th consecutive year
	R.O.C. Ministry of Economic Affairs Intellectual Property Office	•Ranked No.1 in Taiwan Patent Applications for the 8th consecutive year •Ranked No.1 in Taiwan Patent Grants for the 4th consecutive year
	Germany Federal Office for Information Security	•Common Criteria, ISO/IEC 15408- EAL6 Site Certification – Fab 18A, Fab 18B, AP6, Fab 14A, Fab 14B
	Corporate Synergy Development Center	•Taiwan Continuous Improvement Award – Gold Tower Award – Fab 3 & EBO, Fab 8, Fab 14A, Fab 15B, Fab 18A, IMC •Taiwan Continuous Improvement Award – Silver Tower Award – Fab 2 & Fab 5, CPO, ACCT •Taiwan Continuous Improvement Award – Fab 3, EBO, IMC
	Clarivate	•2023 Top 100 Global Innovators
	LexisNexis	•Innovation Momentum 2023: The Global Top 100
Environment, Safety and Health	Corporate Knights & As You Sow	•2023 Carbon Clean 200™ List
	CDP	•Climate Change B Ratings •Water Security A- Ratings •Supplier Engagement B Rating
	Alliance for Water Stewardship, AWS	•"Platinum" Class Certification for the 4th consecutive year – Fab 5, Fab 6, Fab 12A, Fab 12B, Fab 14P5, Fab 14P6, Fab 14P7, Fab 15A, Fab 15B, AP3
	U.S. Green Building Council	•Leadership in Energy and Environmental Design (LEED) – "Gold" Class Certification – Fab 18P4 Office, Fab 18P6 & P7 Manufacturing Facility, Fab 12P8 Manufacturing Facility
	UL Solutions	•Platinum Rating for UL 2799 Waste Recycling Standard
	Ministry of Environment, R.O.C.	•National Enterprise Environmental Protection Award – Fab 8, Fab 14B, Fab 15B, VisEra •Green Chemistry Application and Innovation Award – Fab 14B, Fab 18P1, AP3
Society	Forbes	•2023 World's Best Employers
	Occupational Safety and Health Administration, Ministry of Labor, R.O.C.	•National Occupational Safety and Health Award – Enterprise Benchmarking Award for the 2nd consecutive year
	CommonWealth Magazine	•Talent Sustainability Award

7.2 Environmental, Safety and Health (ESH) Management

TSMC believes its environmental, safety and health practices must not only meet legal requirements but should also align with internationally recognized best practices. The Company's ESH policies aim to achieve "zero incidents" and "environmental sustainability" and to make TSMC a world-class organization in environmental, safety and health management. The Company's strategies for attaining these goals are to comply with regulations, promote safety and health, strengthen recycling and pollution prevention, manage ESH risks, instill an ESH culture, establish a green supply chain, and fulfill its related corporate social responsibilities.

All TSMC and its subsidiaries' manufacturing facilities have received ISO 14001: 2015 certification for environmental management systems and ISO 45001: 2018 certification for occupational safety and health management systems. TSMC and its subsidiary fabs in Taiwan have each been certified by the Taiwan Occupational Safety and Health Management System (TOSHMS). All the above certifications are maintained and valid. Per TSMC policy, all new facilities are required to attain the aforementioned certifications within 18 months after receiving their facility operating license.

To reduce overall environmental, safety and health risks, TSMC strives for continuous improvement and actively seeks to enhance climate-change management, pollution prevention and control, power and resource conservation, waste reduction and recycling, safety and health management, and fire and explosion prevention, as well as to minimize the impact of earthquake damage.

In order to meet regulatory and customer requirements for the management of hazardous materials, TSMC has adopted the IECQ QC 080000 hazardous substance process management (HSPM) system. All TSMC fabs have been QC 080000 certified and have maintained validity since 2007. Through the establishment of QC 080000, TSMC ensures that its products comply with customer requirements and international regulations including the European Union's Restriction of Hazardous Substances (RoHS) Directive, the EU's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), the Montreal Protocol on Substances that Deplete the Ozone Layer, the "halogen-free in electronic products" initiative, perfluorooctane sulfonates (PFOS), perfluorooctanoic acid (PFOA) and related substances restriction standards. In addition, in 2016 TSMC started a project to minimize usage of the hazardous substance N-methylpyrrolidinone (NMP) and as a result by the end of 2022 NMP use in the Company's Taiwan fabs had been reduced by 97.2% compared to the use in 2016. In 2023, TSMC continued to further reduce NMP usage in its subsidiary fabs and expected to complete process replacement in 2024.

In 2011, TSMC began implementing the ISO 50001 energy management system for continuous improvement in energy conservation. In 2022, all TSMC and its subsidiaries' manufacturing facilities had received ISO 50001 Energy Management System certification and has maintained the certification validity until now except for TSMC Washington. TSMC Washington in the U.S. plans to receive this certification in 2024.

Aiming to establish the healthiest possible workplace, in 2017 TSMC formed a corporate-level health promotion committee led by executives at the vice president level to address on an ad-hoc basis occupational disease cases or other health issues. The committee members include site directors, managers of safety and health department, and representatives from wellness, HR and legal affairs divisions. External experts have also been invited to discuss the potential risks of occupational diseases in the semiconductor manufacturing process and prevention plans for such diseases. To mitigate health risks to employees, suppliers and contractors in the workplace, TSMC has adopted rigorous safety and health control measures focused on preventing occupational injuries and diseases and promoting employee safety, physical and mental health.

To minimize supply chain risk and fulfill corporate social responsibility, TSMC not only follows ESH best practices internally but also strives to improve the ESH performance of its suppliers and contractors through audits and counselling.

TSMC uses priority work management and self-management to govern services provided by contractors. The Company requires contractors performing level-one high-risk operations to complete certification for technicians and to establish their own ISO 45001 safety and health management system. The emphasis on self-management nurtures the sense of responsibility, with the goal of promoting safety awareness and technical improvement for all contractors in the industry. For onsite contractor personnel, TSMC has standardized courses on safety and health and increased the frequency of such courses to improve training effectiveness and safety awareness. To ensure that the Company's safety protocols are accurately delivered to contractors on a timely basis, TSMC has established a digital platform for mutual communication so that onsite operational risks can be mitigated.

TSMC collaborates with suppliers to manage the sustainability of the supply chain, including formulating supplier sustainability standards, drawing up audit plans, performing audits and tracking improvements, coaching and training, and additional instruction for suppliers with subpar performance. Strengthening the professional capabilities of suppliers in environmental protection, safety and health, fire response, and carbon inventory were key focuses in 2023. To achieve the goal, the Company held the environmental protection, safety and health workshops (57 participants from 52 suppliers), fire emergency response workshops (60 participants from 51 suppliers), supplier carbon inventory workshops (28 participants from 24 suppliers) and environmental protection, safety and health workshops for suppliers' senior managers (29 participants from 17 suppliers). In addition, for the past eight years suppliers have been invited to observe TSMC's annual emergency response drills (accumulated 195 participants from 190 suppliers) and the Company's environmental, safety and health sustainability forum focused on successful case sharing

(359 participants from 117 suppliers). TSMC also conducts environmental, safety and health audits at supplier manufacturing sites and actively assists suppliers in improving their ESH performance. Finally, the Company requests that suppliers conduct a carbon emissions inventory and encourages them to implement measures to save energy, reduce carbon emissions, conserve water and reduce waste.

7.2.1 Environmental Protection

Climate Change and Energy Management

- Task Force on Climate-related Financial Disclosures (TCFD)

In view of the potential financial risks of climate change on operations, in 2018 TSMC adopted TCFD recommendations released by the Financial Stability Board (FSB) to identify risks and opportunities and further establish metrics and management targets based on the results identified.

Management Structure of TSMC Climate-related Risks and Opportunities

Category	Management Strategy and Actions
Governance	Board of Directors periodically reviews climate change related risks and opportunities •ESG Steering Committee: TSMC's top organization in climate change management. Chaired by the Chairman of TSMC with the chairperson of the ESG Committee serving as executive secretary. The Committee reviews TSMC's climate change strategies and goals every quarter and reports to the Board of Directors. •Energy Saving and Carbon Reduction Committee: The Company's management organization for taking action on climate change risk and opportunity. It is chaired by the Vice President of Fab Operations. Every quarter, this Committee formulates management plans, reviews implementation status, and discusses future plans.
Strategy	Identify short-, medium- and long-term climate risks and opportunities through cross-departmental discussion
	Use scenario analysis to assess the potential operational and financial impact of significant climate risks and opportunities to the Company
	Promote low carbon manufacturing to approach net zero emissions and strengthen climate resilience
	Through communication and coaching, enhance suppliers' climate risk awareness and response capabilities, and cooperate with suppliers to actively develop and implement specific carbon reduction actions
Risk Management	Use the TCFD framework to establish TSMC's climate risk identification process
	Follow the risk identification and ranking on climate change to develop relevant responding projects
	Integrate climate risk identification and assessment into the enterprise risk management (ERM) process
Metrics and Targets	Set management metrics related to climate change
	Develop carbon emission reduction targets for TSMC and its suppliers and regularly review the progress on achieving said targets

Financial Impact Analysis and Response of Climate Risks and Opportunities

Climate Risks	Potential Financial Impact	Climate Opportunities	Potential Financial Impact	2023 Actions
Greenhouse Gas (GHG) Emissions Cap and Carbon Tax/Carbon Fee	Restrictions on capacity expansion, increases in operation costs	•Participation in renewable energy plans •Participation in carbon trading market	Early purchases of renewable energy, successfully increasing production capacity	•Entered into power purchasing agreements for renewable energy totaling 3.1GW •Used 2,590 GWh in renewable energy, and increased the proportion of renewable energy use to 11.2% •Achieved 100% renewable energy used in overseas subsidiaries and offices for the sixth consecutive year •Purchased 284 thousand tons of carbon credits to achieve net zero emissions of overseas plants
Trend to Net Zero Emission	•Increased cost of installation and operation of carbon reduction equipment •Increased cost of purchasing carbon offset products	Win public recognition and carbon emissions offset cooperation	Accumulate carbon credits in preparation for future carbon emissions offset	•Received carbon credit for fluorinated-GHG and nitrous oxide reduction offset project about 600 thousand tons •100% use of carbon neutral natural gas from Chinese Petroleum Corporation in TSMC Taiwan fabs •TSMC global offices used carbon credits to achieve net zero emissions
		Develop low-carbon product services to improve product energy efficiency	Satisfy customers' needs for energy-saving products and increase revenue	•Developed energy saving products for the 5nm, 3nm and more advanced manufacturing process
Commitment of Environmental Impact Assessment (EIA)	The development of advanced technologies potentially hampered by inability to obtain renewable energy and reclaimed water	Use reclaimed water	Smooth construction of advanced production lines	•Consumed reclaimed water 12.61 million cubic meter/year
Uncertainty of Development of New Energy Saving Technology	Rising electricity consumption in advanced technology production lines increases production costs	Construct green buildings	Reduce utility costs	•Received five green building certifications

(Continued)

Climate Risks	Potential Financial Impact	Climate Opportunities	Potential Financial Impact	2023 Actions
Impact on the Company's reputation	Inability to satisfy the expectations of stakeholders, negatively impacting the Company's reputation	Improve the Company's reputation	Upgrade TSMC performance in stakeholders' sustainability ranking	•Led the industry as the only semiconductor company chosen for the Dow Jones Sustainability Indices (DJSI) for the 23rd consecutive year
Drought (TSMC Operation) Drought (Supply Chain) Flooding (TSMC Operation) Flooding (Supply Chain)	Production negatively affected, causing financial losses and a decrease in revenue	Increase resilience and ability to cope with natural disasters	Strengthen resilience in coping with climate change impact, lower risk of operations disruption, and reduce potential losses	•Raised the building base of Fab 18 Phase 8 and Fab 14 Phase 8 two meters higher •Fab 18 Phase 8 and Fab 14 Phase 8 committed to using and developing reclaimed water •Required suppliers to assess drought and flooding risk in operating facilities and implement related risk reduction actions •Implemented drills based on drought emergency procedures
Rising Temperatures	Increase in electricity consumption, cost, and carbon emissions	Strive for low-carbon, green manufacturing	Save energy and cut costs	Conserved 830 GWh of electricity through energy-saving projects

Greenhouse Gas (GHG) Emission Reduction and Energy Management

TSMC remains committed to becoming a global leader in green manufacturing. In response to threats presented by extreme weather, TSMC sets strategies and targets, ensures sound execution and strives to build a sustainable culture. In 2021, TSMC announced its long-term goal of net zero emissions by 2050, while setting the short-term goal of zero growth in emissions by 2025. By actively implementing emission reduction measures, the Company is working to return its carbon emissions to 2020 levels by 2030.

The Company actively participates in the initiatives of the World Semiconductor Council (WSC), and has leveraged its past experience to develop best practices, which have been fully adopted and implemented by the Company since 2012, to reduce perfluorinated compounds (PFC) emissions. In 2013, in accordance with the Ministry of Environment's regulation Early Actions for Carbon Credit of Greenhouse Gases Reduction, TSMC applied for recognition of GHG reduction from 2005 to 2011 and received 5.28 million tons of carbon dioxide credits in 2015. Those carbon credits can be used to offset GHG emissions of new manufacturing facilities regulated by Environmental Impact Assessment (EIA) Act, which can support the Company's sustainable operations and mitigate climate-change risk.

Since 2005, TSMC has completed the GHG inventory program and taken a complete inventory of its GHG emissions to gain ISO 14064 certification. The inventory shows that the major direct GHG emissions are PFCs, which are widely used in the semiconductor manufacturing process. The primary indirect GHG emission is electricity consumption. The analysis of the inventory data was performed not only to meet domestic regulatory reporting requirements but also to serve as a baseline reference for the Company's strategy to reduce GHG emissions. Since 2005, TSMC has also participated in the international disclosure and rating agency CDP to publicly disclose climate change information for 19 consecutive years and to continuously review and improve related management practices.

In response to the commitment of global climate summit Paris Agreement and the Republic of China's Greenhouse Gas Reduction and Management Act promulgated in 2015, TSMC initiated a cross-functional platform for carbon management in 2016. The three areas of focus of this platform are legal compliance, emission reduction, and carbon credit acquisition. In addition to participating in official regulatory consultation and communications meetings, the Company also sets short-, medium- and long-term reduction targets through the Energy Saving and Carbon Reduction Committee led by the fab operations vice president. The measures are carried out by energy and carbon reduction teams of individual fabs. Because more than 80% of TSMC's GHG emissions come from electricity consumption, the Company emphasizes energy conservation and carbon reduction initiatives. TSMC has not only implemented energy-conserving designs in its manufacturing fabs and offices but has also continuously improved the energy efficiency in operating its facilities. These efforts simultaneously reduce carbon dioxide gas emissions and costs. As a result, TSMC has conserved 3.9 billion kilowatt hours (kWh) of power since 2016. In February 2023, Taiwan renamed the "Greenhouse Gas Reduction and Management Act" to the "Climate Change Response Act" and amended the provisions. Relevant laws and regulations are being formulated. TSMC will continue to monitor and evaluate the potential impact on the Company, so as to respond early.

Since 2018, TSMC began to aggressively negotiate the purchase of renewable energy with suppliers in Taiwan. Targeting a long-term commitment of 100% renewable energy, TSMC has committed to achieving 60% renewable energy by 2030. Since 2018, the overseas manufacturing fabs and offices have purchased renewable energy, REC and carbon credits to offset all carbon emissions caused by power consumption. All TSMC overseas sites achieved net zero emissions in 2023 again. Although development of renewable energy in Taiwan is in an early stage, TSMC has established a renewable energy task force and continues to communicate closely with government. In the hope that the collaboration would speed up renewable energy development in Taiwan, the Company has made recommendations to the government. TSMC continues to find renewable energy. By the end of 2023, the total installation capacity of renewable energy contracted reached 3.1GW (gigawatts). The renewable energy will be provided to TSMC gradually after the related business process has been completed. This is a clear manifestation of the Company's active support of the UN Sustainable Development Goals (SDGs).

In 2020, TSMC became the first semiconductor company to join RE100, the global corporate renewable energy initiative, and pledged that power consumption of all the Company's manufacturing plants and offices would be 100% supplied from renewable energy by 2050. In 2023, TSMC further announced the acceleration of the RE100 sustainability process in response to climate change and mitigation of climate impacts by moving up the original goal from 2050 to 2040.

TSMC GHG Reduction Target and Achievement Status

Strategy	2030 Goal	2023 Target and Achievement	Achievement Status
Continue to use best available technology to reduce GHG emissions and become an industry leader in low-carbon manufacturing	Reduce GHG emissions per unit product (metric ton of carbon dioxide equivalent ($MTCO_2e$)/12-inch equivalent wafer mask layer) by 30% (Base year: 2020)	Reduced GHG emissions per unit product (metric ton of carbon dioxide equivalent ($MTCO_2e$)/12-inch equivalent wafer mask layer) increased by 31% (Target: -9%)	Unachieved (Note)

Note: Due to the impact of the global economic cycle, the overall production capacity of TSMC in 2023 did not meet expectations, resulting in an increase in unit product GHG emission and failure to achieve the annual target. Therefore, TSMC will continue to implement energy saving and carbon reduction related actions.

Air and Water Pollution Control

The Company has installed air and water pollution control equipment in each fab to meet regulatory emissions requirements. In addition, TSMC maintains backup pollution control systems, including emergency power supplies, to mitigate the risk of pollutant emissions in the event of equipment failure. The Company centrally monitors the operations of its air and water pollution control equipment 24 hours a day by rotating staff and treats system effectiveness as an important tracking item to ensure the quality of emitted air and discharged water.

To further enhance water resources management, TSMC has adopted and followed the Alliance for Water Stewardship (AWS) standard, the sustainable water management standard. In 2022, TSMC AWS certified fabs (Note) in Taiwan's three science parks including Hsinchu, Central Taiwan and Southern Taiwan obtained AWS Platinum certification – the highest level available and it has maintained it platinum-level certification in subsequent years.

Furthermore, the Company has upgraded the internal water platform (Water Map) to diverse water supply integration platform. In addition to improving use interface, the platform also includes diverse water use information like reclaimed water quality and quantity to fully grasp and manage the usage of water within the fab from all aspects, not only continuously tracks water reservoir capacity but also monitors in-house water quality and quantity. Based on the water balance diagram, it further integrates the water usage flow, flow rate, and recycling mechanisms to calculate the recovery rate, discharge rate, and water usage of each unit to improve water recycling rate. In 2023, TSMC continued to implement four major water saving measures: improving the water production rate of the system, reducing facility system water consumption, increasing the wastewater recycling of facilities, and decreasing water discharge loss from the system, and the overall system has increased recycled water use by 4.28 million cubic meters.

Note: TSMC AWS certified fabs include Advanced Backend Fab 3, Fab 5, Fab 12A/B, Fab 15A/B, Fab 6, Fab 14B and Fab 14 Phase 7, covering the watersheds of all the fab locations across the Hsinchu, Central Taiwan and Southern Taiwan Science Park.

The goal of water management at TSMC is to optimize utilization of every drop of water. In addition to positively implementing process water-saving measures, TSMC collaborates with industrial, governmental, and academic organizations to invest in the development of water reclamation technology. Through participation in the professional committee activities of the Taiwan Science Park Association, TSMC shares water-saving experiences and professional knowledge with semiconductor industry peers to achieve the common goal of the entire park and ensure long-term water resource supply-demand balance. In order to further circulate the use of water resources and support the government's promotion of reclaimed water policy, TSMC launched the Southern Taiwan Science Park Reclaimed Water Plant operation in September 2022, the first private water reclamation plant in Taiwan, and introduced reclaimed water into the semiconductor manufacturing process. In addition to reclaimed water supplied by TSMC's Southern Taiwan Science Park Reclaimed Water Plant, TSMC's fabs in Southern Taiwan Science Park started using reclaimed water supplied by the Yongkang reclaimed water plant and the Anping reclaimed water plant when they started up in later 2022 and early 2023 respectively. The supply of above reclaimed water exceeded 62.5 thousand cubic meters per day in 2023. By the end of 2023, 1.261 million cubic meters of reclaimed water had been used in the semiconductor manufacturing process in TSMC's Tainan fabs, helping the Tainan fabs reduce city water usage by 21% and TSMC reach the replacement rate of reclaimed water up to 12%. TSMC commits to continuing to increase the utilization of reclaimed water in newly constructed fabs in the future.

TSMC Water Usage in Recent Two Years

Year	Total Water Usage (m^3) (Note 1)	Unit Product Water Usage (L/12-inch wafer-e-layer)
2023	113,610,463	176.4
2022	104,681,272	137.3

TSMC Water Usage Reduction Target and Achievement Status

Strategy	2030 Goal	2023 Target and Achievement	Achievement Status
Enforce climate change mitigation policies, implement water conservation and water shortage adaptation measures	Reduce unit water consumption (liter/12-inch equivalent wafer mask layer) by 30% (Base year: 2010)	Increased unit water consumption by 25.24% (Target: -2.7%)	Unachieved (Note 2)

Note 1: Includes TSMC fabs in Taiwan and subsidiaries total use of city water and reclaimed water.
Note 2: Due to the impact of the global economic cycle, the overall production capacity of TSMC in 2023 did not meet expectations, resulting in an increase in unit product water consumption and failure to achieve the annual target. Therefore, TSMC will continue to implement process water saving and the use of reclaimed water.

Waste Management and Recycling

In recent years, as TSMC continued to develop advanced processes and expand capacity rapidly both at home and overseas, waste production has increased due to the complexity of new process development, demand for reliable yield rates, and increasing use of raw materials.

To achieve the goal of sustainable resource utilization, TSMC has a designated unit responsible for waste recycling and disposal. The priorities are process waste reduction onsite and offsite recycling and regeneration, with incineration and landfill as the least desirable final option. In 2017, TSMC amended its articles of incorporation to add four business items for chemical materials to enhance waste process flow and reduce risks of improper waste disposal by commissioned agencies. It also set up onsite resource activation facilities to convert waste resources produced during manufacturing process into products to be used onsite or to sell to other industries. TSMC recycled copper sulfate waste, cobalt-containing liquid waste, sulfuric acid waste and ammonium sulfate waste, all of which were regenerated into products. The Company also developed a system of cryolite synthesis whereby hydrogen fluoride (HF) waste is recycled and regenerated into raw material that can be used in other industries. As a result, the Company has become a leader in waste resources regeneration. At the same time, TSMC's fabs in Taiwan achieved a 95% waste recycling rate for the ninth consecutive year, with a landfill rate below 1% for the 14th consecutive year. Furthermore, TSMC's Taiwan fabs became the first semiconductor facilities in the world to jointly obtain the highest platinum rating for UL 2799 certification in 2023. This achievement builds on the success of TSMC's Fab 12 Phase 1 and Phase 2 in gaining the UL 2799 platinum certification in 2021. TSMC will continue to strive towards its goal of net-zero emission by 2050 reaffirming its commitment to the SDG 12.

TSMC Waste Quantity and Outsourced Unit Waste Disposal in Recent Two Years (Note 1)

Year	Outsourced General Waste (ton) (Note 2)	Outsourced Hazardous Waste (ton) (Note 2)	Outsourced Unit Waste Disposal (Note 3) (kg/12-inch equivalent wafer mask layer)
2023	285,605	371,236	1.17
2022	342,804	401,215	0.99

Note 1: The data in the table are preliminary results collected by TSMC and have not yet been verified by a third party
Note 2: Totals include Taiwan and subsidiary facilities
Note 3: Taiwan facilities

TSMC Waste Reduction Target and Achievement Status

Strategy	2030 Goal	2023 Target and Achievement	Achievement Status
Promote waste reduction by source separation and require vendors to provide low chemical consumption equipment	Outsourced unit waste disposal per wafer ≤0.50 (kg/12-inch equivalent wafer mask layer)	Outsourced unit waste disposal per wafer 1.17 (kg/12-inch equivalent wafer mask layer) (Target: ≤0.98%)	Unachieved (Note)

Note: The main reason was production decreased while waste generation did not decrease proportionally.

In order to ensure that all waste is treated and recycled properly, TSMC closely tracks the recycling and reuse practices of its cleanup and disposal vendors. The Company carefully selects waste disposal and recycling vendors that are certified and have required permits. TSMC regularly checks the onsite operational status, disposal declaration forms, operational records, etc., to compare with actual reuse and disposal, and takes proactive steps to strengthen vendor auditing. For example, all waste transportation contractors have agreed to join the GPS Satellite Fleet so that the cleanup transportation routes and abnormal stays for all trucks can be traced. All waste recycling and disposal vendors have installed closed-circuit TV systems at operating sites to monitor and audit waste handling. At the same time, to further guarantee proper waste handling, in 2022 TSMC built the system of waste intelligent fast track (S.W.I.F.T.) and completed five different types of waste treatment vendors for pilot testing. As of 2023, 29% of waste treatment vendors have instituted S.W.I.F.T. and TSMC intends to roll it out to all waste treatment vendors in 2030. Using AI technology in lieu of in-person on-site spot checks increases inspection efficiency 65-fold and reduces manual inspection by 13,000 hours each year. In addition, TSMC conducts ongoing surveys of recycled product tracking and requires all recycling contractors to report their recycled product sales monthly to track waste flow and ensure that actions are taken to adhere to lawful and proper waste recycling and treatment.

Environmental Accounting

The purpose of TSMC's environmental accounting system is to identify and quantify environmental costs for internal management. At the same time, the Company also calculates and evaluates the savings or economic benefits of environmental protection programs so as to continuously promote economically effective programs. While environmental expenses are expected to continue to rise, environmental accounting can help manage these costs more effectively. TSMC's environmental accounting measures various environmental costs, establishes independent environmental account codes, and provides the data to all units for use in annual budgeting. The Company's economic benefit evaluation calculates cost savings for energy conservation, water or waste reductions and recycling benefits in accordance with its environmental protection programs. The benefits disclosed in this report include real income from projects such as waste recycling as well as savings from major environmental projects. In 2023, the total benefits of environmental protection programs of TSMC fabs including waste recycling exceeded NT$3,160 million.

2023 Environmental Cost of TSMC Fabs in Taiwan

Unit: NT$ thousands

Classification	Description	Expense	Investment
1. Direct Costs for Reducing Environmental Impact			
(1) Pollution Control	Fees for air pollution control, water pollution control, and others	12,527,395	21,936,725
(2) Resource Conservation	Costs for resource (e.g. water) conservation	-	7,322,372
(3) Energy Conservation	Costs for electricity consumption saving	-	3,370,600
(4) GHG Reduction	Include: (1) Process GHG emissions abatement equipment; (2) Premium for purchasing renewable energy; (3) Costs for purchasing carbon credits; (4) Other costs for direct GHG emissions reduction	1,405,002	3,962,322
(5) Industrial Waste Disposal and Recycling	Costs for waste treatment (including recycling, incineration and landfill)	3,844,746	-
2. Indirect Costs for Reducing Environmental Impact (Environmental Managerial Costs)	(1) Cost of employee environmental training (2) Environmental management system and certification expenditures (3) Environmental impact measurement and monitoring fees (4) Environmental protection product costs (5) Environmental protection organization fees	751,872	1,137,685
3. Other Environmental Costs	(1) Costs for soil decontamination and natural environment remediation (2) Environmental damage insurance fees and environmental taxes and expenses (3) Costs related to environmental settlement, compensations, penalties and lawsuits	-	-
Total		18,529,015	37,729,703

2023 Environmental Efficiency of TSMC Fabs in Taiwan

Unit: NT$ thousands

Category	Description	Efficiency
1. Cost Savings of Environmental Protection Projects	Energy savings	1,326,241
	Water savings	53,419
	Waste reduction	1,127,000
2. Economic Efficiency for Industrial Waste Recycling	Recycling of used chemicals, wafers, sputter targets, batteries, lamps, packaging materials, paper cardboard, metals, plastics, and other waste	656,000
Total		3,162,660

Green Building and Green Factory

Since 2006, TSMC has adopted standards from both the Taiwan Green Building and the U.S. Green Building Council – Leadership in Energy and Environmental Design (LEED) for new fab and office building designs to achieve better energy and resource efficiency compared to conventional designs. The Company has also continued to upgrade existing office buildings to comply with the LEED standard each year. From 2008 to 2023, 44 of TSMC's fabs and office buildings achieved LEED certifications: three platinum and 41 gold. During this time, the Company also received six Taiwan Intelligent Building diamond-class certifications and 29 Taiwan ecology, energy saving, waste reduction and health (EEWH) certifications: 21 diamond, six gold and two silver. Since 2009, the Company has been a leading supporter of the Taiwan government's Green Factory Label standard, including the Clean Production and Factory Green Building evaluation systems. TSMC received Taiwan's first Green Factory Label and 14 labels in total as of the end of 2023 and is the most awarded company of this label in Taiwan.

Environmental Audit Results in Violation of Environmental Regulations

In 2023 and as of the date of this Annual Report, TSMC has had no environmental regulation violations.

7.2.2 Sustainable Products

TSMC collaborates with its upstream material and equipment suppliers, design ecosystem partners and downstream assembly and testing service providers to minimize environmental impact. Reducing the resources and energy consumed for each unit of production allows the Company to provide customers with more advanced, power efficient, and ecologically sound products. These include ultra-low power (ULP) and low operating voltage (low Vdd) chips for wearables and IoT devices, low-power chips for mobile devices, high-efficiency LED driver chips for flat panel display backlighting, indoor/outdoor solid state LED lighting, Energy Star certified low standby AC-DC adaptor chips, high-efficiency DC brushless motor chips, electric vehicle chips and low-power server chips. By leveraging TSMC's superior energy-efficient technologies, these chips support sustainable city infrastructure, greener vehicles, smarter grids, more energy efficient servers and data centers and other applications. In addition to helping customers design low power, high performance products to reduce resource consumption over the product's life cycle, TSMC's green manufacturing practices provide additional green value to customers and other stakeholders.

TSMC-manufactured ICs are used in a broad variety of applications in various segments of the computer, communications, consumer, industrial, electric vehicle, server and data center, and other electronics markets. Through TSMC's manufacturing technologies, customers' designs are realized and their products are incorporated into people's lives. These chips, therefore, make significant contributions to the progress of modern society. The Company endeavors to achieve profitable growth while providing products that add environmental and social value. Listed below are several examples of how TSMC-manufactured products make significant contributions to the environment and society.

Environmental Contributions by TSMC Foundry Services

1. Continuously Drive Technology to Reduce Power Consumption and Save Resources

- To play its part in achieving sustainability, TSMC continues to drive the development of advanced semiconductor process technologies to help customers create more advanced, energy-efficient and environmentally friendly products. In each new technology generation, circuitry line widths shrink, making transistors smaller and reducing product power consumption for completing the same tasks or achieving the same level of performance. In addition, calculations using the Industry, Science, and Technology International Strategy Center's model reveal that in 2020 TSMC helped the world conserve 4kWh of energy for each 1kWh spent in production – a testimony to TSMC's commitment to green manufacturing both internally and externally. (Please refer to "Sustainable Products by TSMC Facilitates Global Energy Conservation" on page 11 of TSMC's 2020 Corporate Social Responsibility Report.)

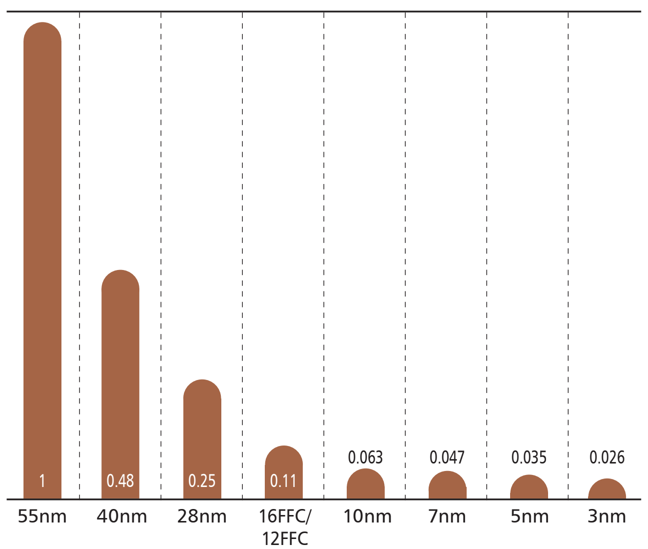
- As TSMC quickly ramped up its 7nm and newer generation technologies, combined wafer revenue contribution of 7nm and technologies beyond grew significantly from 9% in 2018 to 58% in 2023. TSMC's objective is to continue R&D investment and increase wafer revenue contribution in 7nm and technologies beyond, helping the Company achieve both profitable growth and sustainability.

TSMC Wafer Revenue Contribution from 7nm and Technologies Beyond

2018	2019	2020	2021	2022	2023
9%	27%	41%	50%	53%	58%

Chip Die Size Cross-Technology Comparison

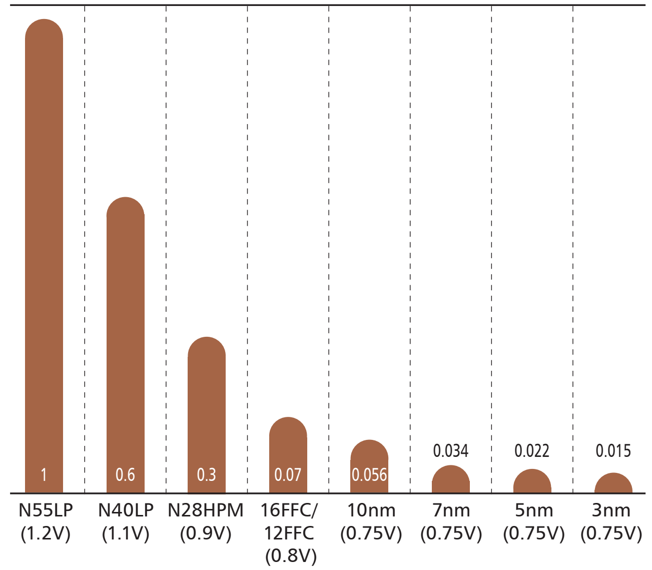
Die size reduces as line width shrinks



Note: The logic chip/SRAM/IO (input/output) ratio, which affects die size and power consumption, was re-aligned.

Chip Total Power Consumption Cross-Technology Comparison

More power is saved as line width shrinks



Note: The logic chip/SRAM/IO (input/output) ratio, which affects die size and power consumption, was re-aligned.

2. Provide Customers Leading Power Management IC Processes with the Highest Efficiency

- TSMC's leading manufacturing technology helps customers design and produce green products. Power management chips, the key components that supply and regulate power to all other IC components within electronic devices, are the most notable green IC products. TSMC helps customers produce industry-leading power management chips with more stable and efficient power supplies and lower energy consumption. Power management ICs manufactured by TSMC for its customers are widely used in computer, communication, consumer, electric vehicle, server and data center, and other systems around the globe.

3. Drive Industry-leading, Comprehensive ULP Technology Platform

- To meet low-power consumption requirements for IoT markets, such as smart wearable, smart home, health care and smart city for IoT products, TSMC continues to invest in expanding and enhancing its ultra-low power processes. The Company provides industry's leading and most comprehensive ULP technology platform to support various smart edge devices, including smart watches, hearing aids, pacemakers, continuous glucose monitoring (CGM) devices, environment monitoring, and smart grid infrastructure. TSMC's industry-leading ULP offerings include FinFET-based 12-nanometer technology, N12e™, featuring energy efficiency with high performance that results in more computing power and AI inferencing, 22nm Ultra-low leakage (ULL), 28nm ULP, 40nm ULP, and 55nm ULP, which have been widely adopted by various edge AI system-on-a-chip (SoC), battery-powered applications. TSMC has also extended its low Vdd offerings with simulation program with integrated circuit emphasis (SPICE) models with a wide-range of operating voltages for extreme low-power applications.

4. Develop Greener Manufacturing to Lower Energy Consumption

- TSMC continues to develop more advanced and efficient technologies to reduce energy/resource consumption and pollution per unit during the manufacturing process, as well as power consumption and pollution during product use. In each new technology generation, circuitry line widths shrink, making chips smaller for the same circuit designs and lowering the energy and raw materials consumed for per chip in manufacturing. In addition, the Company continuously provides process simplification and new design methodology based on its manufacturing excellence to help customers reduce design and process waste so as to produce more advanced, energy-saving and environmentally friendly products. For total energy savings and benefits realized in 2023 through TSMC's green manufacturing, see "Environmental Accounting" on page 162-163 in this annual report.

Social Contributions by TSMC Foundry Services

1. Unleash Customers' Mobile and Wireless Chip Innovations that Enhance Mobility and Convenience

- The rapid growth of smartphones and tablets in recent years reflects strong demand for mobile devices, which accelerates innovations for IC products such as baseband, RF transceivers, application processors (AP), wireless local area networks (WLAN), CMOS image sensors (CIS), near field communication (NFC), Bluetooth, and global positioning systems (GPS), ultra-wide band (UWB), organic light-emitting diode (OLED) display drivers and power management ICs (PMIC) among others. These mobile devices offer remarkable convenience in daily living, and TSMC contributes significant value to these devices in the following ways: (1) new TSMC process technologies help chips achieve faster computing speeds in smaller sizes, leading to smaller form factors for these electronic devices. In addition, TSMC SoC technology integrates more functions into one chip, reducing the total number of chips in electronic devices, again resulting in a smaller system form factor; (2) new TSMC process technologies also help chips reduce power consumption, allowing mobile devices to be used for a longer period of time between recharges; and (3) TSMC helps spread the growth of more convenient wireless connectivity such as 3G/4G/5G and WLAN/Bluetooth, meaning people can communicate more efficiently and "work anytime and anywhere," significantly increasing the productivity and mobility of modern society.

2. Unleash Customer Innovations in CMOS Image Sensors (CIS) and Micro-Electromechanical Systems (MEMS) that Enhance Human Health and Safety and Create Green Products

- To make machines smarter, safer and more user and environmentally friendly, sensors are a must. Optical, acoustic, motion, and environment sensors are mostly made using either CIS or MEMS technologies. TSMC continues to put substantial effort into developing more advanced CIS and MEMS technologies to enable customers to create new products for new applications. For CIS, TSMC and customers have extended applications from traditional RGB (red, green, blue) sensing to 3D depth sensing, optical fingerprint, and near infrared (NIR) machine vision, etc. For MEMS, TSMC and customers have extended applications from traditional motion sensing to microphone, bio-sensing, micro-speakers, medical ultrasound actuators and more. TSMC customers' sensing devices are used in consumer electronics, mobile communications, automotive electronics, industrial, and medical devices, and so on. They are increasingly smaller, faster, more accurate and more energy efficient, greatly enhancing human convenience, health and safety, and contributing to sustainability.

As an example, TSMC customers introduced the latest automotive CIS products for car safety systems in 2023, which makes the advanced driver assistance systems (ADAS) and autonomous driving systems smarter and safer. In addition, adopting TSMC's innovative MEMS technology, TSMC customers successfully introduced next-generation MEMS speakers, featuring smaller form factor and better high frequency response. These features further improve user experience by enabling more flexible industry design, bigger battery space and closer to natural sound quality for hearing aid and consumer grade hearing assistance devices.

7.2.3 Safety and Health

Safety and Health Management

TSMC's safety and health management complies with local and international standards and adheres to the management approach of Plan, Do, Check, Act to prevent accidents, promote employee safety and health, and protect Company assets. All TSMC fabs in Taiwan have received Taiwan Occupational Safety and Health Management System (TOSHMS) certification since 2009. In 2018, the International Organization for Standardization released ISO 45001: 2018, replacing OHSAS 18001, with major changes in the expansion of the scope, support and participation of the leadership, collection and planning of internal and external issues, the expectations and demands of stakeholders, the assessment of risk inspections, communication and consultation with non-managers, the application of performance indicators, and the evaluation of corrective and preventive actions. Meanwhile, ISO 45001 ensures the spirit of the system can be effectively implemented at the management level through management review, internal audit, automatic check, and security patrol to identify safety concerns and opportunities for improvement. All Company fabs in Taiwan received ISO 45001 certification for occupational health and safety in 2019 and all TSMC subsidiaries obtained the certification in 2020. All the above certifications have been maintained. New facilities, including TSMC Arizona, Japan Advanced Semiconductor Manufacturing, Inc. (JASM), are required to receive aforementioned certifications within 18 months upon receiving facility license per TSMC's internal policy.

In addition to accident prevention, TSMC has established emergency response procedures to protect employees and contractors if a disaster should occur, as well as to prevent and/or reduce the negative impact on the community and the environment. TSMC communicates regularly with suppliers to ensure that the potential risk in operating production equipment is minimized and that safety control procedures are followed rigorously during installation. The Company places stringent controls on high-risk operations and also evaluates the seismic tolerance of its facilities and equipment to reduce the risk of earthquake damage.

For epidemics, TSMC has established corporate-level prevention committees and procedures for emergency response to outbreaks of infectious diseases.

Working Environment and Employee Safety and Health Protection

The Company's ESH policy is focused on establishing a safe working environment, preventing occupational injury and illness, keeping employees healthy, enhancing every employee's awareness and sense of accountability to ESH, and building a strong ESH culture.

There were a total of 48 occupational injuries at TSMC in 2023, involving 48 people, representing approximately 0.07% of the total number of employees. The disabling injury frequency rate (FR) was 0.35, under the 0.4 target, and the disability injury severity rate (SR) was 4, not meeting the target of less than 4. TSMC is reviewing potential improvement measures, such as the promotion of safety culture-related posters or animations to strengthen employee safety awareness. By implementing interactive communication training courses on safety culture, TSMC can integrate safety into daily life and encourage employees to proactively discuss safety-related issues. To reduce sports injuries, it is mandatory for the welfare committee and departments to conduct risk identification and hazard reminders before organizing sports activities. The Company continuously observes operations and conducts compliance inspections to identify potential injury risks in the workplace and implement improvement measures to enhance workplace safety. In addition to regular reviews, the caring program for employees has been enhanced and managers have been directed to pay closer attention to the physical and mental state of employees to ensure their safety and health while at work.

TSMC safety and health management operations apply to the following:

- Equipment Safety and Health Management

In addition to meeting regulatory requirements and internal standards, as well as mitigating ESH-related risks when building or expanding facilities, TSMC also maintains procedures governing new equipment and raw materials, requires safety approvals for bringing new tools online, updates safety rules, and implements seismic protection and other safety measures.

TSMC requires that all new tools meet SEMI-S8 requirements and that appropriate supplementary control measures be taken to reduce ergonomic risk. Moreover, the Company endeavors to automate the transportation of 300mm front-opening unified pods (FOUPs) to prevent cumulative physical injury caused by repetitive manual handling of this equipment. TSMC 300mm fabs have all converted to automatic transportation control.

- Environmental, Safety and Health Evaluation of New Tools and New Chemical Substances

As a technology leader in the global semiconductor industry, TSMC operates increasingly diversified process tools and introduces new chemicals in the R&D stage. Before using new tools or new chemicals, they are reviewed carefully by the new tool and new chemical review committee. The purpose is to ensure that new tools are compliant with the semiconductor industry's safety standards (such as SEMI-S2) and that environmental, safety and health concerns about new chemicals are addressed and controlled including the use of engineering controls and personal protection equipment, as well as operational safety training during storage, transportation, use and disposal. A total of 417 cases of new tools and chemical substances were approved by the new tool and new chemical review committee in 2023 after they were evaluated and reviewed in accordance with the aforementioned standards and before entering TSMC.

- General Safety Management, Training and Audit

All TSMC manufacturing facilities hold environmental, safety and health committee meetings on a monthly basis. TSMC has adopted multiple preventive measures such as controls on high-risk work, contractor management, chemical safety management, personal protective equipment requirements, and safety audit management. In addition, the Company maintains detailed disaster response procedures and performs regular drills designed to minimize injuries to employees and damage to property, as well as the impact on society and the environment in the event of a disaster.

TSMC Safety-related Training and Promotion in Recent Two Years

Year	Total Number of Employees Who Have Completed Safety-related Training
2023	297,403
2022	271,702

- Working Environment Hazardous Factors Management

TSMC conducts workplace hazard assessments to provide a comfortable, safe workplace for employees. The Company also educates employees and requires them, when appropriate, to use personal protective equipment (PPE) to prevent hazardous exposures.

The Company performs semi-annual workplace environment assessments of physical and chemical hazards, including CO_2 concentration, illumination, noise, and hazardous chemical substances as regulated by local laws. In addition, TSMC performs exposure assessments and uses hierarchy management control for chemicals with potential health hazards. If abnormal measurements occur, events happen, or an exposure assessment indicates there is an adverse health effect on employees, ESH professionals immediately conduct onsite observation and intervention to reduce the risk of hazardous factors exposure to acceptable levels.

- Health Promotion Program

In order to establish the healthiest possible workplace and reduce the incidence of occupational disease, TSMC formed a corporate-level committee to carry out health promotion programs covering three key areas:

1. Exposure and health risk assessment: develop an exposure assessment system to identify high health risk employees.
2. Hazardous training and notification: use standardized training materials for employees and contractors in all TSMC fabs. Inform them of the health risks and prevention measures at the workplace before they begin working or providing any services there.
3. Strengthening management of chemicals with significant health risks: request suppliers that all materials they provide to TSMC comply with applicable laws including clear disclosure of any hazardous substances. Perform sampling of raw materials used in the manufacturing process to confirm that they do not contain any carcinogenic, mutagenic or toxic-reproductive materials as claimed on supplier's safety data sheet (SDS).

- Emergency Response

The planning and execution of an effective emergency response requires identifying potential high-risk events via risk assessment and being prepared for various scenarios. It should focus on continuous improvements and drills covering all potentially serious events. TSMC's emergency response plans include procedures for rapid-response crisis management and disaster recovery for potential incidents.

All TSMC fabs conduct major annual emergency response exercises and evacuation drills. TSMC's onsite service contractors are also required to participate in emergency response planning and exercises to ensure cooperation in handling accidents and to effectively minimize any damage caused by disasters. In 2023, the Company held 132 evacuation drills and 36 fire drills. At least every two years, each fab director invites fab management and support functions to participate in business continuity drills for potentially high-risk events such as earthquake, fire and flood (at the Tainan site). Since 2018, TSMC has conducted complex accident emergency response drills, which include simultaneous scenarios for earthquake, fire and chemical spills to ensure rapid response to emergencies so that losses can be minimized in the event of a real disaster. In 2020, TSMC took the lead in the industry to introduce the all-hazard approach as recommended by the Federal Emergency Management Agency (FEMA) to conduct disaster prevention exercises.

In response to the COVID-19 pandemic, TSMC added tabletop exercises to disaster prevention training in an effort to minimize the risks of group infections that may arise as a result of full-scale exercises. The inclusion of tabletop exercises also aids in the verification of full-scale exercise procedures to make disaster response more comprehensive, thus effectively mitigating the impact of various types of disasters on business continuity in the future. As of 2023, in addition to 644 sessions of tabletop exercises, 91 full-scale exercises had also been completed.

In addition to the regular emergency response drills held by engineering and facilities departments each quarter, the Company's laboratory, canteen, dormitory, and shuttle bus personnel also hold emergency response drills to prepare for events such as earthquakes, chemical spills, ammonia release, fires and traffic accidents.

- Emerging Infectious Disease Response

TSMC has a dedicated corporate ESH organization to monitor emerging infectious diseases around the world, to assess any potential impact on the workplace, and to provide an appropriate strategic response plan. In previous outbreaks such as SARS in 2003, H1N1 influenza in 2009, and MERS in 2015, as well as with COVID-19 from 2019 to 2023, TSMC followed the Taiwan CDC's (Center for Disease Control) rules and convened the corporate influenza response committee to develop the Company's strategies. These strategies included educating employees in prevention and response, publishing guidelines for managers, establishing guidelines for employee sick leave, and installing alcohol-based hand sanitizers at appropriate locations. The Committee also monitors the status of employee leave due to illness and, at the same time, develops a continuity plan to address manpower shortages and minimize business impact. For example during the COVID-19 outbreak, in order to protect the health of TSMC employees, their families, and work partners, employees were encouraged to be fully vaccinated if in healthy condition. In addition, TSMC reviewed the situation from time to time and formulated appropriate preventive measures such as daily body temperature checks and updated vaccination information before entering Company facilities and continued to follow epidemic prevention recommendations such as mask wearing, frequent hand washing and social distancing.

- Employee Physical and Mental Health Enhancement

TSMC believes that employee physical and mental health is not only fundamental to maintaining sound business operations but is also an important part of a corporation's responsibility. To preserve and promote the physical and mental health of its employees, TSMC fosters collaboration among the onsite industrial safety and environmental protection department, the onsite medical personnel of the health center, and physicians of occupational medicine. TSMC strives to reduce cerebral and cardiovascular conditions or injuries that might be induced or aggravated by overwork, night work or shift work. The Company conducts programs for maternal health protection and for prevention of cumulative trauma disorders as well. TSMC devotes significant resources to mental health awareness, focused not only on hazards at work but also on employee health in general. In 2023, planned personal health management activities included: (1) 497 female employees participated in the maternal health program, and the completion rate was 100%. 496 of them were at first degree risk, where there was no potential harm to the mother or infant. One female employee was assessed as second degree risk, with potential harm to the mother or infant, but after proper adjustments to her work duties, her risk was downgraded to first degree. (2) Through analysis of historical cerebral and cardiovascular cases of its employees, TSMC sharpened the disease assessment criteria used by contracted doctors, and, in combination with internal annual health examination reports and work scheduling information, the Company was able to identify 2,830 employees with middle to high risk for cerebral and cardiovascular diseases. These employees were provided with health education and medical assistance. Also, they and their managers received recommended changes in working hours and shifts to reduce health risks. (3) 170 employees were identified as high risk for cumulative trauma disorders, including one who might also have job-related risks, and the Company adjusted working conditions accordingly to reduce potential risks. (4) As obesity has been considered as a precursor to hyperglycemia, dyslipidemia, and hypertension and insomnia, TSMC has held health promotion programs for several consecutive years. In 2023, in light of the COVID-19 pandemic and catering to the younger generation's preference for social and video media, apart from physical weight loss activities (5,782 participants; total weight loss reached 5,263 kg),TSMC conducted a series of online interactive activities including: (a) Fourteen sessions of "Health Lecture Online" with 7,142 attendees in total; (b) Nine health workshops with a total of 238 person-times; (c) Activities of World Mental Health Day with a total of 2,189 attendees. The above activities have all received positive feedback from employees. In the future, the Company will continue to implement relevant promotional activities to take care of the health of employees.

7.2.4 Supplier Management

Management Aspect

For better supply chain management, TSMC is committed to communicating with and encouraging its suppliers and contractors to increase their quality, cost effectiveness and delivery performance, and make continuous improvement in supply chain sustainability. Through regular communication with senior managers, site audits and experience sharing, the Company collaborates with major suppliers and contractors to enhance partnerships and ensure continued improvement of performance and increased joint contributions to society. As noted above, contractors performing high-risk activities must lay out clearly defined safety precautions and preventative measures. In addition, contractors working on high-risk engineering projects must establish ISO 45001 or OHSAS 18001 systems and the workers must successfully complete work-related skill training. All contractors performing high-risk activities obtained ISO 45001 certification before the end of 2021.

Supply Chain Sustainability

TSMC works with suppliers in several fields of sustainable development, such as greening the supply chain, carbon management for climate change, mitigation of fire risk, ESH management and business continuity plans in the event of a natural disaster.

Since becoming a full member of the Responsible Business Alliance (RBA) in 2015, TSMC has completed implementation of the RBA code of conduct throughout the Company by performing self-assessments at its facilities worldwide and reviewing policies and procedures in the areas of labor, health and safety, environment, ethics and management systems.

To enhance supply chain sustainability and streamline risk management, the Company is committed to collaborating with its suppliers to maintain full compliance with Taiwan's environmental, safety, health and fire protection regulations. TSMC developed a supplier's code of conduct, which affirmed basic labor rights and standards for health, safety, environment, ethics and management systems. TSMC works with suppliers to evaluate the risk and impact on the economy, the environment, and society and to make continuous improvement. The Company has helped boost suppliers' performance of sustainability through experience sharing and training and hopes to establish a world-class semiconductor supply chain that exceeds international standards and serves as a global benchmark.

TSMC is subject to the U.S. Securities & Exchange Commission (SEC) disclosure rule on conflict minerals released under Rule 13p-1 of the U.S. Securities Exchange Act of 1934. As a recognized global leader in the high-tech supply chain, the Company acknowledges its corporate social responsibility to ensure procurement of conflict-free minerals in an effort to recognize humanitarian and ethical social principles that protect the dignity of all people. To this end, TSMC has implemented a series of compliance safeguards in accordance with leading industry practices such as adopting the due diligence framework in the Organization for Economic Cooperation and Development (OECD)'s Model Supply Chain Policy for a Responsible Global Supply Chain of Minerals from Conflict-Affected and High Risk Areas, issued in 2011.

TSMC is a strong supporter of the RBA and the Global e-Sustainability Initiative (GeSI). As a member of RBA, TSMC requires suppliers source conflict-free minerals through their jointly developed Responsible Minerals Initiative (RMI). Since 2011, TSMC has asked its suppliers to disclose and make timely updates on smelters information. The Company encourages suppliers to source minerals from facilities or smelters that have received a "conformant" designation by a recognized industry group (such as the RMI) and also requires those who have not received such designation to become compliant with RMI or an equivalent third-party audit program. TSMC requires the use of conflict-free tantalum, tin, tungsten and gold in its products.

TSMC will continue to conduct the supplier survey annually and require suppliers to improve and expand their disclosure to fulfill regulatory and customer requirements. For further information, see the Company's Form SD filed with the U.S. SEC. (https://investor.tsmc.com/english/sec-filings)

7.3 TSMC Education and Culture Foundation

In 2023, the TSMC Education and Culture Foundation focused on three major areas: cultivation of the younger generation, educational collaboration, and promoting arts and culture. In order to meet these objectives, the Foundation committed NT$99 million to work towards achieving three of the United Nations 17 sustainable development goals (SDGs): SDG 4 Quality Education, SDG 5 Gender Equality, and SDG 11 Sustainable Cities and Communities. Foundation activities included organizing trips to science and arts museums for students from rural areas to broaden their horizon, empowering teachers in rural areas to elevate students' literacy, and hosting popular science camps for young women from senior high school so as to spark their interest in STEM fields. In doing so, the Foundation contributed to sustainable development and created a positive impact on our society.

Create Diverse Platforms, Encourage the Young to Explore More Opportunities

The TSMC Education and Culture Foundation has long dedicated itself to young people's development. Hence the Foundation regularly organizes science and humanity learning platforms in the various forms of competitions, camps and lectures to spark young students' interest in the humanities and science. The Foundation joins forces with several educational institutes and media outlets to tap into great potential of the younger generation.

For the eighth TSMC Udreamer, themed "sowing a seed of dreams," the Foundation held a special exhibition that combined the dream-building journey of popular science writer Rui-Ming Wang (*Fat Fat Tree*) and organized events such as a guided ecological tour of the Botanical Garden, lectures and fairs as a way to inspire the younger generation to pursue their dreams. More than 5,000 person-times participated in this series of events reaching a historical high. In addition the Foundation launched the TSMC Udreamer mentorship program whereby 15 TSMC employees joined the mentorship effort to accompany competition teams along their nine-month journey of a dream-building project through professional training workshops and regular experience sharing to help the students be connected with the society and fully realize their potential through a multi-dimensional educational philosophy and design.

For artistic education to take root in children at an early age, the Foundation teamed up with the Sun Yun-Suan Foundation and the *Mandarin Daily News* to organize the first TSMC Penmanship Competition, thereby encouraging students to understand the beautiful lines embedded in Chinese characters by utilizing tools found in everyday life and to further enhance their own sense of beauty. The first competition was well-received and drew 4,824 entries. In addition to the Penmanship Competition, the Foundation continued to further develop the art of Chinese calligraphy and seal-carving. The 16th TSMC Youth Calligraphy and Seal-Carving Competition drew its inspiration from calligraphic characters seen in everyday life on billboards and signboards in the streets, urging the public to observe and appreciate Taiwan's unique signboards in Chinese characters. The Foundation invited two artists, Jun-Lin Ye and Liang-Zhi Ke, for a face-to-face conversation to share their knowledge of font design and calligraphy. The two artists also discussed the information embedded in and aestheticism conveyed through the Chinese characters on signboards. Their talks addressed the essence and beauty of the art of Chinese characters, increasing the public's knowledge of and interest in the arts of calligraphy and seal-carving.

The TSMC Youth Literature Award, co-organized by TSMC Education and Culture Foundation and the *United Daily*, celebrated its 20th anniversary in 2023 and received 13,752 entries. As part of the celebration, the Foundation also held three special literary events: Online Book Exhibitions of Past Award Winners, Risingsun Awards, and Documentary of Portraits of TSMC Youth Literary Writers. The Risingsun Awards grants its award to the most representative works of fiction, essays and contemporary poems as selected by a panel of judges of writers, Wen-Yin Zhong, Yu-Hui Liao and Wen-Wei Xu, from the published works of former TSMC Youth Literature Award winners and upcoming literary stars, which included 22 novels, 15 essays and 17 contemporary poems. The final Risingsun Awards were granted to the tenth award winner Zhen-Fu Xu, the first award winner Jie-An Chen, and the third award winner Zi-Xuan Zhuang. Judging from the list of the winners, it can be said that the literary seeds sown by the TSMC Youth Literature Award over the past 20 years are now growing into a flourishing garden of literature.

Apart from the humanities, TSMC Education and Culture Foundation has long promoted popular science education, sponsoring a wide range of science competitions and camps. The Foundation continued its partnership with Center for the Advancement of Science Education of National Taiwan University to hold the TSMC Cup: Competition of Scientific Short Talk, which included two events: competition for expressing scientific innovation and essay awards on reading popular science books, which aim to encourage young students to read popular science books and watch related videos. The events hope to enhance students' capacity to convey scientific knowledge through internalizing skills of analyzing and discussing science with dialectical logic. The competition for expressing scientific innovation, expanded its scope in 2023 and, as a result, not only did students in Taiwan enter the competition, but teams from as far as Malaysia also participated. More than 400 people took part in the two competitions. The Foundation has long funded the three major science camps for gifted students in Taiwan, Chien-Shiung Wu science camp, Ta-You Wu science camp and Marie Curie (formerly Madame Curie) science camp as a way to cultivate domestic talent in fundamental science. The TSMC Female Scientists Tour, on the other hand, focused on kindling female high school seniors' passion for science. Each year, young women from 12 senior high schools in Taiwan are invited to visit science museums, participate in science workshops and attend talks by female scientists, who can encourage female students to keep on exploring the STEM fields by relating their own education and work experience.

Work in Tandem with Educational Partners, Realize Quality Education

The TSMC Education and Culture Foundation works in tandem with public and private educational institutions – schools, NGOs and state-funded arts and educational institutes – to pool available resources and focus on the real needs of the society so as to reach those who need but have no accessible resources and allow quality education to be realized in every corner of Taiwan.

In 2021 the TSMC Education and Culture Foundation launched a five-year Teaching & Learning Project, in partnership with *CommonWealth Magazine* Education Foundation and Prof. Hwawei Ko Reading Research Center of National Tsing Hua University. The project aims to improve the measurement and evaluation of learning effectiveness through empowering teachers, to enhance teachers' literacy teaching capacity through technological integration, and to assist teachers in teaching reading comprehension. As the project reached its third year, the teaching plan was adjusted in accordance with actual practice so that the project would better fit the teachers' needs. In doing so, the Teaching & Learning Project gradually transformed from a one-way resource into a two-way communication activity and therefore provided more solid support for school teachers in rural areas. So far 127 teachers and 1,341 students have participated in the project. The Foundation also continued its collaboration with Junyi Academy to develop and promote online courses that cater to the real needs of teachers and students in rural areas and narrowing the gap of available sources between the urban and rural areas. The Foundation also funded scholarships and sponsored free laptops for 101 outstanding students from disadvantaged backgrounds at five national universities: National Central University, National Tsing Hua University, National Chung Cheng University, National Cheng Kung University, and National Sun Yat-sen University so that students from disadvantaged backgrounds can be free of financial worries and focus on their academic performance.

A three-way partnership with the Foundation, the National Symphony Orchestra (NSO), and Taipei National University of the Arts was launched and continued to promote the Music sans frontier Educational Project, which invited internationally-renown conductor Shao-Chia Lu and NSO's music director Jun Markl to university campuses to broaden music students' horizons. The initiative further arranged internships at the orchestra for the students enrolled in the class as a way to enrich their stage experience. The Foundation also carried on its collaboration with GuoGuang Opera Company to continue its three-year "on-campus project: Passing on Traditional Theatre Heritage," starting from 2021. This project offers a year-long course at both National Tsing Hua University and Tunghai University for three years consecutively. The course contents included the knowledge of the theater, Peking Opera analysis and appreciation, Peking Opera performance demonstration, showcasing and combining theoretical knowledge and hands-on performance practices, guiding 115 number of students to learn about and experience the beauty of theater. A public performance is scheduled at the end of this 3-year project that showcases the course's teaching and learning is scheduled to take place at the Main Theater of Taiwan Traditional Theatre Center in 2024. In 2023, TSMC Theater Lectures also broadened its scope. In addition to its partnership in passing on traditional theater with GuoGuang Opera Company, two other theater companies – Taiwan Kunju Opera Theatre and Hsing Legend Youth Theatre – came together to organize events specially designed for high school seniors in Hsinchu, Taichung and Tainan. 1,620 person-times participated in the events, which fostered the appreciation and understanding of traditional theater.

In 2023, the TSMC Education and Culture Foundation enhanced the contents of the TSMC Aesthetics Trip and the TSMC Science Trip from museum trips to in-depth educational courses. The trips still offer students guided tours to important permanent exhibitions at arts and science museums, but they now also offer lectures on art appreciation, hands-on workshops and science workshops with trained lecturers. The lectures guide primary students from rural areas to experience and learn in depth subjects on historical culture and artifacts, arts and aesthetics, architectural landscape and science. Finally, in order to assist junior high school students to appreciate the beauty of literature, the Foundation continued its partnership with Unitas literary magazine to organize the third TSMC Youth Literature Camp at the Emei Junior High School in Hsinchu. The Camp expanded to be an event lasting four days and three nights with the goal of improving literary education for junior high school students and guiding them to appreciate the beauty of novels, essays, scripts and theater so that literature can take root in their lives.

Supporting Arts and Culture Teams, Promoting Cultural Canon

In addition to providing continuous quality education, the TSMC Education and Culture Foundation furthers dedicates itself to preserving traditional culture, funding long-term support for domestic and international performance teams, and promoting quality arts performances in local communities, thereby lifting the public's spirits, promoting good and beauty in society.

In 2023, the TSMC Hsinchu Arts Festival reached its twentieth anniversary and invited domestic and international artists to participate so they could give their talents full play to this year's theme, Ode to Youth. Among the performances, Youthful Whispering, a piece of a dance theater, was choreographed by a youth-run theater company from Hsinchu Plan B Theatre. Fifteen rising stars, selected from roughly 100 who auditioned, were trained intensively over the course of four months. The performers' youthful vivacity and physical rhythm exhibited explosive theatrical energy at their performance at the Moat Park in Hsinchu city and received loud applause and shouts of Bravo! from the 3,000 person-times strong audience from the local community. As part of the effort to promote exquisite performances, there were two other programs: the xiangsheng (traditional Chinese comic dialogues) Qu, Blooming into 30-Year Brilliance, performed by both second and third generation xiangsheng artists. The fact that the piece is taught hands-on to the third generation of young xiangsheng artists such as Ming-Han Song and Yin-Xie Wu by the second generation xiangsheng artists such as De-Gang Zhu, Guang-Yao Fan, and Yi-Jun Ye at the 30-year-old Taipei Qu Company is particularly meaningful as the process embodies the act of passing on tradition. The popular Berliner Barock Solisten, founded by leading members of the Berliner Philharmoniker, together with Yu-Chien Tseng, the prize-winning violinist of the international Tchaikovsky Competition, brought to the audience world-class performances of classical music. The 2023 TSMC Hsinchu Arts Festival organized 47 exquisite performances and exhibitions throughout, attended by over 52,000 person-times community members.

In addition to fine performances and exhibitions, the Foundation also funds radio programs, helping the public appreciate the beauty of theater and literature. The Stories of Peking Opera radio program on Sound of IC radio station, co-hosted by An-Qi Wang the artistic director of GuoGuang Opera Company and Prof. Shih-Lung Lo at the Department of Chinese Literature of National Tsing Hua University, introduced the public to fine and elegant theater through analyzing texts and the history of theater and interviewing theater maestros. This program was nominated for the Best Host of Arts and Culture at the 58th Golden Bell Awards. On another front, Yi-Yun Xin, a master in classic Chinese literature who has been presenting a radio lecture on Chinese classics on Sound of IC radio station since 2008, presented a new program in 2023, Yi-Yun Xin on Chinses Fu Verse, focusing on Chinese classical Fu verse and sharing the beauty of classic literature with the audience 1.62 million person-times tuned in to listen to the two programs: Stories of Peking Opera and Yi-Yun Xin on Chinese Classical Fu Verse.

As a way to enrich university campuses with arts and culture, the TSMC Education and Culture Foundation organizes the annual TSMC Lectures series at the end of each year. The lectures series invites renowned scholars in the humanities to introduce the public and college students to the richness of literature, history and philosophy. In 2023, the series specifically invited Yu-Shan Wu, academician at and founder of Institute of Political Science at Academia Sinica, to discuss Russia-Ukraine War. By analyzing the historical roots and the power dynamics between large and small countries, academician Wu offered a systematic analysis of this international war and what can be learned from it. Nearly a thousand community members attended the lectures.

7.4 TSMC Charity Foundation

Established in 2017 and led by its chairperson Sophie Chang, the TSMC Charity Foundation (the Foundation) focuses on empowering communities in rural and suburban areas in three ways: education empowerment, taking care of the elderly, and protecting the environment. Internally, the Foundation calls on TSMC volunteers' onsite/online services to address social inequalities and leverages its industrial network advantages to strengthen cooperation with local governments, enterprises and universities externally. Both the Foundation and the TSMC volunteers were committed to providing educational, medical and social welfare resources to children in rural schools or disadvantaged educational institutions, as well as to their families who were in urgent need of financial support, to help cultivate long-term career capabilities and improve their quality of life independently. The Foundation continued to operate the Sending Love platform to strengthen the cooperation among enterprises, local governments and universities so as to strengthen local services and jointly uplift society.

In 2023, the Foundation demonstrated its dedication to investing in public welfare and expanding projects to improve its scope of services:

- Education Empowerment

The Foundation continuously provides educational and living assistance to institutes in need and to children in rural areas, including volunteer services, economic support, food supplies and the purchase of digital learning equipment and materials. From 2022, the Foundation focused on rural students' employability. In 2023, the Foundation worked with six city governments to organize job fairs for senior high and vocational high school students, with career exploration and job placement designed as the main highlights. The aim was to focus resources on these two issues to help students identify certain targets early on and discover even more diverse career options, which eventually benefited more than 12,000 participants. In helping rural students obtain the skills to work locally, four enterprises, IKEA, LDC Hotels & Resorts Group, Howard Resort Xitou Hotel, and Panasonic Taiwan Co., Ltd., joined in 2023 to give training to seven senior vocational high schools and extended job offers to 68 students. The Foundation also spread the acknowledgement of vocational education by organizing a junior high school vocational expo and parent-child career workshops, as well as collaborating with 104 JOB BANK to promote the Road to Employment Program, inviting 104 professionals to appear on film and share their career stories. A dedicated website was also built to showcase these stories, encouraging students to use them as a reference in choosing their career paths.

The Foundation assisted 31,133 students from rural areas in 2023. TSMC volunteers used their professional knowledge to develop science popularization AI lesson plans with ideas generated by ChatGPT, which were later modularized and promoted to 35 science education activities by the Foundation, benefiting a total of 1,093 children.

The Foundation's Sending Love platform initiative visited and screened disadvantaged individuals in need of financial support and also provided financial assistance and daily necessities made possible by internal and external donations from TSMC to improve the living conditions of highly vulnerable and disadvantaged families. As of 2023, the Foundation had supported a total of 295 families.

- Taking Care of the Elderly

The Foundation collaborates with Network of Compassion partners to enhance the health and welfare of solitary elders by connecting them with social welfare groups and medical units. In 2022, the Foundation cooperated with National Yang Ming Chiao Tung University and Guandau Hospital to establish a smart exercise club for the elderly, and introduce the TSMC volunteer services to prevent disability and delay aging through exercise. In 2023, the Foundation launched the adaptability assessment system for TSMC volunteers. The system not only provides guidance for employees to join the volunteer team but also encourages retired colleagues to explore themselves. With the Foundation's volunteer training programs, the TSMC retired colleagues can contribute their experience and knowledge to society, thus better managing their next stage of life.

- Protecting the Environment

The Foundation helped disadvantaged social welfare institutes to increase the use of green energy and save power, while also continuing to implement the Cherish Food program to reduce resource waste. The Green Energy for the Disadvantaged project was launched in 2021, and by 2023 the Foundation had installed solar panels at seven social welfare institutes, which can supplement these institutes' operating expenses by selling green energy. The LED Lighting Replacement program helped 240 schools to reduce electricity costs by at least 30% with energy-saving lights. In the Cherish Food program, the Foundation continued to work with many food companies to donate out-of-spec foods to 150 disadvantaged social welfare institutes in order to provide children with after-school snacks, thereby reducing food waste. Current collaborators include Chi Mei Frozen Food Co., Ltd., Hunya Food Co., Ltd., Laurel Corporation, Lian-Hwa Foods Corp., Hsin Tung Yang Co., Ltd., and Lao Xie Zhen Co., Ltd.

7.5 TSMC i-Charity

The TSMC i-Charity platform, launched in 2014, is an interactive intranet site that employees use to propose charity projects, share project results, provide suggestions and responses, and conduct timely funding of activities to give back to society.

In 2023, a total of 62,351 people donated more than NT$71.68 million to support programs such as Lighting Up the Rural Learning Dream, Delivery of Fruit and Vegetables from Sheltered Farms, and four regular fundraising projects in helping baseball sports and academic education in rural areas and other fundraising projects.

The TSMC i-Charity platform has accumulated more than NT$343 million in donations since its inception in 2014. TSMC continues to carry out its social commitments and encourages its employees to care for and give back to society in various ways.

7.6 Sustainability Development Implementation Status as Required by Taiwan Financial Supervisory Commission

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Summary	
1. Does the Company have a governance structure for sustainability development and a dedicated (or ad-hoc) sustainable development organization with Board of Directors authorization for senior management, which is reviewed by the Board of Directors?	V		For the Company's governance structure for sustainability development, please refer to"7.1 Environmental, Social and Governance (ESG) – Overview" on page 152-156 of this Annual Report. For the structure, operations, implementation status and frequency of reporting to the Board of Directors of the Company's dedicated organization for sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 152-156 of this Annual Report. For progress of the Board of Directors' supervision of the Company's sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 152-156 of this Annual Report.	None
2. Does the Company follow materiality principle to conduct risk assessment for environmental, social and corporate governance topics related to company operation, and establish risk management related policy or strategy?	V		For the Company's scope of risk assessment, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 152-156 of this Annual Report. For the principle, process and result of the Company's materiality analysis of ESG related topics and risk management related policy or strategy, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 152-156 of this Annual Report.	None
3. Environmental Topic (1) Has the Company set an environmental management system designed to industry characteristics?	V		(1) For the Company's environmental management system and the regulations on which it is based, please refer to "7.2 Environmental, Safety and Health (ESH) Management" on page 156-169 and "6.3.3 Operational Risks – Risks Regarding Non-Compliance with Export Control, Environmental and Climate Change Related Laws, Regulations and Accords, and Failure to Timely Obtain Requisite Approvals Necessary for Conducting Business" on page 145-146 of this Annual Report. For the Company's international certifications and their scope, please refer to "7.2 Environmental, Safety and Health (ESH) Management" on page 156-169 of this Annual Report.	None
(2) Is the Company committed to improving resource efficiency and to the use of renewable materials with low environmental impact?	V		(2) For the Company's improvement of resource efficiency and the use of renewable materials, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Waste Management and Recycling" on page 158-159, 161-162 of this Annual Report.	
(3) Does the Company evaluate current and future climate change potential risks and opportunities and take measures related to climate related topics?	V		(3) For the Company's evaluation of potential risks and opportunities of current and future climate change and measures taken related to climate topics, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management" on page 158-159 of this Annual Report.	
(4) Does the Company collect data for greenhouse gas emissions, water usage and waste quantity in recent two years, and set greenhouse gas emissions reduction, water usage reduction and other waste management policies?	V		(4) For the Company's statistical data, intensity and data coverage for greenhouse gas emissions, water usage and waste quantity in recent two years, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Greenhouse Gas (GHG) Emission Reduction and Energy Management/Air and Water Pollution Control/Waste Management and Recycling" on page 158-159, 159-160, 160-161, 161-162, "7.7 Climate-related Information of Listed Companies – TSMC GHG Emissions in Recent Two Years" on page 176 of this Annual Report. For the Company's policies on the reduction of greenhouse gas emissions, water usage and waste management, please refer to "7.2.1 Environmental Protection" on page 158-163 of this Annual Report. For the Company's certification status of each data set and its scope, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Greenhouse Gas (GHG) Emission Reduction and Energy Management/Air and Water Pollution Control/Waste Management and Recycling" on page 158-159, 159-160, 160-161, 161-162 of this Annual Report.	
4. Social Topic (1) Does the Company set policies and procedures in compliance with regulations and internationally recognized human rights principles?	V		(1) For the Company's policies and specific programs in compliance with regulations and internationally recognized human rights principles, please refer to "5.6.1 Human Rights Policy and Specific Actions" on page 112-113 of this Annual Report.	None
(2) Has the Company established appropriately managed employee welfare measures (include salary and compensation, leave and others), and link operational performance or achievements with employee salary and compensation?	V		(2) For the Company's employee welfare measures, including salary and compensation, diverse and fair workplace, leave, allowance, bonuses, and subsidies, please refer to "5.6.6 Competitive Overall Compensation", "5.6.2 Diversity and Inclusion", "5.6.3 Workforce Structure", and "5.6.7 Employee Benefit System Superior to Statute" on page 115-116, 113, 114, 116-117 of this Annual Report. For the information on how the Company's operational performance or achievements are reflected in the policy and implementation of employee salary and compensation, please refer to "5.6.6 Competitive Overall Compensation" on page 115-116 of this Annual Report.	
(3) Does the Company provide employees with a safe and healthy working environment, with regular safety and health training?	V		(3) For the Company's status with respect to providing employees with a safe and healthy working environment, with regular safety and health training, please refer to "7.2.3 Safety and Health" on page166-169 of this Annual Report. For the Company's related certification status and its scope, please refer to "7.2.3 Safety and Health" on page166-169 of this Annual Report. For a presentation and analysis of the Company's occupational accidents in the current year and the number of employees involved, as well as related improvement measures taken, please refer to "7.2.3 Safety and Health" on page166-169 of this Annual Report. The number of fire incidents and the number of casualties in the given year, and the ratio of the number of casualties to the total number of employees, and improvement measures related to fire incidents: In 2023 and as of the date of this Annual Report, there were two fire incidents in the new construction site of TSMC and its subsidiary, which did not result in any injuries or deaths. The improvement measures at construction sites include (1) strengthening fire operation and personnel control measures, (2) adding mobile water mist fire extinguishing equipment, and (3) conducting annual fire emergency response and notification drills.	
(4) Has the Company established effective career development training plans?	V		(4) For the scope and implementation of the Company's employee training plans, please refer to "5.6.5 Talent Development" on page 114-115 of this Annual Report.	
(5) Does the Company's product and service comply with related regulations and international rules for customers' health and safety, privacy, sales, labelling and set policies to protect consumers' or customers' rights and consumer appeal procedures?	V		(5) Not applicable as TSMC is not an end product manufacturer. For the Company's policy to protect customers' rights, please refer to "5.4.1 Customers" on page 110 of this Annual Report.	
(6) Does the Company set supplier management policy and request suppliers to comply with related standards on the topics of environmental, occupational safety and health or labor right, and their implementation status?	V		(6) For the Company's supplier management policy and related compliance norms, and specific requirements for suppliers in environmental protection, occupational safety and health or labor rights, please refer to "7.2.4 Supplier Management" on page 169 and "5.6.1 Human Rights Policy and Specific Actions" on page 112-113 of this Annual Report. For a description of the implementation of the Company's supplier management policy and related compliance norms, please refer to "7.2.4 Supplier Management" on page 169 of this Annual Report.	
5. Does the Company refer to international reporting rules or guidelines to publish Sustainability Report to disclose non-financial information of the Company? Has the said Report acquire third party verification or statement of assurance?	V		For the reporting rules and guidelines that the Company follows in disclosing non-financial information in the Sustainability Report, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 152-156 of this Annual Report. For third party verification of the Sustainability Report, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 152-156 of this Annual Report.	None
6. If the Company has established its sustainable development code of practice according to "Listed Companies Sustainable Development Code of Practice," please describe the operational status and differences. TSMC follows the ESG Policy set by the Chairman, Dr. Mark Liu, to promote the Company's sustainable development through concrete practices. For sustainable development operational status, please refer to "7. Environmental, Social and Governance (ESG)" on page 150-176 of this Annual Report and environmental social governance related information on the Company's website: https://esg.tsmc.com/en-US				
7. Other important information to facilitate better understanding of the Company's implementation of sustainable development: Please refer to TSMC's website for its sustainable development implementation status: https://esg.tsmc.com/en-US				

(Continued)

7.7 Climate-related Information of Listed Companies

Items	Execution Status
1. Description on the Board and Management's oversight and governance on climate-related risks and opportunities	•ESG Steering Committee: TSMC's top organization in climate change management. Chaired by the Chairman of TSMC with the chairperson of the ESG Committee serving as executive secretary. The Committee reviews TSMC's climate change strategies and goals every quarter and reports to the Board of Directors •Energy Saving and Carbon Reduction Committee: The Company's management organization for taking action on climate change risk and opportunity. It is chaired by the Vice President of Fab Operations. Every quarter, this Committee formulates management plans, reviews implementation status, and discusses future plans
2. Description on how the identified climate risks and opportunities impact the company's business, strategies, and finance (short, mid, longterm)	TSMC holds the Climate Change Risk and Opportunity Workshop once every two years to identify and update climate risks and opportunities based on the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) framework. Please refer to the "Financial Impact Analysis and Response of Climate Risks and Opportunities" table for details on page 158-159 of this Annual Report.
3. Description on the impact extreme climate events and transitional actions have on finance	Please refer to the "Financial Impact Analysis and Response of Climate Risks and Opportunities" table for details on page 158-159 of this Annual Report.
4. Description on how the climate risk identification, assessment, and management process is integrated in the overall risk management system	Please refer to the Risk Management in "Management Structure of TSMC Climate-related Risks and Opportunities" table for details on page 158 of this Annual Report.
5. Should scenario analysis is used to assess the Company's resilience in face of climate change risks, explanations on the scenario, parameters, hypothesis, analysis factors and major financial impacts should be provided	TSMC selected high-emission scenarios (SSP5-8.5) from IPCC AR6 to analyze physical risks and assess the potential short, mid and long-term risks in TSMC facilities and supply chains. In addition to the existing flood, drought, and heat risks, the Company further evaluated risks such as wind disasters from typhoons, landslide disasters, and rising ocean levels. Meanwhile, TSMC increased its scope to cover all facilities around the world as well as five critical supply chains - direct raw materials, indirect raw materials, equipment, fab facilities, and parts and components. Analysis of physical risks shows that the risks of droughts are the most significant physical risks, which cause the impact to self-operation resulting financial loss and revenue decrease due to water shortage.
6. Should there be transitional programs in response to managing climate-related risks, please explain the program's content and metrics and targets used to identify and manage physical and transitional risks	TSMC actively implements greenhouse gas reduction measures in accordance with the 2050 Net Zero Transition Plan, in order to achieve the RE100 target by 2040 and net-zero emissions by 2050. Throughout the process, TSMC will continue to introduce the best energy-saving and carbon-reducing technologies to reduce emissions, and will continuously expand the use of renewable energy until reaching the RE100 goal. Ultimately, TSMC plans to achieve the net-zero transition target by partially offsetting emissions with carbon credits.
7. Should the internal carbon pricing is used as the planning tool, the pricing mechanism should be explained	Internal carbon prices include carbon tax (fee), regulatory fines, carbon reduction and renewable energy cost, carbon market price.
8. Should climate-related targets are in place, information such as their scope of action, GHG emissions, planned timeline, and yearly achieved progress should be stated; for targets achieved through carbon offset and RECs, the source of offset amount and number of RECs should be stated	1. Reduce unit GHG emissions by 30% compared to the base year (metric ton of carbon dioxide equivalent ($MTCO_2e$)/12-inch equivalent wafer mask layer), and restore GHG emissions to the 2020 level in 2030, net zero emissions in 2050. 2. 60% renewable energy company-wide in 2030, 100% renewable energy company-wide in 2040. 2023 achievements: unit GHG emissions (metric ton of carbon dioxide equivalent ($MTCO_2e$)/12-inch equivalent wafer mask layer) increased by 31%; used 2,590 GWh in renewable energy, and increased the proportion of renewable energy use to 11.2%.
9. GHG inventory and assurance status, and reduction goals, strategies and specific action plans	Please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management" on page 158-159 of this Annual Report , "7.2.1 Environmental Protection – Greenhouse Gas (GHG) Emission Reduction and Energy Management" on page 159-160 of this Annual Report and the "TSMC GHG Emissions in Recent Two Years" table on page 176 of this Annual Report.

TSMC GHG Emissions in Recent Two Years

Year	Scope	Scope 1		Scope 2		Verification Party	Verification Guideline	Verification Statement
		Total Emissions (Metric Ton CO_2e)	Intensity (Metric Ton CO_2e / M NTD)	Total Emissions (Metric Ton CO_2e)	Intensity (Metric Ton CO_2e / M NTD)			
2023	Parent Company	1,307,966	0.61	10,150,252	4.71	DNV	ISO 14064-3	Reasonable Assurance
	VisEra Technologies Company Ltd.	4,399	0.61	37,135	5.13	DNV	ISO 14064-3	Reasonable Assurance
	TSMC China Company Limited	161,698	6.34	0	0	DNV	ISO 14064-3	Reasonable Assurance
	TSMC Nanjing Company Limited	45,118	0.74	0	0	DNV	ISO 14064-3	Reasonable Assurance
	TSMC Washington, LLC	76,851	9.28	0	0	AWN	ISO 14064-3	Limited Assurance
2022	Parent Company	1,669,738	0.75	9,540,171	4.24	DNV	ISO 14064-3	Reasonable Assurance
	VisEra Technologies Company Ltd.	5,845	0.64	29,683	3.27	DNV	ISO 14064-3	Reasonable Assurance
	TSMC China Company Limited	187,181	6.6	0	0	DNV	ISO 14064-3	Reasonable Assurance
	TSMC Nanjing Company Limited	46,209	1.09	0	0	DNV	ISO 14064-3	Reasonable Assurance
	TSMC Washington, LLC	109,784	10.65	0	0	AWN	SO 14064-3	Limited Assurance

Note 1: GHG includes CO_2, CH_4, N_2O, HCFCs, PFCs, SF_6, NF_3
Note 2: Scope 1: Direct emissions, i.e. sources owned or controlled by the Company; according to the 2019 Refinement to the Guidelines for National Greenhouse Gases Inventories of the United Nations; and use the Global Warming Potential (GWP) referring to the Intergovernmental Panel on Climate Change (IPCC) AR5 for calculation.
Scope 2: Indirect emissions, i.e. those arising from externally purchased electricity, heat or steam. The calculation is according to market-based method.

Fab 2

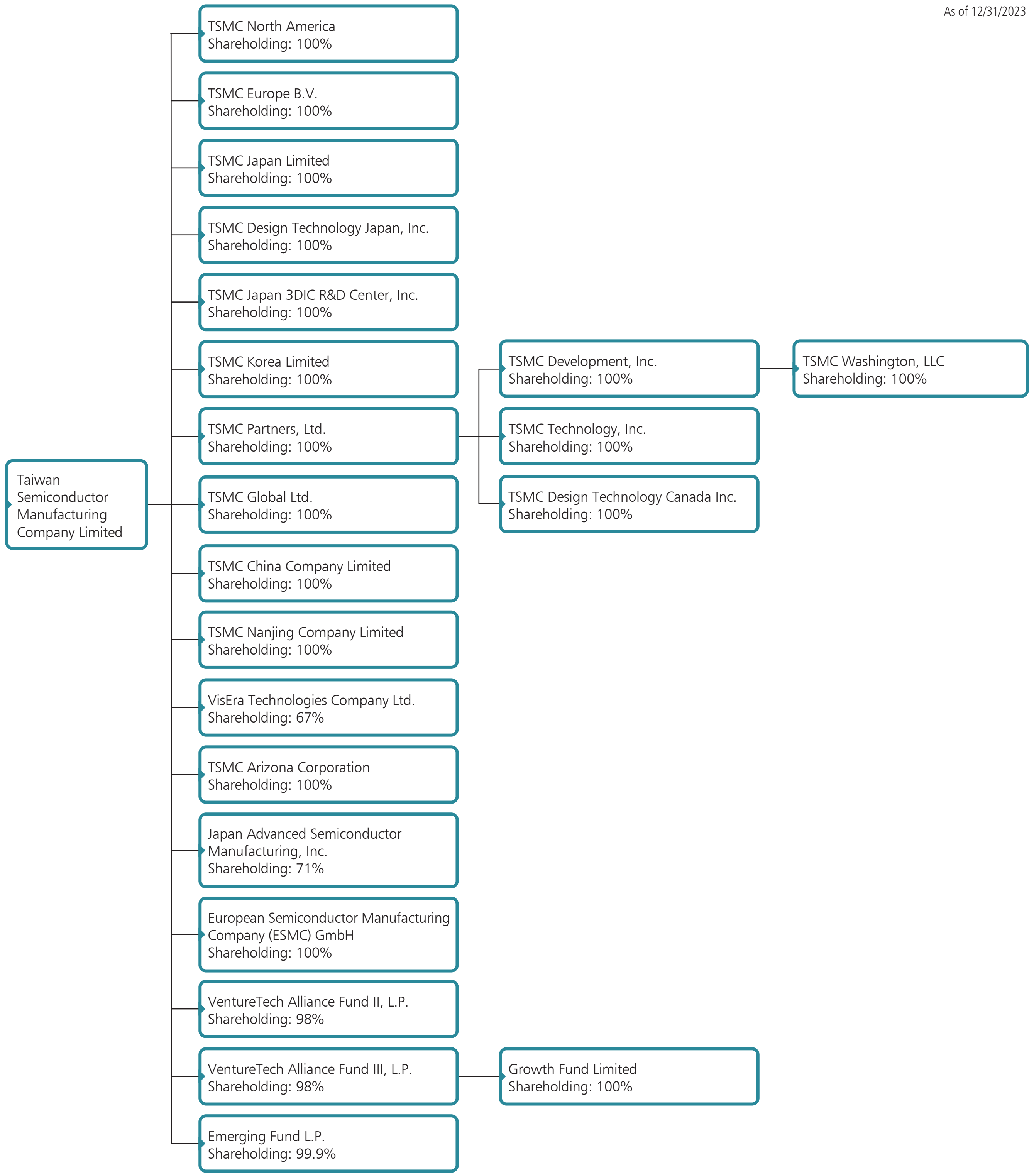
8 Subsidiary Information & Other Special Notes

TSMC inaugurated its Global R&D Center and continued to expand its investments in Taiwan and around the world in 2023.

8.1 Subsidiaries

8.1.1 TSMC Subsidiaries Chart

As of 12/31/2023



8.1.2 Business Scope of TSMC and Its Subsidiaries

TSMC and its subsidiaries strive to deliver the best possible foundry services. TSMC Washington, LLC in the United States and TSMC China provide 8-inch wafer capacity, while TSMC Nanjing provides 12-inch wafer capacity. In addition, TSMC Arizona in the United States, Japan Advanced Semiconductor Manufacturing, Inc. in Japan and European Semiconductor Manufacturing Company (ESMC) GmbH are currently scheduled to provide 12-inch wafer capacity by year end 2025, 2024 and 2027, respectively. TSMC's subsidiaries in North America, Europe, Japan, China, South Korea and other regions are dedicated to providing timely services and engineering support to customers worldwide and also support the Company's core foundry business with related services as well as investing in start-up companies in the semiconductor industry.

8.1.3 TSMC Subsidiaries

Unit: NT$ (USD, EUR, JPY, KRW, RMB, CAD) thousands

As of 12/31/2023

Company	Date of Incorporation	Place of Registration	Capital Stock		Business Activities
TSMC North America	Jan. 18, 1988	San Jose, California, U.S.	US$	11,000	Sales and marketing of integrated circuits and semiconductor devices
TSMC Europe B.V.	Mar. 04, 1994	Amsterdam, The Netherlands	EUR	100	Customer service and supporting activities
TSMC Japan Limited	Sep. 10, 1997	Yokohama, Japan	JPY	300,000	Customer service and supporting activities
TSMC Korea Limited	May 02, 2006	Seoul, Korea	KRW	400,000	Customer service and supporting activities
TSMC Design Technology Japan, Inc.	Jan. 10, 2020	Yokohama, Japan	JPY	750,000	Engineering support activities
TSMC Japan 3DIC R&D Center, Inc.	Mar. 29, 2021	Yokohama, Japan	JPY	2,450,000	Engineering support activities
TSMC China Company Limited	Aug. 04, 2003	Shanghai, China	RMB	4,502,080	Manufacturing, sales, testing, and computer-aided design of integrated circuits and other semiconductor devices
TSMC Nanjing Company Limited	May 16, 2016	Nanjing, China	RMB	6,650,119	Manufacturing, sales, testing, and computer-aided design of integrated circuits and other semiconductor devices
TSMC Arizona Corporation	Nov. 10, 2020	Arizona, U.S.	US$	11 (Note 1)	Manufacturing, sales, and testing of integrated circuits and other semiconductor devices
Japan Advanced Semiconductor Manufacturing, Inc.	Dec. 10, 2021	Kumamoto, Japan	JPY	158,942,400 (Note 2)	Manufacturing, sales, testing, and computer-aided design of integrated circuits and other semiconductor devices
European Semiconductor Manufacturing Company (ESMC) GmbH	Jun. 30, 2023	Dresden, Germany	EUR	100 (Note 3)	Manufacturing, sales, testing, and computer-aided design of integrated circuits and other semiconductor devices
TSMC Technology, Inc.	Feb. 20, 1996	Delaware, U.S.	US$	0.001	Engineering support activities
TSMC Development, Inc.	Feb. 16, 1996	Delaware, U.S.	US$	0.001	Investing in companies involved in semiconductor manufacturing
TSMC Washington, LLC	Jun. 03, 1996	Delaware, U.S.	US$	0	Manufacturing, sales, and testing of integrated circuits and other semiconductor devices
TSMC Partners, Ltd.	Mar. 26, 1998	British Virgin Islands	US$	988,268	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities
TSMC Design Technology Canada Inc.	May 28, 2007	Ontario, Canada	CAD	2,434	Engineering support activities
TSMC Global Ltd.	Jul. 18, 2006	British Virgin Islands	US$	11,384,000	Investment activities
VentureTech Alliance Fund II, L.P.	Feb. 27, 2004	Cayman Islands	US$	3,487	Investing in technology start-up companies
VentureTech Alliance Fund III, L.P.	Mar. 25, 2006	Cayman Islands	US$	93,998	Investing in technology start-up companies
Growth Fund Limited	May 30, 2007	Cayman Islands	US$	2,295	Investing in technology start-up companies
Emerging Fund, L.P.	Jan. 27, 2021	Cayman Islands	US$	55,966	Investing in technology start-up companies
VisEra Technologies Company Ltd.	Dec. 01, 2003	Hsinchu, Taiwan	NT$	3,165,671	Research, design, development, manufacturing, sales, packaging and test of color filter

Note 1: TSMC Arizona Corporation completed capital injections in January 2024 and March 2024 with capital stock of US$11.5 thousands post the capital injection.
Note 2: Japan Advanced Semiconductor Manufacturing, Inc. completed a capital injection in January 2024 with capital stock of JPY195,506,800 thousands post the capital injection.
Note 3: European Semiconductor Manufacturing Company (ESMC) GmbH completed a capital injection in February 2024 with capital stock of EUR1,000 thousands post the capital injection.

8.1.4 Shareholders in Common of TSMC and Its Subsidiaries with Deemed Control and Subordination: None.

8.1.5 Rosters of Directors, Supervisors, and Presidents of TSMC's Subsidiaries

Unit: NT$ (USD), except shareholding

As of 12/31/2023

Company	Title	Name	Shareholding	
			Shares (Investment Amount)	% (Investment Holding %)
TSMC North America	Director Director President/CEO	Sylvia Fang David Keller David Keller	- - - TSMC holds 11,000,000 shares	- - - 100%
TSMC Europe B.V.	Director Director President	Wendell Huang Paul de Bot Maria Marced (Note 1)	- - - TSMC holds 200 shares	- - - 100%
TSMC Japan Limited	Representative Director Director President	Makoto Onodera Sylvia Fang Makoto Onodera	- - - TSMC holds 6,000 shares	- - - 100%
TSMC Korea Limited	Representative Director Director Director	Wei-Li Chen Ray Wan Wendell Huang	- - - TSMC holds 80,000 shares	- - - 100%
TSMC Design Technology Japan, Inc.	Representative Director Director Supervisor	Cliff Hou Wendell Huang Morris Cheng	- - - TSMC holds 15,000 shares	- - - 100%
TSMC Japan 3DIC R&D Center, Inc.	Representative Director Director Supervisor	Jun He Diane Kao Morris Cheng	- - - TSMC holds 49,000 shares	- - - 100%
TSMC China Company Limited	Chairman Director Director Supervisor President	F.C. Tseng Y.P. Chyn Roger Luo Lora Ho Roger Luo	- - - - - (TSMC invests US$596,000,000)	- - - - - (100%)
TSMC Nanjing Company Limited	Chairman Director Director Director Supervisor Supervisor President	Lora Ho Y.P. Chyn Cliff Hou Roger Luo Wendell Huang Sylvia Fang Roger Luo	- - - - - - - (TSMC invests US$1,000,000,000)	- - - - - - - (100%)
TSMC Arizona Corporation	Chairman Director Director Director Director CEO President	Rick Cassidy Cliff Hou Y.L. Wang Sylvia Fang Wendell Huang Y.L. Wang Brian Harrison	- - - - - - - TSMC holds 10,500,000 shares (Note 2)	- - - - - - - 100%

(Continued)

Company	Title	Name	Shareholding	
			Shares (Investment Amount)	% (Investment Holding %)
Japan Advanced Semiconductor Manufacturing, Inc.	Representative Director Director Director Director/President Director Supervisor	Y.H. Liaw Diane Kao Simon Wang Yuichi Horita Yasuhiro Kono Morris Cheng	- - - - - - TSMC holds 2,269,291 shares (Note 3)	- - - - - - 71.39% (Note 3)
European Semiconductor Manufacturing Company (ESMC) GmbH (Note 4)	Managing Director Managing Director	Kenneth Lee Gunnar Thomas	- - TSMC holds 100,000 shares (Note 5)	- - 100% (Note 5)
TSMC Technology, Inc.	Chairman Director President	Wendell Huang Cliff Hou Cliff Hou	- - - TSMC Partners, Ltd. holds 10 shares	- - - 100%
TSMC Development, Inc.	Chairman Director President	Wendell Huang Sylvia Fang Wendell Huang	- - - TSMC Partners, Ltd. holds 10 shares	- - - 100%
TSMC Washington, LLC (Note 6)	Director Director President	Y.H. Liaw Wendell Huang Julian Lee	- - - TSMC Development, Inc. holds 293,636,833 shares	- - - 100%
TSMC Partners, Ltd.	Director Director President	Wendell Huang Sylvia Fang Wendell Huang	- - - TSMC holds 988,268,244 shares	- - - 100%
TSMC Design Technology Canada Inc.	Director Director Director President	Cliff Hou Cormac Michael O'Connell Sylvia Fang Cliff Hou	- - - - TSMC Partners, Ltd. holds 2,300,000 shares	- - - - 100%
TSMC Global Ltd.	Director Director	Wendell Huang Sylvia Fang	- - TSMC holds 11,384 shares	- - 100%
VentureTech Alliance Fund II, L.P.	None	None	(TSMC invests US$3,417,545)	(98.00%)
VentureTech Alliance Fund III, L.P.	None	None	(TSMC invests US$92,118,263)	(98.00%)
Growth Fund Limited	None	None	(VentureTech Alliance Fund III, L.P. invests US$2,295,455)	(100%)
Emerging Fund, L.P.	None	None	(TSMC invests US$55,909,937)	(99.90%)
VisEra Technologies Company Ltd.	Chairman Director Director Independent Director Independent Director Independent Director Independent Director CEO/President	Robert Kuan George Liu Diane Kao Laura Huang Emma Chang P.H. Chang Han-Fei Lin Robert Kuan	214,500 shares - - - - - - - TSMC holds 213,619,000 shares	0.07% - - - - - - - 67.48% (Note 7)

Note 1: Effective January 24, 2024, Mr. Paul de Bot was appointed as President of TSMC Europe B.V., in addition to his current position as Director of the company.
Note 2: TSMC Arizona Corporation completed capital injections in January 2024 and March 2024. After the capital injection, TSMC holds 11,500,000 shares and 100% of the equity interests in TSMC Arizona Corporation.
Note 3: Japan Advanced Semiconductor Manufacturing, Inc. ("JASM") completed a capital injection in January 2024. After the capital injection, TSMC holds 2,790,533 shares and 71.37% of the equity interests in JASM.
Note 4: European Semiconductor Manufacturing Company (ESMC) GmbH ("ESMC") was incorporated on June 30, 2023. Effective January 1, 2024, Mr. Jui-Ping Chuang and Dr Christian Koitzsch were appointed as Managing Directors of ESMC. Effective January 30, 2024, Mr. Arthur Chuang, Mr. Chien-Hsin Lee, Mr. Morris Cheng, and Mr. David Ta-Wey Liu were appointed as ESMC's Shareholders' Committee members, with Mr. Arthur Chuang was appointed as the Chairman of Shareholders' Committee effective March 19, 2024.
Note 5: In January 2024, TSMC sold 30% equity interests of European Semiconductor Manufacturing Company (ESMC) GmbH ("ESMC") to Robert Bosch GmbH, Infineon Technologies AG, and NXP Semiconductors Germany GmbH (a wholly-owned subsidiary of NXP Semiconductors N.V.). In February 2024, ESMC completed a capital injection. After these transactions, TSMC holds 700,000 shares and 70% of the equity interests in ESMC.
Note 6: Effective December 2023, "WaferTech, LLC" changed its name to "TSMC Washington, LLC".
Note 7: As of February 2024, TSMC's ownership of VisEra is 67.44% due to VisEra's continuous execution of the Employee Stock Purchase Plan.

8.1.6 Operational Highlights of TSMC Subsidiaries

Unit: NT$ thousands, except EPS (NT$) As of 12/31/2023

Company	Capital Stock	Assets	Liabilities	Net Worth	Net Revenues	Income (Loss) from Operation	Net Income (Loss)	Basic Earning (Loss) Per Share
TSMC North America	338,217	410,404,290	404,125,539	6,278,751	1,462,533,813	726,479	836,066	76.01
TSMC Europe B.V.	3,418	949,374	356,875	592,499	649,943	44,628	42,865	214,326.06
TSMC Japan Limited	65,760	222,012	91,609	130,403	293,457	12,472	4,084	680.58
TSMC Design Technology Japan, Inc.	164,400	643,485	249,294	394,191	796,524	57,636	40,787	2,719.13
TSMC Japan 3DIC R&D Center, Inc.	537,040	2,195,275	970,826	1,224,449	784,320	134,844	122,786	2,435.71
TSMC Korea Limited	9,480	45,250	651	44,599	14,252	1,326	1,792	22.40
TSMC Development, Inc.	0.03	37,523,988	0	37,523,988	1,463,114	1,463,075	1,191,778	119,177,835.40
TSMC Partners, Ltd.	30,386,284	68,201,464	1,688	68,199,776	2,808,332	2,782,540	2,776,792	2.81
TSMC Global Ltd.	350,023,848	672,155,758	230,929,875	441,225,883	30,174,130	24,922,961	24,922,961	2,189,297.39
TSMC Washington, LLC	0	7,003,570	855,886	6,147,684	8,284,024	24,767	171,187	0.58
TSMC China Company Limited	19,518,318	99,679,738	3,922,342	95,757,396	25,516,473	10,141,206	10,118,593	NA
TSMC Nanjing Company Limited	28,830,928	132,719,184	45,062,304	87,656,880	61,350,286	21,627,296	21,755,071	NA
VisEra Technologies Company Ltd	3,165,671	25,178,522	8,547,355	16,631,167	7,236,928	278,139	356,080	1.13
TSMC Arizona Corporation	323	619,949,098	321,306,797	298,642,301	0	(15,696,164)	(10,924,639)	(2,877.12)
Japan Advanced Semiconductor Manufacturing, Inc.	34,840,174	134,137,238	68,004,859	66,132,379	0	(3,697,737)	(2,965,675)	(1,493.04)
European Semiconductor Manufacturing Company (ESMC) GmbH	3,418	4,785,814	17,801	4,768,013	0	(17,570)	(17,570)	(348.54)
TSMC Technology, Inc.	0.03	2,674,820	1,548,296	1,126,524	3,863,296	186,524	130,938	13,093,801.40
TSMC Design Technology Canada Inc.	56,514	476,972	98,047	378,925	394,174	35,834	49,846	NA
VentureTech Alliance Fund II, L.P.	107,224	113,721	31	113,690	3,566	999	429	NA
VentureTech Alliance Fund III, L.P.	2,890,163	239,016	31	238,985	15,758	6,619	6,619	NA
Growth Fund Limited	70,578	189,021	31	188,990	221	(905)	(996)	NA
Emerging Fund L.P.	1,720,784	1,903,677	31	1,903,646	42,438	20,313	20,313	NA

8.2 Status of TSMC Common Shares and ADRs Acquired, Disposed of, and Held by Subsidiaries: None.

8.3 Special Notes

8.3.1 Private Placement Securities in 2023 and as of the Date of this Annual Report: None.

8.3.2 The Listing of Penalties, Major Deficits, and State of Any Efforts to Make Improvements, Arising from Any Legal Penalties Imposed by Regulatory Authorities on the Company or Its Employees, or Any Company Punishment toward Employees for Violating Internal Control Rules, Where Such Penalties or Punishments May Have Material Impacts on Shareholders' Interests or Securities Prices, in 2023 and as of the Date of this Annual Report: None.

8.3.3 Any Events in 2023 and as of the Date of this Annual Report that Had Material Impacts on Shareholders' Interests or Securities Prices as Stated in Item 3 Paragraph 2 of Article 36 of Securities and Exchange Act of Taiwan: None.

8.3.4 Other Necessary Supplement: None.

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TSMC Deputy Spokesperson
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Auditors
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Auditors: Shih-Tsung Wu, Shang-Chih Lin
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Website: https://www.ctbcbank.com

ADR Depositary Bank
Company: Citibank, N.A.
Depositary Receipts Services
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TSMC's depositary receipts of the common shares are listed on New York Stock Exchange (NYSE) under the symbol TSM. The information relating to TSM is available at https://www.nyse.com and https://mops.twse.com.tw

Contents

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

Consolidated Financial Statements for the Years Ended December 31, 2023 and 2022 and Independent Auditors’ Report

REPRESENTATION LETTER

The entities that are required to be included in the combined financial statements of Taiwan Semiconductor Manufacturing Company Limited as of and for the year ended December 31, 2023, under the Criteria Governing the Preparation of Affiliation Reports, Consolidated Business Reports and Consolidated Financial Statements of Affiliated Enterprises are the same as those included in the consolidated financial statements prepared in conformity with the International Financial Reporting Standard 10, “Consolidated Financial Statements”. In addition, the information required to be disclosed in the combined financial statements is included in the consolidated financial statements. Consequently, Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries do not prepare a separate set of combined financial statements.

Very truly yours,

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LIMITED

By

MARK LIU
Chairman

February 6, 2024

Deloitte.

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INDEPENDENT AUDITORS' REPORT

The Board of Directors and Shareholders
Taiwan Semiconductor Manufacturing Company Limited

Opinion

We have audited the accompanying consolidated financial statements of Taiwan Semiconductor Manufacturing Company Limited and its subsidiaries (the "Company"), which comprise the consolidated balance sheets as of December 31, 2023 and 2022, and the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the consolidated financial statements, including material accounting policy information.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2023 and 2022, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Financial Statement Audit and Attestation Engagements of Certified Public Accountants and the Standards on Auditing of the Republic of China. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Company in accordance with The Norm of Professional Ethics for Certified Public Accountant of the Republic of China and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the year ended December 31, 2023. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter for the Company's consolidated financial statements for the year ended December 31, 2023 is stated as follows:

Property, plant and equipment (PP&E) – commencement of depreciation related to PP&E classified as equipment under installation and construction in progress (EUI/CIP)

Refer to Notes 4, 5 and 14 to the consolidated financial statements.

The Company's evaluation of when to commence depreciation of EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner. Changes in these assumptions could have a significant impact on when depreciation is recognized.

Given the subjectivity in determining the date to commence depreciation of EUI/CIP, performing audit procedures to evaluate the reasonableness of the Company's judgments and assumptions required a high degree of auditor judgment. Consequently, the validity of commencement of depreciation related to PP&E classified as EUI/CIP is identified as a key audit matter.

Our audit procedures related to the evaluation of when to commence depreciation of EUI/CIP included the following, among others:

1. We read the Company's policy and understood the criteria used to determine when to commence depreciation.

2. We tested the effectiveness of the controls over the evaluation of when to commence depreciation of EUI/CIP.

3. We sampled the year-end balance of EUI/CIP and performed the following for each selection:

a. Evaluated whether the selection did not meet the criteria specified by the Company for commencement of depreciation.

b. Observed the assets and evaluated their status.

4. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation during the year.

5. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation subsequent to year end.

Other Matter

We have also audited the parent company only financial statements of Taiwan Semiconductor Manufacturing Company Limited as of and for the years ended December 31, 2023 and 2022 on which we have issued an unmodified opinion.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRS, IAS, IFRIC, and SIC endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China, and for such internal control as management determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit and Risk Committee) are responsible for overseeing the Company's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Standards on Auditing of the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the Standards on Auditing of the Republic of China, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.

5. Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements for the year ended December 31, 2023 and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audits resulting in this independent auditors' report are Shih Tsung Wu and Shang Chih Lin.

Shih Tsung Wu   Shang-Chih Lin

Deloitte & Touche
Taipei, Taiwan
Republic of China

February 6, 2024

<u>*Notice to Readers*</u>

The accompanying consolidated financial statements are intended only to present the consolidated financial position, financial performance and cash flows in accordance with accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such consolidated financial statements are those generally applied in the Republic of China.

For the convenience of readers, the independent auditors' report and the accompanying consolidated financial statements have been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors' report and consolidated financial statements shall prevail.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED BALANCE SHEETS
(In Thousands of New Taiwan Dollars)

	December 31, 2023		December 31, 2022	
	Amount	**%**	**Amount**	**%**
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	$ 1,465,427,753	26	$ 1,342,814,083	27
Financial assets at fair value through profit or loss (Note 7)	924,636	-	1,070,398	-
Financial assets at fair value through other comprehensive income (Note 8)	154,530,830	3	122,998,543	2
Financial assets at amortized cost (Note 9)	66,761,221	1	94,600,219	2
Hedging financial assets (Note 10)	-	-	2,329	-
Notes and accounts receivable, net (Note 11)	201,313,914	4	229,755,887	5
Receivables from related parties (Note 33)	624,451	-	1,583,958	-
Other receivables from related parties (Note 33)	71,871	-	68,975	-
Inventories (Notes 5 and 12)	250,997,088	5	221,149,148	4
Other financial assets (Note 34)	27,158,766	1	25,964,428	1
Other current assets	26,222,380	-	12,888,776	-
Total current assets	2,194,032,910	40	2,052,896,744	41
NONCURRENT ASSETS				
Financial assets at fair value through profit or loss (Note 7)	13,417,457	-	-	-
Financial assets at fair value through other comprehensive income (Note 8)	7,208,655	-	6,159,200	-
Financial assets at amortized cost (Note 9)	79,199,367	2	35,127,215	1
Investments accounted for using equity method (Note 13)	29,616,638	1	27,641,505	1
Property, plant and equipment (Notes 5 and 14)	3,064,474,984	55	2,693,836,970	54
Right-of-use assets (Notes 5 and 15)	40,424,830	1	41,914,136	1
Intangible assets (Notes 5 and 16)	22,766,744	-	25,999,155	1
Deferred income tax assets (Notes 5 and 25)	64,175,787	1	69,185,842	1
Refundable deposits	7,044,420	-	4,467,022	-
Other noncurrent assets	10,009,423	-	7,551,089	-
Total noncurrent assets	3,338,338,305	60	2,911,882,134	59
TOTAL	$ 5,532,371,215	100	$ 4,964,778,878	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Financial liabilities at fair value through profit or loss (Note 7)	$ 121,412	-	$ 116,215	-
Hedging financial liabilities (Notes 10 and 30)	27,334,164	-	813	-
Accounts payable	55,726,757	1	54,879,708	1
Payables to related parties (Note 33)	1,566,300	-	1,642,637	-
Salary and bonus payable	33,200,563	1	36,435,509	1
Accrued profit sharing bonus to employees and compensation to directors (Note 28)	50,716,944	1	61,748,574	1
Payables to contractors and equipment suppliers	171,484,616	3	213,499,613	4
Cash dividends payable (Note 20)	168,558,461	3	142,617,093	3
Income tax payable (Notes 5 and 25)	98,912,902	2	120,801,814	3
Long-term liabilities - current portion (Notes 17, 18 and 30)	9,293,266	-	19,313,889	-
Accrued expenses and other current liabilities (Notes 5, 15, 21, 30 and 33)	296,667,931	5	293,170,952	6
Total current liabilities	913,583,316	16	944,226,817	19
NONCURRENT LIABILITIES				
Bonds payable (Notes 17 and 30)	913,899,843	17	834,336,439	17
Long-term bank loans (Notes 18 and 30)	4,382,965	-	4,760,047	-
Deferred income tax liabilities (Notes 5 and 25)	53,856	-	1,031,383	-
Lease liabilities (Notes 5, 15 and 30)	28,681,835	1	29,764,097	-
Net defined benefit liability (Note 19)	9,257,224	-	9,321,091	-
Guarantee deposits	923,164	-	892,021	-
Others (Note 21)	178,326,165	3	179,958,116	4
Total noncurrent liabilities	1,135,525,052	21	1,060,063,194	21
Total liabilities	2,049,108,368	37	2,004,290,011	40
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 20)	259,320,710	5	259,303,805	5
Capital surplus (Notes 20 and 27)	69,876,381	1	69,330,328	1
Retained earnings (Note 20)				
Appropriated as legal capital reserve	311,146,899	6	311,146,899	6
Appropriated as special capital reserve	-	-	3,154,310	-
Unappropriated earnings	2,846,883,893	51	2,323,223,479	47
	3,158,030,792	57	2,637,524,688	53
Others (Notes 20 and 27)	(28,314,256)	-	(20,505,626)	-
Equity attributable to shareholders of the parent	3,458,913,627	63	2,945,653,195	59
NON - CONTROLLING INTERESTS	24,349,220	-	14,835,672	1
Total equity	3,483,262,847	63	2,960,488,867	60
TOTAL	$ 5,532,371,215	100	$ 4,964,778,878	100

The accompanying notes are an integral part of the consolidated financial statements.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2023		2022	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 21, 33 and 38)	$ 2,161,735,841	100	$ 2,263,891,292	100
COST OF REVENUE (Notes 5, 12, 28 and 33)	986,625,213	46	915,536,486	40
GROSS PROFIT	1,175,110,628	54	1,348,354,806	60
OPERATING EXPENSES (Notes 5, 28 and 33)				
Research and development	182,370,170	8	163,262,208	7
General and administrative	60,872,841	3	53,524,898	2
Marketing	10,590,705	-	9,920,446	1
Total operating expenses	253,833,716	11	226,707,552	10
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 14 and 28)	188,694	-	(368,403)	-
INCOME FROM OPERATIONS (Note 38)	921,465,606	43	1,121,278,851	50
NON-OPERATING INCOME AND EXPENSES				
Share of profits of associates	4,655,098	-	7,798,359	-
Interest income (Note 22)	60,293,901	3	22,422,209	1
Other income	479,984	-	947,697	-
Foreign exchange gain (loss), net (Note 36)	(2,685,484)	-	4,505,784	-
Finance costs (Note 23)	(11,999,360)	(1)	(11,749,984)	-
Other gains and losses, net (Note 24)	6,961,579	-	(1,012,198)	-
Total non-operating income and expenses	57,705,718	2	22,911,867	1
INCOME BEFORE INCOME TAX	979,171,324	45	1,144,190,718	51
INCOME TAX EXPENSE (Notes 5 and 25)	141,403,807	6	127,290,203	6
NET INCOME	837,767,517	39	1,016,900,515	45
OTHER COMPREHENSIVE INCOME (LOSS) (Notes 5, 19, 20 and 25)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	(623,356)	-	(823,060)	-
Unrealized gain/(loss) on investments in equity instruments at fair value through other comprehensive income	1,954,563	-	(263,749)	-
Gain on hedging instruments	39,898	-	-	-
Share of other comprehensive income of associates	42,554	-	154,457	-
Income tax benefit related to items that will not be reclassified subsequently	124,646	-	733,956	-
	1,538,305	-	(198,396)	-

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2023		2022	
	Amount	**%**	**Amount**	**%**
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	$ (14,464,353)	(1)	$ 50,845,614	2
Unrealized gain/(loss) on investments in debt instruments at fair value through other comprehensive income	4,123,201	-	(10,102,658)	-
Gain (loss) on hedging instruments	(74,735)	-	1,329,231	-
Share of other comprehensive income of associates	63,938	-	550,338	-
Income tax benefit related to items that may be reclassified subsequently	-	-	6,036	-
	(10,351,949)	(1)	42,628,561	2
Other comprehensive income (loss), net of income tax	(8,813,644)	(1)	42,430,165	2
TOTAL COMPREHENSIVE INCOME	$ 828,953,873	38	$ 1,059,330,680	47
NET INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	$ 838,497,664	39	$ 1,016,530,249	45
Non-controlling interests	(730,147)	-	370,266	-
	$ 837,767,517	39	$ 1,016,900,515	45
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	$ 830,509,542	38	$ 1,059,124,890	47
Non-controlling interests	(1,555,669)	-	205,790	-
	$ 828,953,873	38	$ 1,059,330,680	47
EARNINGS PER SHARE (NT$, Note 26)				
Basic earnings per share	$ 32.34		$ 39.20	
Diluted earnings per share	$ 32.34		$ 39.20	

The accompanying notes are an integral part of the consolidated financial statements. (Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(In Thousands of New Taiwan Dollars)

	Equity Attributable to Shareholders of the Parent															
	Capital Stock - Common Stock			Retained Earnings				Others								
	Shares (In Thousands)	Amount	Capital Surplus	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total	Treasury Stock	Total	Non-controlling Interests	Total Equity
BALANCE, JANUARY 1, 2022	25,930,380	$ 259,303,805	$ 64,761,602	$ 311,146,899	$ 59,304,212	$ 1,536,378,550	$ 1,906,829,661	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)	$ -	$ 2,168,286,553	$ 2,446,652	$ 2,170,733,205
Appropriations of earnings																
Special capital reserve	-	-	-	-	(56,149,902)	56,149,902	-	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(285,234,185)	(285,234,185)	-	-	-	-	-	-	(285,234,185)	-	(285,234,185)
Total	-	-	-	-	(56,149,902)	(229,084,283)	(285,234,185)	-	-	-	-	-	-	(285,234,185)	-	(285,234,185)
Net income	-	-	-	-	-	1,016,530,249	1,016,530,249	-	-	-	-	-	-	1,016,530,249	370,266	1,016,900,515
Other comprehensive income (loss), net of income tax	-	-	-	-	-	(49,572)	(49,572)	51,560,060	(10,327,421)	1,411,574	-	42,644,213	-	42,594,641	(164,476)	42,430,165
Total comprehensive income (loss)	-	-	-	-	-	1,016,480,677	1,016,480,677	51,560,060	(10,327,421)	1,411,574	-	42,644,213	-	1,059,124,890	205,790	1,059,330,680
Share-based payment arrangements	1,387	13,870	438,029	-	-	-	-	-	-	-	(185,153)	(185,153)	-	266,746	-	266,746
Treasury stock acquired	-	-	-	-	-	-	-	-	-	-	-	-	(871,566)	(871,566)	-	(871,566)
Treasury stock retired	(1,387)	(13,870)	(2,989)	-	-	(854,707)	(854,707)	-	-	-	-	-	871,566	-	-	-
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	303,242	303,242	-	(303,242)	-	-	(303,242)	-	-	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(52,929)	-	(52,929)	-	(52,929)	-	(52,929)
Adjustments to share of changes in equities of associates	-	-	4,541	-	-	-	-	-	-	-	-	-	-	4,541	-	4,541
From share of changes in equities of subsidiaries	-	-	4,115,940	-	-	-	-	-	-	-	-	-	-	4,115,940	12,350,219	16,466,159
Donation from shareholders	-	-	13,205	-	-	-	-	-	-	-	-	-	-	13,205	20	13,225
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(167,009)	(167,009)
BALANCE, DECEMBER 31, 2022	25,930,380	259,303,805	69,330,328	311,146,899	3,154,310	2,323,223,479	2,637,524,688	(11,743,301)	(10,056,353)	1,479,181	(185,153)	(20,505,626)	-	2,945,653,195	14,835,672	2,960,488,867
Appropriations of earnings																
Special capital reserve	-	-	-	-	(3,154,310)	3,154,310	-	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(317,663,220)	(317,663,220)	-	-	-	-	-	-	(317,663,220)	-	(317,663,220)
Total	-	-	-	-	(3,154,310)	(314,508,910)	(317,663,220)	-	-	-	-	-	-	(317,663,220)	-	(317,663,220)
Net income	-	-	-	-	-	838,497,664	838,497,664	-	-	-	-	-	-	838,497,664	(730,147)	837,767,517
Other comprehensive income (loss), net of income tax	-	-	-	-	-	(484,898)	(484,898)	(13,573,468)	6,108,369	(38,125)	-	(7,503,224)	-	(7,988,122)	(825,522)	(8,813,644)
Total comprehensive income (loss)	-	-	-	-	-	838,012,766	838,012,766	(13,573,468)	6,108,369	(38,125)	-	(7,503,224)	-	830,509,542	(1,555,669)	828,953,873
Disposal of investments accounted for using equity method	-	-	(18,112)	-	-	-	-	-	-	-	-	-	-	(18,112)	(370)	(18,482)
Employee restricted shares retired	(419)	(4,195)	4,195	-	-	4,614	4,614	-	-	-	-	-	-	4,614	-	4,614
Share-based payment arrangements	2,110	21,100	564,868	-	-	-	-	-	-	-	(108,281)	(108,281)	-	477,687	-	477,687
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	151,944	151,944	-	(151,944)	-	-	(151,944)	-	-	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(45,181)	-	(45,181)	-	(45,181)	-	(45,181)
Adjustments to share of changes in equities of associates	-	-	(43)	-	-	-	-	-	-	-	-	-	-	(43)	-	(43)
From share of changes in equities of subsidiaries	-	-	(21,268)	-	-	-	-	-	-	-	-	-	-	(21,268)	11,265,933	11,244,665
Donation from shareholders	-	-	16,413	-	-	-	-	-	-	-	-	-	-	16,413	35	16,448
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(196,381)	(196,381)
BALANCE, DECEMBER 31, 2023	25,932,071	$ 259,320,710	$ 69,876,381	$ 311,146,899	$ -	$ 2,846,883,893	$ 3,158,030,792	$ (25,316,769)	$ (4,099,928)	$ 1,395,875	$ (293,434)	$ (28,314,256)	$ -	$3,458,913,627	$ 24,349,220	$ 3,483,262,847

The accompanying notes are an integral part of the consolidated financial statements.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2023	2022
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	$ 979,171,324	$ 1,144,190,718
Adjustments for:		
Depreciation expense	522,932,671	428,498,179
Amortization expense	9,258,250	8,756,094
Expected credit losses recognized on investments in debt instruments	35,745	52,351
Finance costs	11,999,360	11,749,984
Share of profits of associates	(4,655,098)	(7,798,359)
Interest income	(60,293,901)	(22,422,209)
Share-based compensation	483,050	302,348
Loss (gain) on disposal or retirement of property, plant and equipment, net	369,140	(98,856)
Loss (gain) on disposal or retirement of intangible assets, net	(3,045)	6,004
Impairment loss on property, plant and equipment	-	790,740
Gain on financial instruments at fair value through profit or loss, net	(12,355)	-
Loss on disposal of investments in debt instruments at fair value through other comprehensive income, net	473,897	410,076
Gain on disposal of investments accounted for using equity method, net	(15,758)	-
Loss (gain) on foreign exchange, net	(246,695)	10,342,706
Dividend income	(464,094)	(266,767)
Others	(337,935)	138,827
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	289,570	(1,354,359)
Notes and accounts receivable, net	28,441,987	(32,169,853)
Receivables from related parties	959,507	(868,634)
Other receivables from related parties	(2,896)	(7,444)
Inventories	(29,847,940)	(28,046,827)
Other financial assets	1,878,712	(1,680,611)
Other current assets	(12,530,880)	(4,450,883)
Other noncurrent assets	(720,278)	-
Accounts payable	847,049	7,594,105
Payables to related parties	(76,337)	205,451
Salary and bonus payable	(3,234,946)	12,633,409
Accrued profit sharing bonus to employees and compensation to directors	(11,031,630)	25,223,833
Accrued expenses and other current liabilities	(44,466,734)	46,578,784
Other noncurrent liabilities	13,329,895	101,390,476
Net defined benefit liability	(687,223)	(2,538,848)
Cash generated from operations	1,401,842,412	1,697,160,435
Income taxes paid	(159,875,065)	(86,561,247)
Net cash generated by operating activities	1,241,967,347	1,610,599,188
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial instruments at fair value through profit or loss	(14,142,072)	(125,540)
Financial assets at fair value through other comprehensive income	(62,752,002)	(54,566,725)
Financial assets at amortized cost	(149,387,898)	(183,125,920)
Property, plant and equipment	(949,816,825)	(1,082,672,130)
Intangible assets	(5,518,414)	(6,954,326)

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2023	2022
Proceeds from disposal or redemption of:		
Financial assets at fair value through other comprehensive income	$ 35,698,575	$ 44,963,367
Financial assets at amortized cost	134,605,822	62,329,674
Property, plant and equipment	703,904	983,358
Intangible assets	3,078	12,636
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	127,963	2,938
Derecognition of hedging financial instruments	68,237	1,684,430
Interest received	55,887,164	18,083,755
Proceeds from government grants - property, plant and equipment	47,544,746	7,046,136
Proceeds from government grants - others	1,152	5,296
Other dividends received	445,129	266,767
Dividends received from investments accounted for using equity method	3,076,482	2,749,667
Increase in prepayments for leases	(63,153)	-
Refundable deposits paid	(4,056,496)	(2,117,041)
Refundable deposits refunded	1,454,012	505,423
Net cash used in investing activities	(906,120,596)	(1,190,928,235)
CASH FLOWS FROM FINANCING ACTIVITIES		
Decrease in short-term loans	-	(111,959,992)
Increase in hedging financial liabilities - bank loans	27,908,580	-
Proceeds from issuance of bonds	85,700,000	198,293,561
Repayment of bonds	(18,100,000)	(4,400,000)
Proceeds from long-term bank loans	2,450,000	2,670,000
Repayment of long-term bank loans	(1,756,944)	(166,667)
Payments for transaction costs attributable to the issuance of bonds	(88,681)	(414,307)
Treasury stock acquired	-	(871,566)
Repayment of the principal portion of lease liabilities	(2,854,344)	(2,428,277)
Interest paid	(17,358,981)	(12,218,659)
Guarantee deposits received	230,116	271,387
Guarantee deposits refunded	(367,375)	(62,100)
Cash dividends	(291,721,852)	(285,234,185)
Donation from shareholders	16,448	13,225
Increase in non-controlling interests	11,048,781	16,263,548
Net cash used in financing activities	(204,894,252)	(200,244,032)
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	(8,338,829)	58,396,970
NET INCREASE IN CASH AND CASH EQUIVALENTS	122,613,670	277,823,891
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	1,342,814,083	1,064,990,192
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 1,465,427,753	$ 1,342,814,083

The accompanying notes are an integral part of the consolidated financial statements. (Concluded)

1. GENERAL

Taiwan Semiconductor Manufacturing Company Limited (TSMC), a Republic of China (R.O.C.) corporation, was incorporated on February 21, 1987. TSMC is a dedicated foundry in the semiconductor industry which engages mainly in the manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

On September 5, 1994, TSMC's shares were listed on the Taiwan Stock Exchange (TWSE). On October 8, 1997, TSMC listed some of its shares of stock on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs).

The address of its registered office and principal place of business is No. 8, Li-Hsin Rd. 6, Hsinchu Science Park, Taiwan. The principal operating activities of TSMC's subsidiaries are described in Note 4.

2. THE AUTHORIZATION OF FINANCIAL STATEMENTS

The accompanying consolidated financial statements were approved and authorized for issue by the Board of Directors on February 6, 2024.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS

a. Initial application of the amendments to the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) (collectively, "IFRS Accounting Standards") endorsed and issued into effect by the Financial Supervisory Commission (FSC)

   Except for the following, the initial application of the amendments to the IFRS Accounting Standards endorsed and issued into effect by the FSC did not have a material impact on the accounting policies of TSMC and its subsidiaries (collectively as the "Company"):

   <u>Amendments to IAS 12 "International Tax Reform - Pillar Two Model Rules"</u>

   The amendments introduce a temporary exception to the requirements in IAS 12 by stipulating that the Company should neither recognize nor disclose information about deferred tax assets and liabilities related to Pillar Two income taxes. The amendments also require the Company to disclose that it has applied the exception and separately disclose its current tax expense (income) related to Pillar Two income taxes. In addition, for periods in which Pillar Two legislation is enacted or substantively enacted but not yet in effect, the Company should disclose qualitative and quantitative information that helps users of financial statements understand the Company's exposure to Pillar Two income taxes. The requirement that the Company applies the exception and the requirement to disclose that fact is applied immediately upon issuance of the amendments in May 2023. The remaining disclosure requirements are applied for annual reporting periods beginning on or after January 1, 2023, but not for any interim period ending on or before December 31, 2023.

b. The IFRS Accounting Standards issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2024

New, Amended and Revised Standards and Interpretations	Effective Date Issued by IASB
Amendments to IAS 1 "Classification of Liabilities as Current or Non-current" and "Non-current Liabilities with Covenants"	January 1, 2024

c. The IFRS Accounting Standards issued by IASB, but not yet endorsed and issued into effect by the FSC

New, Amended and Revised Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 10 and IAS 28 "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture"	To be determined by IASB

As of the date the accompanying consolidated financial statements were authorized for issue, the Company continues in evaluating the impact on its financial position and financial performance from the initial adoption of the aforementioned standards or interpretations and related applicable period. The related impact will be disclosed when the Company completes its evaluation.

4. SUMMARY OF MATERIAL ACCOUNTING POLICY INFORMATION

For the convenience of readers, the accompanying consolidated financial statements have been translated into English from the original Chinese version prepared and used in the R.O.C. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language consolidated financial statements shall prevail.

Statement of Compliance

The accompanying consolidated financial statements have been prepared in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRS Accounting Standards endorsed by the FSC with the effective dates (collectively, "Taiwan-IFRS Accounting Standards").

Basis of Preparation

The accompanying consolidated financial statements have been prepared on the historical cost basis except for financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

Basis of Consolidation

<u>The basis for the consolidated financial statements</u>

The consolidated financial statements incorporate the financial statements of TSMC and entities controlled by TSMC (its subsidiaries).

Income and expenses of subsidiaries acquired or disposed of are included in the consolidated statement of comprehensive income from the effective date of acquisition and up to the effective date of disposal, as appropriate. Total comprehensive income of subsidiaries is attributed to the shareholders of the parent and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with those used by the Company.

All intra-group transactions, balances, income and expenses are eliminated in full on consolidation.

Changes in the Company's ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Company's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to shareholders of the parent.

When the Company loses control of a subsidiary, a gain or loss is recognized in profit or loss and is calculated as the difference between:

a. the aggregate of the fair value of consideration received and the fair value of any retained interest at the date when control is lost; and

b. the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interest.

The Company shall account for all amounts recognized in other comprehensive income in relation to the subsidiary on the same basis as would be required if the Company had directly disposed of the related assets and liabilities.

The fair value of any investment retained in the former subsidiary at the date when control is lost is regarded as the cost on initial recognition of an investment in an associate.

The subsidiaries in the consolidated financial statements

The detail information of the subsidiaries at the end of reporting period was as follows:

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership December 31, 2023	Percentage of Ownership December 31, 2022	Note
TSMC	TSMC North America	Sales and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	100%	100%	-
	TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	100%	100%	a)
	TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	100%	100%	a)
	TSMC Design Technology Japan, Inc. (TSMC JDC)	Engineering support activities	Yokohama, Japan	100%	100%	a)
	TSMC Japan 3DIC R&D Center, Inc. (TSMC 3DIC)	Engineering support activities	Yokohama, Japan	100%	100%	a)
	TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	100%	100%	a)
	TSMC Partners, Ltd. (TSMC Partners)	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities	Tortola, British Virgin Islands	100%	100%	-
	TSMC Global, Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	100%	100%	-
	TSMC China Company Limited (TSMC China)	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	100%	100%	-
	TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	100%	100%	-
	VisEra Technologies Company Ltd. (VisEra Tech)	Research, design, development, manufacturing, sales, packaging and test of color filter	Hsin-Chu, Taiwan	67%	68%	b)
	TSMC Arizona Corporation (TSMC Arizona)	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	Phoenix, Arizona, U.S.A.	100%	100%	c)
	Japan Advanced Semiconductor Manufacturing, Inc. (JASM)	Manufacturing, sales, testing and computer aided design of integrated circuits and other semiconductor devices	Kumamoto, Japan	71%	71%	d)
	European Semiconductor Manufacturing Company (ESMC) GmbH (ESMC)	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	Dresden, Germany	100%	100%	a), e)

(Continued)

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership December 31, 2023	Percentage of Ownership December 31, 2022	Note
TSMC	VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in technology start-up companies	Cayman Islands	98%	98%	-
	VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in technology start-up companies	Cayman Islands	98%	98%	-
	Emerging Fund L.P. (Emerging Fund)	Investing in technology start-up companies	Cayman Islands	99.9%	99.9%	-
TSMC Partners	TSMC Development, Inc. (TSMC Development)	Investing in companies involved in semiconductor manufacturing	Delaware, U.S.A.	100%	100%	-
	TSMC Technology, Inc. (TSMC Technology)	Engineering support activities	Delaware, U.S.A.	100%	100%	a)
	TSMC Design Technology Canada Inc. (TSMC Canada)	Engineering support activities	Ontario, Canada	100%	100%	a)
VTAF III	Growth Fund Limited (Growth Fund)	Investing in technology start-up companies	Cayman Islands	100%	100%	-
TSMC Development	TSMC Washington, LLC (TSMC Washington)	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	Washington, U.S.A.	100%	100%	f)

(Concluded)

Note a: This is an immaterial subsidiary for which the consolidated financial statements are not audited by the Company's independent auditors.

Note b: As VisEra's employees continue to exercise their employee share options, TSMC's ownership in VisEra continues to decline. This transaction was accounted for as an equity transaction since the transaction did not change TSMC's control over VisEra.

Note c: Under the terms of the development agreement entered into between TSMC Arizona and the City of Phoenix, the City of Phoenix commits approximately US$205 million toward various public infrastructure projects in the area of the proposed manufacturing facility, conditioned on TSMC Arizona's achieving a minimum project scale with defined spending and job-creation thresholds.

Note d: TSMC's shareholding and the proportion of voting rights in JASM are 71% and 81%, respectively.

Note e: ESMC was established in June 2023. TSMC sold its 10% shares to Robert Bosch GmbH, Infineon Technologies AG and NXP Semiconductors N.V. in January 2024, respectively. After selling shares, TSMC's shareholding in ESMC decreased from 100% to 70%. This transaction was accounted for as an equity transaction since the transaction did not change TSMC's control over ESMC.

Note f: WaferTech, LLC was renamed to TSMC Washington, LLC in December 2023.

Foreign Currencies

The financial statements of each individual consolidated entity were expressed in the currency which reflected its primary economic environment (functional currency). The functional currency of TSMC and presentation currency of the consolidated financial statements are both New Taiwan Dollars (NT$). In preparing the consolidated financial statements, the operating results and financial positions of each consolidated entity are translated into NT$.

In preparing the financial statements of each individual consolidated entity, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Such exchange differences are recognized in profit or loss in the year in which they arise. Non-monetary items measured at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising on the retranslation of non-monetary items are included in profit or loss for the year except for exchange differences arising on the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which case, the exchange differences are also recognized directly in other comprehensive income. Non-monetary items that are measured in terms of historical cost in foreign currencies are not retranslated.

For the purposes of presenting consolidated financial statements, the assets and liabilities of the Company's foreign operations are translated into NT$ using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity (attributed to non-controlling interests as appropriate).

Classification of Current and Noncurrent Assets and Liabilities

Current assets are assets held for trading purposes and assets expected to be converted to cash, sold or consumed within one year from the end of the reporting period. Current liabilities are obligations incurred for trading purposes and obligations expected to be settled within one year from the end of the reporting period. Assets and liabilities that are not classified as current are noncurrent assets and liabilities, respectively.

Cash Equivalents

Cash equivalents, for the purpose of meeting short-term cash commitments, consist of highly liquid time deposits and investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Financial Instruments

Financial assets and liabilities shall be recognized when the Company becomes a party to the contractual provisions of the instruments.

Financial assets and liabilities are initially recognized at fair values. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial Assets

The classification of financial assets depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Regular way purchases or sales of financial assets are recognized and derecognized on a trade date or settlement date basis for which financial assets were classified in the same way, respectively. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

a. Category of financial assets and measurement

   Financial assets are classified into the following categories: financial assets at FVTPL, investments in debt instruments and equity instruments at FVTOCI, and financial assets at amortized cost.

   1) Financial asset at FVTPL

      For certain financial assets which include debt instruments that do not meet the criteria of amortized cost or FVTOCI, it is mandatorily required to measure them at FVTPL. Any gain or loss arising from remeasurement is recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest earned on the financial asset.

   2) Investments in debt instruments at FVTOCI

      Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of collecting contractual cash flows and selling the financial assets, are measured at FVTOCI.

      Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment gains or losses on investments in debt instruments at FVTOCI are recognized in profit or loss. Other changes in the carrying amount of these debt instruments are recognized in other comprehensive income and will be reclassified to profit or loss when these debt instruments are disposed.

   3) Investments in equity instruments at FVTOCI

      On initial recognition, the Company may irrevocably designate investments in equity investments that is not held for trading as at FVTOCI.

Investments in equity instruments at FVTOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity.

Dividends on these investments in equity instruments at FVTOCI are recognized in profit or loss when the Company's right to receive the dividends is established, unless the Company's rights clearly represent a recovery of part of the cost of the investment.

4) Measured at amortized cost

Cash and cash equivalents, commercial paper, debt instrument investments, notes and accounts receivable (including related parties), other receivables, refundable deposits and temporary payments (including those classified under other current assets and other noncurrent assets) are measured at amortized cost.

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of holding financial assets in order to collect contractual cash flows, are measured at amortized cost.

Subsequent to initial recognition, financial assets measured at amortized cost are measured at amortized cost, which equals to carrying amount determined by the effective interest method less any impairment loss.

b. Impairment of financial assets

At the end of each reporting period, a loss allowance for expected credit loss is recognized for financial assets at amortized cost (including accounts receivable) and for investments in debt instruments that are measured at FVTOCI.

The loss allowance for accounts receivable is measured at an amount equal to lifetime expected credit losses. For financial assets at amortized cost and investments in debt instruments that are measured at FVTOCI, when the credit risk on the financial instrument has not increased significantly since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from possible default events of a financial instrument within 12 months after the reporting date. If, on the other hand, there has been a significant increase in credit risk since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from all possible default events over the expected life of a financial instrument.

The Company recognizes an impairment loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in other comprehensive income and does not reduce the carrying amount of the financial asset.

c. Derecognition of financial assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the financial asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset to another entity.

On derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. On derecognition of an investment in a debt instrument at FVTOCI, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss. However, on derecognition of an investment in an equity instrument at FVTOCI, the cumulative gain or loss that had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

Financial Liabilities and Equity Instruments

Classification as debt or equity

Debt and equity instruments issued by the Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Financial liabilities

Financial liabilities are subsequently measured either at amortized cost using effective interest method or at FVTPL.

Financial liabilities are classified as at fair value through profit or loss when the financial liability is either held for trading or is designated as at fair value through profit or loss.

Financial liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

Financial liabilities other than those held for trading purposes and designated as at FVTPL are subsequently measured at amortized cost at the end of each reporting period.

Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

Derivative Financial Instruments

Derivative financial instruments are initially recognized at fair value at the date the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative financial instrument is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

Hedge Accounting

a. Fair value hedge

   The Company designates certain hedging instruments, such as interest rate futures contracts, to partially hedge against the fair value change caused by interest rates fluctuation in the Company's fixed income investments. Changes in the fair value of hedging instruments that are designated and qualify as fair value hedges are recognized in profit or loss immediately, together with any changes in the fair value of the hedged items that are attributable to the hedged risk.

b. Cash flow hedge

The Company designates certain hedging instruments, such as forward contracts, to partially hedge its foreign exchange rate risks or interest rate risks associated with certain highly probable forecast transactions (capital expenditures or issuance of debts). The effective portion of changes in the fair value of hedging instruments is recognized in other comprehensive income. When forecast transactions actually take place, the accumulated gains or losses that were recognized in other comprehensive income are transferred from equity to the initial cost of the hedged items, or reclassified to finance costs of hedged items in the same period or periods during which the hedged expected future cash flows affect profit or loss. The gains or losses from hedging instruments relating to the ineffective portion are recognized immediately in profit or loss.

The Company prospectively discontinues hedge accounting only when the hedging relationship ceases to meet the qualifying criteria; for instance, when the hedging instrument expires or is sold, terminated or exercised.

c. Hedges of net investments in foreign operations

The Company designates certain hedging instruments, such as bank loans denominated in foreign currency, as a hedge of net investments in foreign operations to manage the exchange differences arising on translation of foreign operations due to currency fluctuations. Any gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized in other comprehensive income and accumulated under the heading of foreign currency translation reserve. The gains or losses relating to the ineffective portion are recognized immediately in profit or loss.

The gains and losses on the hedging instrument relating to the effective portion of the hedge, which were accumulated in the foreign currency translation reserve, are reclassified to profit or loss on the disposal or partial disposal of a foreign operation.

Inventories

Inventories are stated at the lower of cost or net realizable value. Inventories are recorded at standard cost and adjusted to approximate weighted-average cost at the end of the reporting period. Net realizable value represents the estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale.

Investments Accounted for Using Equity Method

Investments accounted for using the equity method are investments in associates.

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

The operating results and assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting. Under the equity method, an investment in an associate is initially recognized in the consolidated statements of financial position at cost and adjusted thereafter to recognize the Company’s share of profit or loss and other comprehensive income of the associate as well as the distribution received. The Company also recognizes its share in the changes in the equities of associates.

Any excess of the cost of acquisition over the Company’s share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company’s share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

The Company discontinues the use of the equity method from the date when the Company ceases to have significant influence over an associate. When the Company retains an interest in the former associate, the Company measures the retained interest at fair value at that date. The difference between the carrying amount of the associate at the date the equity method was discontinued, and the fair value of any retained interest and any proceeds from disposing of a part interest in the associate is included in the determination of the gain or loss on disposal of the associate. In addition, the Company shall account for all amounts recognized in other comprehensive income in relation to that associate on the same basis as would be required if the associate had directly disposed of the related assets or liabilities. If the Company's ownership interest in an associate is reduced as a result of disposal, but the investment continues to be an associate, the Company should reclassify to profit or loss only a proportionate amount of the gain or loss previously recognized in other comprehensive income.

When the Company subscribes to additional shares in an associate at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Company's proportionate interest in the net assets of the associate. The Company records such a difference as an adjustment to investments with the corresponding amount charged or credited to capital surplus. If the Company's ownership interest is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

When a consolidated entity transacts with an associate, profits and losses resulting from the transactions with the associate are recognized in the Company's consolidated financial statements only to the extent of interests in the associate that are not owned by the Company.

Property, Plant and Equipment

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment. Costs include any incremental costs that are directly attributable to the construction, acquisition of the item of property, plant and equipment or borrowing costs eligible for capitalization.

Property, plant and equipment in the course of construction for production, supply or administrative purposes are carried at cost, less any recognized impairment loss. Such assets are classified to the appropriate categories of property, plant and equipment when completed and ready for intended use. Depreciation of these assets, on the same basis as other identical categories of property, plant and equipment, commences when the assets are available for their intended use.

Depreciation is recognized so as to write off the cost of the assets less their residual values over their useful lives, and it is computed using the straight-line method mainly over the following estimated useful lives: land improvements - 20 years; buildings (assets used by the Company and assets subject to operating leases) - 10 to 20 years; machinery and equipment (assets used by the Company and assets subject to operating leases) - 5 years; and office equipment - 5 years. The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimates accounted for on a prospective basis. Land is not depreciated.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the assets. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognized in profit or loss.

Leases

For a contract that contains a lease component and non-lease component, the Company may elect to account for the lease and non-lease components as a single lease component.

The Company as lessor

Rental income from operating lease is recognized on a straight-line basis over the term of the lease.

The Company as lessee

Except for payments for low-value asset leases and short-term leases (leases of machinery and equipment and others) which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases at the commencement date of the lease.

Right-of-use assets are measured at cost. The cost of right-of-use assets comprises the initial measurement of lease liabilities adjusted for lease payments and initial direct costs made at or before the commencement date, plus an estimate of costs needed to restore the underlying assets. Subsequent measurement is calculated as cost less accumulated depreciation and accumulated impairment loss and adjusted for changes in lease liabilities as a result of lease term modifications or other related factors. Right-of-use assets are presented separately in the consolidated balance sheets.

Right-of-use assets are depreciated using the straight-line method from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms. If the lease transfers ownership of the underlying assets to the Company by the end of the lease terms or if the cost of right-of-use assets reflects that the Company will exercise a purchase option, the Company depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are measured at the present value of the lease payments. Lease payments comprise fixed payments, variable lease payments which depend on an index or a rate and the exercise price of a purchase option if the Company is reasonably certain to exercise that option. The lease payments are discounted using the lessee’s incremental borrowing rates.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, the Company remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. Lease liabilities are presented on a separate line in the consolidated balance sheets.

Intangible Assets

Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

Other intangible assets

Other separately acquired intangible assets with finite useful lives are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized using the straight-line method over the following estimated useful lives: Technology license fees - the estimated life of the technology or the term of the technology transfer contract; software and system design costs - 3 years or contract period; patent and others - the economic life or contract period. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets

Goodwill

Goodwill is not amortized and instead is tested for impairment annually, or more frequently when there is an indication that the cash generating unit may be impaired. For the purpose of impairment testing, goodwill is allocated to each of the Company's cash-generating units or groups of cash-generating units that are expected to benefit from the synergies of the combination. If the recoverable amount of a cash-generating unit is less than its carrying amount, the difference is allocated first to reduce the carrying amount of any goodwill allocated to such cash generating unit and then to the other assets of the cash generating unit pro rata based on the carrying amount of each asset in the cash generating unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

Tangible assets, right-of-use assets and other intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets (property, plant and equipment), right-of-use assets and other intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

When an impairment loss subsequently reverses, the carrying amount of the asset or a cash-generating unit is increased to the revised estimate of its recoverable amount, but the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

Revenue Recognition

The Company recognizes revenue when performance obligations are satisfied. The performance obligations are satisfied when customers obtain control of the promised goods, which is generally when the goods are delivered to the customers' specified locations.

Revenue from sale of goods is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms to recognize refund liabilities, which is classified under accrued expenses and other current liabilities.

In principle, payment term granted to customers is due 30 days from the invoice date or 15-30 days from the end of the month of when the invoice is issued. Due to the short term nature of the receivables from sale of goods with the immaterial discounted effect, the Company measures them at the original invoice amounts without discounting.

Employee Benefits

Short-term employee benefits

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for service rendered by employees.

Retirement benefits

For defined contribution retirement benefit plans, payments to the benefit plan are recognized as an expense when the employees have rendered service entitling them to the contribution. For defined benefit retirement benefit plans, the cost of providing benefit is recognized based on actuarial calculations.

Defined benefit costs (including service cost, net interest and remeasurement) under the defined benefit retirement benefit plans are determined using the Projected Unit Credit Method. Service cost (including current service cost), and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Remeasurement, comprising actuarial gains and losses and the return on plan assets (excluding interest), is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability represents the actual deficit in the Company's defined benefit plan.

Treasury Stock

Treasury stock represents the outstanding shares that the Company buys back from market, which is stated at cost and shown as a deduction in shareholders' equity. When the Company retires treasury stock, the treasury stock account is reduced and the common stock as well as the capital surplus - additional paid-in capital are reversed on a pro rata basis. When the book value of the treasury stock exceeds the sum of the par value and additional paid-in capital, the difference is charged to capital surplus - treasury stock transactions and to retained earnings for any remaining amount.

Share-based payment arrangements

a. Equity-settled share-based payment arrangements

   Restricted shares for employees are expensed on a straight-line basis over the vesting period, based on the fair value at the grant date and the Company's best estimate of the number expected to ultimately vest, with a corresponding increase in other equity - unearned employee benefits.

   When restricted shares for employees are issued, other equity - unearned employee benefits is recognized on the grant date, with a corresponding increase in capital surplus - restricted shares for employees. Dividends paid to employees on restricted shares which do not need to be returned if employees resign in the vesting period are recognized as expenses upon the dividend declaration with a corresponding adjustment in retained earnings.

   At the end of each reporting period, the Company revises its estimate of the number of restricted shares for employees that are expected to vest. The impact from such revision is recognized in profit or loss so that the cumulative expenses reflect the revised estimate, with a corresponding adjustment to capital surplus - restricted shares for employees.

b. Cash-settled share-based payment arrangements

For cash-settled share-based payments, a liability is recognized for the services acquired, measured at the fair value of the liability incurred. At the end of each reporting period until the liability is settled, and at the date of settlement, the fair value of the liability is remeasured, with any changes in fair value recognized in profit or loss.

Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

Current tax

Income tax on unappropriated earnings (excluding earnings from foreign consolidated subsidiaries) is expensed in the year the shareholders approved the appropriation of earnings which is the year subsequent to the year the earnings are generated.

Adjustments of prior years’ tax liabilities are added to or deducted from the current year’s tax provision.

Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, net operating loss carryforwards and tax credits for research and development expenses to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered. The deferred tax assets which originally not recognized is also reviewed at the end of each reporting period and recognized to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the year in which the liability is settled or the asset is realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Current and deferred tax for the year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity, respectively.

Government Grants

Government grants are not recognized until there is reasonable assurance that the Company will comply with the conditions attaching to them and that the grants will be received.

Government grants whose primary condition is that the Company should purchase, construct or otherwise acquire noncurrent assets (mainly including land use right and depreciable assets) are recognized as a deduction from the carrying amount of the related assets and recognized as a reduced depreciation or amortization charge in profit or loss over the contract period or useful lives of the related assets. Government grants that are receivables as compensation for expenses already incurred are deducted from incurred expenses in the period in which they become receivables.

5. MATERIAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY

In the application of the aforementioned Company's accounting policies, the Company is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimate is revised if the revision affects only that year, or in the year of the revision and future years if the revision affects both current and future years.

Material Accounting Judgments

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied.

Commencement of Depreciation Related to Property, Plant and Equipment Classified as Equipment under Installation and Construction in Progress (EUI/CIP)

As described in Note 4, commencement of depreciation related to EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner.

Judgments on Lease Terms

In determining a lease term, the Company considers all facts and circumstances that create an economic incentive to exercise or not to exercise an option, including any expected changes in facts and circumstances from the commencement date until the exercise date of the option. Main factors considered include contractual terms and conditions covered by the optional periods, and the importance of the underlying asset to the lessee's operations, etc. The lease term is reassessed if a significant change in circumstances that are within the control of the Company occurs.

Key Sources of Estimation and Uncertainty

Estimation of Sales Returns and Allowances

Sales returns and other allowance is estimated and recorded based on historical experience and in consideration of different contractual terms. The amount is deducted from revenue in the same period the related revenue is recorded. The Company periodically reviews the reasonableness of the estimates.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses estimate to determine the net realizable value of inventory at the end of each reporting period.

The Company estimates the net realizable value of inventory for normal waste, obsolescence and unmarketable items at the end of reporting period and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is determined mainly based on assumptions of future demand within a specific time horizon.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible assets, right-of-use assets and intangible assets other than goodwill, the Company determines the independent cash flows, useful lives, expected future revenue and expenses related to the specific asset groups with the consideration of the nature of semiconductor industry. Any change in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Realization of Deferred Income Tax Assets

Deferred tax assets are recognized to the extent that it is probable that future taxable profits will be available against which those deferred tax assets can be utilized. Assessment of the realization of the deferred tax assets requires subjective judgment and estimate, including the future revenue growth and profitability, tax holidays, the amount of tax credits can be utilized and feasible tax planning strategies. Any changes in the global economic environment, the industry trends and relevant laws and regulations could result in significant adjustments to the deferred tax assets.

Determination of Lessees' Incremental Borrowing Rates

In determining a lessee's incremental borrowing rate used in discounting lease payments, the Company mainly takes into account the market risk-free rates, the estimated lessee's credit spreads and secured status in a similar economic environment.

6. CASH AND CASH EQUIVALENTS

	December 31, 2023	December 31, 2022
Cash and deposits in banks	$1,453,101,566	$1,327,884,602
Money market funds	10,898,720	1,406,792
Repurchase agreements	1,346,719	1,133,310
Government bonds/Agency bonds	50,787	2,451,570
Commercial paper	29,961	9,566,430
Corporate bonds	-	371,379
	$1,465,427,753	$1,342,814,083

Deposits in banks consisted of highly liquid time deposits that were readily convertible to known amounts of cash and were subject to an insignificant risk of changes in value.

7. FINANCIAL ASSETS AND LIABILITIES AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31, 2023	December 31, 2022
Financial assets		
Mandatorily measured at FVTPL		
Convertible preferred stocks	$ 13,307,160	$ -
Forward exchange contracts	701,182	947,546
Convertible bonds	223,454	122,852
Mutual funds	110,297	-
	$ 14,342,093	$ 1,070,398
Current	$ 924,636	$ 1,070,398
Noncurrent	13,417,457	-
	$ 14,342,093	$ 1,070,398
Financial liabilities		
Held for trading		
Forward exchange contracts	$ 121,412	$ 116,215

The Company entered into forward exchange contracts to manage exposures due to fluctuations of foreign exchange rates. These forward exchange contracts did not meet the criteria for hedge accounting. Therefore, the Company did not apply hedge accounting treatment for these forward exchange contracts.

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
December 31, 2023		
Sell NT$	January 2024	NT$ 26,251,763
Sell US$	January 2024 to March 2024	US$ 1,112,000
Sell JPY	January 2024	JPY 20,000,000
December 31, 2022		
Sell NT$	January 2023 to March 2023	NT$ 79,610,590
Sell US$	January 2023 to March 2023	US$ 752,486
Sell RMB	January 2023 to March 2023	RMB 1,448,371

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	December 31, 2023	December 31, 2022
Investments in debt instruments at FVTOCI		
Corporate bonds	$ 79,605,567	$ 66,116,166
Agency mortgage-backed securities	37,959,691	28,367,926
Government bonds/Agency bonds	22,338,901	18,961,888
Asset-backed securities	9,898,766	9,274,697
	149,802,925	122,720,677
Investments in equity instruments at FVTOCI		
Non-publicly traded equity investments	7,208,655	6,159,200
Publicly traded stocks	4,727,905	277,866
	11,936,560	6,437,066
	$ 161,739,485	$ 129,157,743
Current	$ 154,530,830	$ 122,998,543
Noncurrent	7,208,655	6,159,200
	$ 161,739,485	$ 129,157,743

These investments in equity instruments are held for medium to long-term purposes and therefore are accounted for as FVTOCI. For dividends recognized from these investments, please refer to consolidated statements of cash flows. All of the dividends are mainly from investments held at the end of the reporting period.

For the years ended December 31, 2023 and 2022, as the Company adjusted its investment portfolio, equity investments designated at FVTOCI were divested for NT$271,983 thousand and NT$561,600 thousand, respectively. The related other equity-unrealized gain/loss on financial assets at FVTOCI of NT$151,944 thousand and NT$303,242 thousand were transferred to increase retained earnings, respectively.

As of December 31, 2023 and 2022, the cumulative loss allowance for expected credit loss of NT$ 47,311 thousand and NT$37,783 thousand was recognized under investments in debt instruments at FVTOCI, respectively. Refer to Note 32 for information relating to the credit risk management and expected credit loss.

9. FINANCIAL ASSETS AT AMORTIZED COST

	December 31, 2023	December 31, 2022
Corporate bonds	$ 113,851,856	$ 81,041,056
Commercial paper	18,387,835	48,742,817
Government bonds/Agency bonds	13,803,559	-
Less: Allowance for impairment loss	(82,662)	(56,439)
	$ 145,960,588	$ 129,727,434
Current	$ 66,761,221	$ 94,600,219
Noncurrent	79,199,367	35,127,215
	$ 145,960,588	$ 129,727,434

Refer to Note 32 for information relating to credit risk management and expected credit loss for financial assets at amortized cost.

10. HEDGING FINANCIAL INSTRUMENTS

	December 31, 2023	December 31, 2022
Financial assets- current		
Fair value hedges		
Interest rate futures contracts	$ -	$ 2,329
Financial liabilities- current		
Fair value hedges		
Interest rate futures contracts	$ 43,764	$ 813
Hedges of net investments in foreign operations		
Bank loans	27,290,400	-
	$ 27,334,164	$ 813

Fair value hedge

The Company entered into interest rate futures contracts, which are used to partially hedge against the fair value changes caused by interest rate fluctuation in the Company's fixed income investments. The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%.

On the basis of economic relationships, the value of the interest rate futures contracts and the value of the hedged financial assets change in opposite directions in response to movements in interest rates.

The main source of hedge ineffectiveness in these hedging relationships is the credit risk of the hedged financial assets, which is not reflected in the fair value of the interest rate futures contracts. No other sources of ineffectiveness emerged from these hedging relationships during the hedging period. Amount of hedge ineffectiveness recognized in profit or loss is classified under other gains and losses, net.

The following tables summarize the information relating to the hedges of interest rate risks.

December 31, 2023

Hedging Instruments	Contract Amount (US$ in Thousands)	Maturity
Interest rate futures contracts - US Treasury futures	US$ 48,600	March 2024

Hedged Items	Asset Carrying Amount	Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	$ 3,959,523	$ 43,764

December 31, 2022

Hedging Instruments	Contract Amount (US$ in Thousands)	Maturity
Interest rate futures contracts - US Treasury futures	US$ 74,300	March 2023

Hedged Items	Asset Carrying Amount	Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	$ 4,008,179	$ (1,516)

The effect for the years ended December 31, 2023 and 2022 is detailed below:

Hedging Instruments/Hedged Items	Change in Value Used for Calculating Hedge Ineffectiveness Years Ended December 31	
	2023	2022
Hedging Instruments		
Interest rate futures contracts - US Treasury futures	$ 20,478	$ 283,995
Hedged Items		
Financial assets at FVTOCI	(20,478)	(283,995)
	$ -	$ -

Cash flow hedge

The Company entered into forward contracts to partially hedge foreign exchange rate risks or interest rate risks associated with certain highly probable forecast transactions (capital expenditures or issuance of debts). The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%. The forward contracts have maturities of 12 months or less.

On the basis of economic relationships, the Company expects that the value of forward contracts and the value of hedged transactions will change in opposite directions in response to movements in foreign exchange rates or interest rates.

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty’s own credit risk on the fair value of forward contracts. No other sources of ineffectiveness emerged from these hedging relationships during the hedging period. For the years ended December 31, 2023 and 2022, refer to Note 20(d) for gain or loss arising from changes in the fair value of hedging instruments, the amount transferred to initial carrying amount of hedged items and the amount reclassified to finance costs of hedged items.

The effect for the years ended December 31, 2023 and 2022 is detailed below:

Hedging Instruments/Hedged Items	Change in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2023	2022
Hedging Instruments		
Forward exchange contracts (capital expenditures)	$ 39,898	$ -
Forward interest rate contracts (issuance of debts)	$ -	$ 1,379,119
Hedged Items		
Forecast transaction (capital expenditures)	$ (39,898)	$ -
Forecast transaction (issuance of debts)	$ -	$ (1,379,119)

Hedges of net investments in foreign operations

TSMC has designated the bank loans denominated in foreign currency as a hedge of net investments in foreign operations to manage its foreign currency risk arising from investment in overseas subsidiaries.

The main source of hedge ineffectiveness in these hedging relationships is driven by the material difference between the notional amount of bank loans denominated in foreign currency and the net investment in foreign operations. No other sources of ineffectiveness have emerged from these hedging relationships during the hedging period. For the year ended December 31, 2023, refer to Note 20 (d) for gain or loss arising from changes in the fair value of hedging instruments.

The following tables summarize the information relating to the hedges of net investments in foreign operations.

December 31, 2023

Hedging Instruments	Contract Amount (In Thousands)	Annual Interest Rate	Maturity	Balance in Other Equity (Continuing Hedges)
Bank loans	JPY124,500,000	0%	Due by April 2024	$ 618,180

The effect for the years ended December 31, 2023 is detailed below:

Hedging Instruments/Hedged Items	Change in Value Used for Calculating Hedge Ineffectiveness
	Year Ended December 31, 2023
Hedging Instruments	
Bank loans	$ 618,180
Hedged Items	
Net investments in foreign operations	$ (618,180)

11. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2023	December 31, 2022
At amortized cost		
Notes and accounts receivable	$ 196,434,151	$ 222,761,927
Less: Loss allowance	(531,554)	(331,646)
	195,902,597	222,430,281
At FVTOCI	5,411,317	7,325,606
	$ 201,313,914	$ 229,755,887

The Company signed a contract with the bank to sell certain accounts receivable without recourse and transaction cost required. These accounts receivable are classified as at FVTOCI because they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets.

In principle, the payment term granted to customers is due 30 days from the invoice date or 15-30 days from the end of the month when the invoice is issued. Aside from recognizing impairment loss for credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels with consideration of factors of historical loss ratios and customers' financial conditions, competitiveness and business outlook. For accounts receivable past due over 90 days without collaterals or guarantees, the Company recognizes loss allowance at full amount.

Aging analysis of notes and accounts receivable

	December 31, 2023	December 31, 2022
Not past due	$ 183,188,499	$ 205,053,142
Past due		
Past due within 30 days	18,641,148	24,516,277
Past due over 31 days	15,821	518,114
Less: Loss allowance	(531,554)	(331,646)
	$ 201,313,914	$ 229,755,887

All of the Company's accounts receivable classified as at FVTOCI were not past due.

Movements of the loss allowance for accounts receivable

	Years Ended December 31	
	2023	2022
Balance, beginning of year	$ 331,646	$ 347,020
Provision (Reversal)	199,922	(15,449)
Effect of exchange rate changes	(14)	75
Balance, end of year	$ 531,554	$ 331,646

For the years ended December 31, 2023 and 2022, the changes in loss allowance were mainly due to the variations in the balance of accounts receivable of different risk levels.

12. INVENTORIES

	December 31, 2023	December 31, 2022
Finished goods	$ 34,511,032	$ 54,818,402
Work in process	156,498,469	125,661,912
Raw materials	38,818,273	20,389,115
Supplies and spare parts	21,169,314	20,279,719
	$ 250,997,088	$ 221,149,148

Write-down of inventories to net realizable value and reversal of write-down of inventories resulting from the increase in net realizable value were included in the cost of revenue. The amounts are illustrated below:

	Years Ended December 31	
	2023	2022
Net inventory losses	$ 3,494,638	$ 4,689,112

13. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2023	December 31, 2022	December 31, 2023	December 31, 2022
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	$ 13,590,430	$ 13,492,653	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and sales of integrated circuits and other semiconductor devices	Singapore	9,728,801	8,934,731	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	3,759,701	3,528,417	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	2,537,706	1,666,651	35%	35%
Mutual-Pak Technology Co., Ltd. (Mutual-Pak)	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	New Taipei, Taiwan	-	19,053	-	28%
			$ 29,616,638	$ 27,641,505		

Due to the decrease in shareholding to 17%, the Company consequently ceased to have significant influence over Mutual-Pak. Therefore, the investment in Mutual-Pak was classified as financial assets at FVTOCI starting November 2023.

As of December 31, 2023 and 2022, no investments in associates are individually material to the Company. Please refer to the consolidated statements of comprehensive income for recognition of share of both profit (loss) and other comprehensive income (loss) of associates that are not individually material.

The market prices of the associates' ownership held by the Company in publicly traded stocks calculated by the closing price are summarized as follows. The closing price represents the quoted price in active markets, the level 1 fair value measurement.

Name of Associate	December 31, 2023	December 31, 2022
GUC	$ 81,236,875	$ 29,926,918
VIS	$ 37,834,215	$ 35,977,321
Xintec	$ 14,188,445	$ 10,716,449

14. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2023	December 31, 2022
Assets used by the Company	$3,064,424,259	$2,693,815,688
Assets subject to operating leases	50,725	21,282
	$3,064,474,984	$2,693,836,970

Assets used by the Company

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
Balance at January 1, 2023	$ 7,661,817	$ 637,046,949	$ 4,295,942,530	$ 85,028,040	$ 1,336,842,608	$ 6,362,521,944
Additions (deductions)	-	182,033,268	1,120,848,716	18,205,541	(423,568,764)	897,518,761
Disposals or retirements	-	(585,487)	(28,525,908)	(3,325,297)	-	(32,436,692)
Transfers from right-of-use assets	-	-	4,444	-	-	4,444
Transfers from assets subject to operating leases	-	-	80,370	-	-	80,370
Transfers to assets subject to operating leases	-	-	(71,078)	-	-	(71,078)
Effect of exchange rate changes	(39,820)	(671,755)	(3,293,426)	(83,200)	(4,984,093)	(9,072,294)
Balance at December 31, 2023	$ 7,621,997	$ 817,822,975	$ 5,384,985,648	$ 99,825,084	$ 908,289,751	$ 7,218,545,455
Accumulated depreciation and impairment						
Balance at January 1, 2023	$ 556,161	$ 342,938,359	$ 3,264,880,880	$ 59,540,116	$ 790,740	$ 3,668,706,256
Additions	1,315	45,052,891	463,825,315	10,586,695	-	519,466,216
Disposals or retirements	-	(582,993)	(27,407,731)	(3,324,247)	-	(31,314,971)
Transfers from right-of-use assets	-	-	1,851	-	-	1,851
Transfers from assets subject to operating leases	-	-	53,537	-	-	53,537
Transfers to assets subject to operating leases	-	-	(45,731)	-	-	(45,731)
Effect of exchange rate changes	598	(394,346)	(2,299,629)	(52,585)	-	(2,745,962)
Balance at December 31, 2023	$ 558,074	$ 387,013,911	$ 3,699,008,492	$ 66,749,979	$ 790,740	$ 4,154,121,196
Carrying amounts at December 31, 2023	$ 7,063,923	$ 430,809,064	$ 1,685,977,156	$ 33,075,105	$ 907,499,011	$ 3,064,424,259
Cost						
Balance at January 1, 2022	$ 6,488,230	$ 576,597,777	$ 3,984,749,236	$ 76,154,170	$ 593,155,733	$ 5,237,145,146
Additions	816,366	59,443,801	330,782,690	10,325,337	738,523,914	1,139,892,108
Disposals or retirements	-	(236,765)	(25,846,536)	(1,709,151)	-	(27,792,452)
Transfers to assets subject to operating leases	-	-	(65,779)	-	-	(65,779)
Effect of exchange rate changes	357,221	1,242,136	6,322,919	257,684	5,162,961	13,342,921
Balance at December 31, 2022	$ 7,661,817	$ 637,046,949	$ 4,295,942,530	$ 85,028,040	$ 1,336,842,608	$ 6,362,521,944

(Continued)

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Accumulated depreciation and impairment						
Balance at January 1, 2022	$ 499,826	$ 306,165,242	$ 2,903,539,441	$ 51,826,663	$ -	$ 3,262,031,172
Additions	1,402	35,982,373	380,216,160	9,216,278	-	425,416,213
Disposals or retirements	-	(225,637)	(24,706,719)	(1,708,639)	-	(26,640,995)
Transfers to assets subject to operating leases	-	-	(40,266)	-	-	(40,266)
Impairment	-	-	-	-	790,740	790,740
Effect of exchange rate changes	54,933	1,016,381	5,872,264	205,814	-	7,149,392
Balance at December 31, 2022	$ 556,161	$ 342,938,359	$ 3,264,880,880	$ 59,540,116	$ 790,740	$ 3,668,706,256
Carrying amounts at December 31, 2022	$ 7,105,656	$ 294,108,590	$ 1,031,061,650	$ 25,487,924	$ 1,336,051,868	$ 2,693,815,688

(Concluded)

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

In the first quarter of 2022, the Company recognized an impairment loss of NT$790,740 thousand for certain machinery and equipment that were assessed to have no future use, and the recoverable amount of the aforementioned assets were nil. Such impairment loss was recognized in other operating income and expenses.

Information about capitalized interest is set out in Note 23.

15. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31, 2023	December 31, 2022
Carrying amounts		
Land	$ 37,437,179	$ 38,525,856
Buildings	2,946,008	3,356,700
Machinery and equipment	-	2,965
Office equipment	41,643	28,615
	$ 40,424,830	$ 41,914,136

	Years Ended December 31 2023	2022
Additions to right-of-use assets	$ 2,145,431	$ 12,610,664
Depreciation of right-of-use assets		
Land	$ 2,459,068	$ 2,119,828
Buildings	976,097	928,726
Machinery and equipment	369	863
Office equipment	23,434	23,588
	$ 3,458,968	$ 3,073,005

b. Lease liabilities

	December 31, 2023	December 31, 2022
Carrying amounts		
Current portion (classified under accrued expenses and other current liabilities)	$ 2,810,551	$ 2,603,504
Noncurrent portion	28,681,835	29,764,097
	$ 31,492,386	$ 32,367,601

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2023	December 31, 2022
Land	0.39%-2.30%	0.39%-2.30%
Buildings	0.57%-6.52%	0.39%-5.63%
Machinery and equipment	-	0.71%
Office equipment	0.28%-7.13%	0.28%-4.71%

c. Material terms of right-of-use assets

The Company leases land and buildings mainly for the use of plants and offices with lease terms of 1 to 36 years. The lease contracts for land located in the R.O.C. specify that lease payments will be adjusted every 2 years on the basis of changes in announced land value prices. The Company does not have purchase options to acquire the leasehold land and buildings at the end of the lease terms.

d. Other lease information

	Years Ended December 31	
	2023	2022
Expenses relating to short-term leases	$ 1,215,147	$ 4,731,087
Total cash outflow for leases	$ 4,916,886	$ 7,618,290

16. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
Cost					
Balance at January 1, 2023	$ 5,791,821	$ 25,759,019	$ 48,675,794	$ 11,701,892	$ 91,928,526
Additions	-	461,089	4,947,364	621,312	6,029,765
Disposals or retirements	-	-	(4,289,185)	-	(4,289,185)
Effect of exchange rate changes	4,617	1,243	(16,942)	24,230	13,148
Balance at December 31, 2023	$ 5,796,438	$ 26,221,351	$ 49,317,031	$ 12,347,434	$ 93,682,254

(Continued)

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
Accumulated amortization and impairment					
Balance at January 1, 2023	$ -	$ 17,696,437	$ 38,838,394	$ 9,394,540	$ 65,929,371
Additions	-	2,792,353	5,308,109	1,157,788	9,258,250
Disposals or retirements	-	-	(4,289,152)	-	(4,289,152)
Effect of exchange rate changes	-	1,280	(10,680)	26,441	17,041
Balance at December 31, 2023	$ -	$ 20,490,070	$ 39,846,671	$ 10,578,769	$ 70,915,510
Carrying amounts at December 31, 2023	$ 5,796,438	$ 5,731,281	$ 9,470,360	$ 1,768,665	$ 22,766,744
Cost					
Balance at January 1, 2022	$ 5,379,164	$ 23,533,959	$ 43,650,957	$ 11,497,309	$ 84,061,389
Additions	-	2,253,095	5,078,967	203,030	7,535,092
Disposals or retirements	-	(29,991)	(66,261)	-	(96,252)
Effect of exchange rate changes	412,657	1,956	12,131	1,553	428,297
Balance at December 31, 2022	$ 5,791,821	$ 25,759,019	$ 48,675,794	$ 11,701,892	$ 91,928,526
Accumulated amortization and impairment					
Balance at January 1, 2022	$ -	$ 14,912,293	$ 34,121,578	$ 8,205,821	$ 57,239,692
Additions	-	2,793,539	4,774,522	1,188,033	8,756,094
Disposals or retirements	-	(11,351)	(66,261)	-	(77,612)
Effect of exchange rate changes	-	1,956	8,555	686	11,197
Balance at December 31, 2022	$ -	$ 17,696,437	$ 38,838,394	$ 9,394,540	$ 65,929,371
Carrying amounts at December 31, 2022	$ 5,791,821	$ 8,062,582	$ 9,837,400	$ 2,307,352	$ 25,999,155

(Concluded)

The Company's goodwill has been tested for impairment at the end of the annual reporting period and the recoverable amount is determined based on the value in use. The value in use was calculated based on the cash flow forecast from the financial budgets covering the future five-year period, and the Company used annual discount rates of 9.0% and 8.7% in its test of impairment as of December 31, 2023 and 2022, respectively, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2023 and 2022, the Company did not recognize any impairment loss on goodwill.

17. BONDS PAYABLE

	December 31, 2023	December 31, 2022
Domestic unsecured bonds	$ 447,194,000	$ 379,526,000
Overseas unsecured bonds	476,578,500	476,051,500
Less: Discounts on bonds payable	(2,874,947)	(3,141,061)
Less: Current portion	(6,997,710)	(18,100,000)
	$ 913,899,843	$ 834,336,439

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
NT$ unsecured bonds					
101-3	-	October 2012 to October 2022	$ 4,400,000	1.53%	Bullet repayment; interest payable annually
101-4	C	January 2013 to January 2023	3,000,000	1.49%	The same as above
102-1	C	February 2013 to February 2023	3,600,000	1.50%	The same as above
102-2	B	July 2013 to July 2023	3,500,000	1.70%	The same as above
102-4	E	September 2013 to March 2023	5,400,000	2.05%	The same as above
	F	September 2013 to September 2023	2,600,000	2.10%	The same as above
109-1	A	March 2020 to March 2025	3,000,000	0.58%	The same as above
	B	March 2020 to March 2027	10,500,000	0.62%	The same as above
	C	March 2020 to March 2030	10,500,000	0.64%	The same as above
109-2	A	April 2020 to April 2025	5,900,000	0.52%	The same as above
	B	April 2020 to April 2027	10,400,000	0.58%	The same as above
	C	April 2020 to April 2030	5,300,000	0.60%	The same as above
109-3	A	May 2020 to May 2025	4,500,000	0.55%	The same as above
	B	May 2020 to May 2027	7,500,000	0.60%	The same as above
	C	May 2020 to May 2030	2,400,000	0.64%	The same as above
109-4	A	July 2020 to July 2025	5,700,000	0.58%	Two equal installments in last two years; interest payable annually
	B	July 2020 to July 2027	6,300,000	0.65%	The same as above
	C	July 2020 to July 2030	1,900,000	0.67%	The same as above
109-5	A	September 2020 to September 2025	4,800,000	0.50%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
109-5	B	September 2020 to September 2027	$ 8,000,000	0.58%	Two equal installments in last two years; interest payable annually
	C	September 2020 to September 2030	2,800,000	0.60%	The same as above
109-6 (Green bond)	A	December 2020 to December 2025	1,600,000	0.40%	The same as above
	B	December 2020 to December 2027	5,600,000	0.44%	The same as above
	C	December 2020 to December 2030	4,800,000	0.48%	The same as above
109-7	A	December 2020 to December 2025	1,900,000	0.36%	The same as above
	B	December 2020 to December 2027	10,200,000	0.41%	The same as above
	C	December 2020 to December 2030	6,400,000	0.45%	The same as above
110-1	A	March 2021 to March 2026	4,800,000	0.50%	Bullet repayment; interest payable annually
	B	March 2021 to March 2028	11,400,000	0.55%	The same as above
	C	March 2021 to March 2031	4,900,000	0.60%	The same as above
110-2	A	May 2021 to May 2026	5,200,000	0.50%	The same as above
	B	May 2021 to May 2028	8,400,000	0.58%	The same as above
	C	May 2021 to May 2031	5,600,000	0.65%	The same as above
110-3	A	June 2021 to June 2026	6,900,000	0.52%	The same as above
	B	June 2021 to June 2028	7,900,000	0.58%	The same as above
	C	June 2021 to June 2031	4,900,000	0.65%	The same as above
110-4	A	August 2021 to August 2025	4,000,000	0.485%	The same as above
	B	August 2021 to August 2026	8,000,000	0.50%	The same as above
	C	August 2021 to August 2028	5,400,000	0.55%	The same as above
	D	August 2021 to August 2031	4,200,000	0.62%	The same as above
110-6	A	October 2021 to April 2026	3,200,000	0.535%	The same as above
	B	October 2021 to October 2026	6,900,000	0.54%	The same as above
	C	October 2021 to October 2028	4,600,000	0.60%	The same as above
	D	October 2021 to October 2031	1,600,000	0.62%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
110-7	A	December 2021 to December 2026	$ 7,700,000	0.65%	Bullet repayment; interest payable annually
	B	December 2021 to June 2027	3,500,000	0.675%	The same as above
	C	December 2021 to December 2028	5,500,000	0.72%	The same as above
111-1 (Green bond)	A	January 2022 to January 2027	2,100,000	0.63%	The same as above
	B	January 2022 to January 2029	3,300,000	0.72%	The same as above
111-2	A	March 2022 to September 2026	3,000,000	0.84%	The same as above
	B	March 2022 to March 2027	9,600,000	0.85%	The same as above
	C	March 2022 to March 2029	1,600,000	0.90%	The same as above
111-3 (Green bond)	-	May 2022 to May 2027	6,100,000	1.50%	The same as above
111-4 (Green bond)	A	July 2022 to July 2026	1,200,000	1.60%	The same as above
	B	July 2022 to July 2027	10,100,000	1.70%	The same as above
	C	July 2022 to July 2029	1,200,000	1.75%	The same as above
	D	July 2022 to July 2032	1,400,000	1.95%	The same as above
111-5	A	August 2022 to June 2027	2,000,000	1.65%	The same as above
	B	August 2022 to August 2027	8,900,000	1.65%	The same as above
	C	August 2022 to August 2029	2,200,000	1.65%	The same as above
	D	August 2022 to August 2032	2,500,000	1.82%	The same as above
111-6 (Green bond)	A	October 2022 to October 2027	5,700,000	1.75%	The same as above
	B	October 2022 to October 2029	1,000,000	1.80%	The same as above
	C	October 2022 to October 2032	3,500,000	2.00%	The same as above
112-1 (Green bond)	A	March 2023 to March 2028	12,200,000	1.54%	The same as above
	B	March 2023 to March 2030	2,300,000	1.60%	The same as above
	C	March 2023 to March 2033	4,800,000	1.78%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
112-2 (Green bond)	A	May 2023 to May 2028	$ 13,100,000	1.60%	Bullet repayment; interest payable annually
	B	May 2023 to May 2030	2,300,000	1.65%	The same as above
	C	May 2023 to May 2033	5,300,000	1.82%	The same as above
112-3	A	June 2023 to June 2028	11,400,000	1.60%	The same as above
	B	June 2023 to June 2030	2,600,000	1.65%	The same as above
	C	June 2023 to June 2033	6,000,000	1.80%	The same as above
112-4	A	August 2023 to August 2028	7,300,000	1.60%	The same as above
	B	August 2023 to August 2030	700,000	1.65%	The same as above
	C	August 2023 to August 2033	7,900,000	1.76%	The same as above
112-5	A	October 2023 to October 2028	4,300,000	1.62%	The same as above
	B	October 2023 to October 2033	5,500,000	1.76%	The same as above

(Concluded)

Issuance	Tranche	Issuance Period	Total Amount (US$ in Thousands)	Coupon Rate	Repayment and Interest Payment
US$ unsecured bonds					
109-1	-	September 2020 to September 2060	US$1,000,000	2.70%	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter); interest payable annually
110-5	-	September 2021 to September 2051	1,000,000	3.10%	The same as above

The major terms of overseas unsecured bonds are as follows:

Issuance Period	Total Amount (US$ in Thousands)	Coupon Rate	Repayment and Interest Payment
September 2020 to September 2025	US$1,000,000	0.75%	Bullet repayment (callable at any time, in whole or in part, at the relevant redemption price according to relevant agreements); interest payable semi-annually

(Continued)

Issuance Period	Total Amount (US$ in Thousands)	Coupon Rate	Repayment and Interest Payment
September 2020 to September 2027	US$ 750,000	1.00%	Bullet repayment (callable at any time, in whole or in part, at the relevant redemption price according to relevant agreements); interest payable semi-annually
September 2020 to September 2030	1,250,000	1.375%	The same as above
April 2021 to April 2026	1,100,000	1.25%	The same as above
April 2021 to April 2028	900,000	1.75%	The same as above
April 2021 to April 2031	1,500,000	2.25%	The same as above
October 2021 to October 2026	1,250,000	1.75%	The same as above
October 2021 to October 2031	1,250,000	2.50%	The same as above
October 2021 to October 2041	1,000,000	3.125%	The same as above
October 2021 to October 2051	1,000,000	3.25%	The same as above
April 2022 to April 2027	1,000,000	3.875%	The same as above
April 2022 to April 2029	500,000	4.125%	The same as above
April 2022 to April 2032	1,000,000	4.25%	The same as above
April 2022 to April 2052	1,000,000	4.50%	The same as above
July 2022 to July 2027	400,000	4.375%	The same as above
July 2022 to July 2032	600,000	4.625%	The same as above

(Concluded)

18. LONG-TERM BANK LOANS

	December 31, 2023	December 31, 2022
Unsecured loans	$ 6,706,389	$ 6,013,333
Less: Discounts on government grants	(27,868)	(39,397)
Less: Current portion	(2,295,556)	(1,213,889)
	$ 4,382,965	$ 4,760,047
Loan content		
Annual interest rate	1.15%-1.35%	1.03%-1.23%
Maturity date	Due by December 2027	Due by December 2027

The long-term bank loans of the Company are with preferential interest rates subsidized by the government, and the loans are used to fund capital expenditure qualifying for the subsidy.

19. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

The plan under the R.O.C. Labor Pension Act (the "Act") is deemed a defined contribution plan. Pursuant to the Act, TSMC and VisEra Tech have made monthly contributions equal to 6% of each employee's monthly salary to employees' pension accounts. Furthermore, TSMC North America, TSMC Europe, TSMC Japan, TSMC JDC, TSMC 3DIC, TSMC China, TSMC Nanjing, TSMC Arizona, JASM, TSMC Technology and TSMC Canada also make monthly contributions at certain percentages of the basic salary of their employees. Accordingly, the Company recognized expenses of NT$5,365,458 thousand and NT$4,550,387 thousand for the years ended December 31, 2023 and 2022, respectively.

b. Defined benefit plans

TSMC has defined benefit plans under the R.O.C. Labor Standards Law that provide benefits based on an employee's length of service and average monthly salary for the six-month period prior to retirement. The Company contributes an amount equal to 2% of salaries paid each month to their respective pension funds (the Funds), which are administered by the Labor Pension Fund Supervisory Committee (the Committee) and deposited in the Committee's name in the Bank of Taiwan. Before the end of each year, the Company assesses the balance in the Funds. If the amount of the balance in the Funds is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company is required to fund the difference in one appropriation that should be made before the end of March of the next year. The Funds are operated and managed by the government's designated authorities; as such, the Company does not have any right to intervene in the investments of the Funds.

Amounts recognized in respect of these defined benefit plans were as follows:

	Years Ended December 31	
	2023	**2022**
Current service cost	$ 139,101	$ 134,376
Net interest expense	142,291	74,265
Components of defined benefit costs recognized in profit or loss	281,392	208,641
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(16,252)	(429,948)
Actuarial loss arising from experience adjustments	68,342	1,413,760
Actuarial (gain) loss arising from changes in financial assumptions	571,266	(160,752)
Components of defined benefit costs recognized in other comprehensive income	623,356	823,060
Total	$ 904,748	$ 1,031,701

The pension costs of the aforementioned defined benefit plans were recognized in profit or loss by the following categories:

	Years Ended December 31	
	2023	**2022**
Cost of revenue	$ 182,333	$ 135,125
Research and development expenses	76,120	55,632
General and administrative expenses	19,248	15,129
Marketing expenses	3,691	2,755
	$ 281,392	$ 208,641

The amounts arising from the defined benefit obligation of the Company were as follows:

	December 31, 2023	December 31, 2022
Present value of defined benefit obligation	$ 17,995,066	$ 17,483,951
Fair value of plan assets	(8,737,842)	(8,162,860)
Net defined benefit liability	$ 9,257,224	$ 9,321,091

Movements in the present value of the defined benefit obligation were as follows:

	Years Ended December 31	
	2023	2022
Balance, beginning of year	$ 17,483,951	$ 16,585,442
Current service cost	139,101	134,376
Interest expense	303,970	120,791
Remeasurement:		
Actuarial loss arising from experience adjustments	68,342	1,413,760
Actuarial (gain) loss arising from changes in financial assumptions	571,266	(160,752)
Benefits paid from plan assets	(556,455)	(585,343)
Benefits paid directly by the Company	(15,109)	(24,323)
Balance, end of year	$ 17,995,066	$ 17,483,951

Movements in the fair value of the plan assets were as follows:

	Years Ended December 31	
	2023	2022
Balance, beginning of year	$ 8,162,860	$ 5,548,563
Interest income	161,679	46,526
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	16,252	429,948
Contributions from employer	953,506	2,723,166
Benefits paid from plan assets	(556,455)	(585,343)
Balance, end of year	$ 8,737,842	$ 8,162,860

The fair value of the plan assets by major categories at the end of reporting period was as follows:

	December 31, 2023	December 31, 2022
Cash	$ 1,351,744	$ 1,337,893
Equity instruments	4,998,919	4,696,909
Debt instruments	2,387,179	2,128,058
	$ 8,737,842	$ 8,162,860

The actuarial valuations of the present value of the defined benefit obligation were carried out by qualified actuaries. The principal assumptions of the actuarial valuation were as follows:

	Measurement Date	
	December 31, 2023	**December 31, 2022**
Discount rate	1.40%	1.80%
Future salary increase rate	4.00%	4.00%

Through the defined benefit plans under the R.O.C. Labor Standards Law, the Company is exposed to the following risks:

1) Investment risk: The pension funds are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the government's designated authorities or under the mandated management. However, under the R.O.C. Labor Standards Law, the rate of return on assets shall not be less than the average interest rate on a two-year time deposit published by the local banks and the government is responsible for any shortfall in the event that the rate of return is less than the required rate of return.

2) Interest risk: A decrease in the government bond interest rate will increase the present value of the defined benefit obligation; however, this will be partially offset by an increase in the return on the debt investments of the plan assets.

   Assuming a hypothetical decrease in interest rate at the end of the reporting period contributed to a decrease of 0.5% (and not below 0.0%) in the discount rate and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$757,663 thousand and NT$766,692 thousand as of December 31, 2023 and 2022, respectively.

3) Salary risk: The present value of the defined benefit obligation is calculated by reference to the future salaries of plan participants. As such, an increase in the salary of the plan participants will increase the present value of the defined benefit obligation.

   Assuming the expected salary rate increases by 0.5% at the end of the reporting period and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$735,167 thousand and NT$746,933 thousand as of December 31, 2023 and 2022, respectively.

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

Furthermore, in presenting the above sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation liability.

The Company expects to make contributions of NT$991,646 thousand to the defined benefit plans in the next year starting from December 31, 2023. The weighted average duration of the defined benefit obligation is 8 years.

20. EQUITY

a. Capital stock

	December 31, 2023	December 31, 2022
Authorized shares (in thousands)	28,050,000	28,050,000
Authorized capital	$ 280,500,000	$ 280,500,000
Issued and paid shares (in thousands)	25,932,071	25,930,380
Issued capital	$ 259,320,710	$ 259,303,805

The par value of issued common shares is NT$10 per share. A holder of common shares has one vote for each common share and is entitled to receive dividends.

The authorized shares include 500,000 thousand shares allocated for the exercise of employee stock options.

On March 1, 2023 and March 1, 2022, the Company issued employee restricted stock awards (RSAs) for its employees in a total of 2,110 thousand shares and 1,387 thousand shares, respectively, with a par value of NT$10 per share. The aforementioned issuance of new shares was approved by the relevant authority and the registration has been completed.

During the first quarter of 2023, TSMC reclaimed 419 thousand employee restricted shares that were unvested. On May 9, 2023, TSMC's Board of Directors resolved to cancel the aforementioned shares. Subsequently, TSMC completed the registration for share cancellation. Refer to Note 27 for information on RSAs.

On May 10, 2022, TSMC's Board of Directors resolved to cancel 1,387 thousand treasury shares. Refer to Note 20 (e) for information.

As of December 31, 2023, TSMC's total issued and outstanding ADSs were 1,063,103 thousand units, representing 5,315,513 thousand common shares.

b. Capital surplus

The categories of uses and the sources of capital surplus based on regulations were as follows:

	December 31, 2023	December 31, 2022
May be used to offset a deficit, distributed as cash dividends, or transferred to share capital		
Additional paid-in capital	$ 24,406,854	$ 24,183,645
From merger	22,803,291	22,803,291
From convertible bonds	8,892,371	8,892,371
From difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal	8,406,282	8,406,282
Donations - donated by shareholders	11,275	11,275

(Continued)

	December 31, 2023	December 31, 2022
May only be used to offset a deficit		
From share of changes in equities of subsidiaries	$ 4,199,936	$ 4,229,892
From share of changes in equities of associates	302,396	311,863
Donations - unclaimed dividend	70,093	53,680
May not be used for any purpose		
Employee restricted shares	783,883	438,029
	$ 69,876,381	$ 69,330,328

(Concluded)

If such capital surplus is distributed as transferred to share capital, it is limited to a certain percentage of the Company's paid-in capital each year.

c. Retained earnings and dividend policy

TSMC's Articles of Incorporation provide that, earnings distribution may be made on a quarterly basis after the close of each quarter. Distribution of earnings by way of cash dividends should be approved by TSMC's Board of Directors and reported to TSMC's shareholders in its meeting. When allocating earnings, TSMC shall first estimate and reserve the taxes to be paid, offset its losses, set aside a legal capital reserve at 10% of the remaining earnings (until the accumulated legal capital reserve equals TSMC's paid-in capital), then set aside a special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge. Any balance left over shall be allocated according to relevant laws and TSMC's Articles of Incorporation.

TSMC's Articles of Incorporation also provide that profits of TSMC may be distributed by way of cash dividend and/or stock dividend. However, distribution of earnings shall be made preferably by way of cash dividend. Distribution of earnings may also be made by way of stock dividend, provided that the ratio for stock dividend shall not exceed 50% of the total distribution.

The legal capital reserve may be used to offset a deficit, or be distributed as dividends in cash or stocks for the portion in excess of 25% of the paid-in capital if the Company incurs no loss.

Pursuant to existing regulations, the Company is required to set aside an additional special capital reserve equivalent to the net debit balance of the other components of stockholders' equity, such as the accumulated balance of the foreign currency translation reserve, the effectiveness of hedges of net investments in foreign operations, unrealized valuation gain or loss from fair value through other comprehensive income financial assets, gain or loss from changes in fair value of hedging instruments in cash flow hedges, etc. For the subsequent decrease in the deduction amount to stockholders' equity, any special reserve appropriated may be reversed to the extent that the net debit balance reverses.

The appropriations of 2023, 2022 and 2021 quarterly earnings have been approved by TSMC's Board of Directors in its meeting, respectively. The appropriations and cash dividends per share were as follows:

	Fourth Quarter of 2023	Third Quarter of 2023	Second Quarter of 2023	First Quarter of 2023
Resolution Date of TSMC's Board of Directors in its meeting	February 6, 2024	November 14, 2023	August 8, 2023	May 9, 2023
Special capital reserve	$ 28,020,822	$ (17,228,363)	$ (6,365,562)	$ 3,273,452
Cash dividends to shareholders	$ 90,762,248	$ 90,762,248	$ 77,796,213	$ 77,796,213
Cash dividends per share (NT$)	$ 3.50	$ 3.50	$ 3.00	$ 3.00

Resolution Date of TSMC's Board of Directors in its meeting	Fourth Quarter of 2022 February 14, 2023	Third Quarter of 2022 November 8, 2022	Second Quarter of 2022 August 9, 2022	First Quarter of 2022 May 10, 2022
Special capital reserve	$ 17,166,163	$ (31,910,353)	$ (12,002,798)	$ (15,541,054)
Cash dividends to shareholders	$ 71,308,546	$ 71,308,547	$ 71,308,546	$ 71,308,546
Cash dividends per share (NT$)	$ 2.75	$ 2.75	$ 2.75	$ 2.75

Resolution Date of TSMC's Board of Directors in its meeting	Fourth Quarter of 2021 February 15, 2022	Third Quarter of 2021 November 9, 2021	Second Quarter of 2021 August 10, 2021	First Quarter of 2021 June 9, 2021
Special capital reserve	$ 3,304,303	$ 710,169	$ 10,201,220	$ (6,287,050)
Cash dividends to shareholders	$ 71,308,546	$ 71,308,547	$ 71,308,546	$ 71,308,546
Cash dividends per share (NT$)	$ 2.75	$ 2.75	$ 2.75	$ 2.75

The special capital reserve for 2023 is to be presented for approval in TSMC's shareholders' meeting to be held on June 4, 2024 (expected).

The quarterly cash dividends per share is affected by the subsequent number of outstanding ordinary shares, the information of the actual payout is available at the Market Observation Post System website.

d. Others

Changes in others were as follows:

	Year Ended December 31, 2023				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ (11,743,301)	$ (10,056,353)	$ 1,479,181	$ (185,153)	$ (20,505,626)
Exchange differences arising on translation of foreign operations	(14,255,586)	-	-	-	(14,255,586)
Gain (Loss) on hedging instruments designated as hedges of net investments in foreign operations	618,180	-	-	-	618,180
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	1,953,138	-	-	1,953,138
Debt instruments	-	3,639,779	-	-	3,639,779
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(151,944)	-	-	(151,944)
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	473,897	-	-	473,897
Loss allowance adjustments from debt instruments	-	9,525	-	-	9,525
Gain (loss) arising on changes in the fair value of hedging instruments and hedged item affects profit or loss	-	-	(34,837)	-	(34,837)
Transferred to initial carrying amount of hedged items	-	-	(45,181)	-	(45,181)
Issuance of shares	-	-	-	(585,968)	(585,968)
Share-based payment expenses recognized	-	-	-	477,687	477,687
Share of other comprehensive income (loss) of associates	63,938	32,055	(3,288)	-	92,705
Income tax effect	-	(25)	-	-	(25)
Balance, end of year	$ (25,316,769)	$ (4,099,928)	$ 1,395,875	$ (293,434)	$ (28,314,256)

	Year Ended December 31, 2022				
	Foreign Currency Translation Reserve	**Unrealized Gain (Loss) on Financial Assets at FVTOCI**	**Gain (Loss) on Hedging Instruments**	**Unearned Stock-Based Employee Compensation**	**Total**
Balance, beginning of year	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)
Exchange differences arising on translation of foreign operations	51,009,722	-	-	-	51,009,722
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	(263,380)	-	-	(263,380)
Debt instruments	-	(10,513,643)	-	-	(10,513,643)
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(303,242)	-	-	(303,242)
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	410,076	-	-	410,076
Loss allowance adjustments from debt instruments	-	909	-	-	909
Gain (loss) arising on changes in the fair value of hedging instruments and hedged item affects profit or loss	-	-	1,329,231	-	1,329,231
Transferred to initial carrying amount of hedged items	-	-	(52,929)	-	(52,929)
Issuance of shares	-	-	-	(451,899)	(451,899)
Share-based payment expenses recognized	-	-	-	266,746	266,746
Share of other comprehensive income (loss) of associates	550,338	38,696	76,307	-	665,341
Income tax effect	-	(79)	6,036	-	5,957
Balance, end of year	$ (11,743,301)	$ (10,056,353)	$ 1,479,181	$ (185,153)	$ (20,505,626)

The aforementioned other equity includes the changes in other equities of TSMC and TSMC's share of its subsidiaries and associates.

e. Treasury stock

For TSMC's shareholders' interests, TSMC's Board of Directors approved a share buyback program on February 15, 2022 to repurchase 1,387 thousand shares. TSMC has completed the aforementioned share buyback program during the first quarter of 2022. On May 10, 2022, TSMC's Board of Directors resolved to cancel the 1,387 thousand shares. Subsequently, TSMC completed the registration for share cancellation.

21. NET REVENUE

a. Disaggregation of revenue from contracts with customers

	Years Ended December 31	
Product	**2023**	**2022**
Wafer	$1,882,518,080	$1,991,855,947
Others	279,217,761	272,035,345
	$2,161,735,841	$2,263,891,292

Geography	Years Ended December 31 2023	2022
Taiwan	$ 149,777,343	$ 210,470,783
United States	1,408,841,921	1,493,328,765
China	267,154,140	245,168,746
Japan	132,072,000	119,099,336
Europe, the Middle East and Africa	117,348,237	123,767,140
Others	86,542,200	72,056,522
	$2,161,735,841	$2,263,891,292

The Company categorized the net revenue mainly based on the countries where the customers are headquartered.

Platform	Years Ended December 31 2023	2022
High Performance Computing	$ 934,768,625	$ 932,383,729
Smartphone	814,914,287	888,879,250
Internet of Things	161,916,543	196,114,987
Automotive	133,654,276	116,380,987
Digital Consumer Electronics	46,999,803	56,158,772
Others	69,482,307	73,973,567
	$2,161,735,841	$2,263,891,292

Resolution	Years Ended December 31 2023	2022
3-nanometer	$ 108,045,275	$ -
5-nanometer	629,300,387	508,689,881
7-nanometer	357,247,365	535,153,763
10-nanometer	23,332	24,871
16-nanometer	191,306,073	258,544,274
20-nanometer	10,359,042	8,853,291
28-nanometer	186,924,916	206,611,955
40/45-nanometer	114,667,360	145,546,243
65-nanometer	107,425,400	93,288,614
90-nanometer	25,642,010	40,184,169
0.11/0.13 micron	47,149,333	57,992,328
0.15/0.18 micron	86,614,213	110,571,222
0.25 micron and above	17,813,374	26,395,336
Wafer revenue	$1,882,518,080	$1,991,855,947

b. Contract balances

	December 31, 2023	December 31, 2022	January 1, 2022
Contract liabilities (classified under accrued expenses and other current liabilities)	$ 52,736,430	$ 70,806,617	$ 39,762,588

The changes in the contract liability balances primarily result from the timing difference between the satisfaction of performance obligation and the customer's payment.

The Company recognized revenue from the beginning balance of contract liability, which amounted to NT$69,598,265 thousand and NT$38,433,111 thousand for the years ended December 31, 2023 and 2022, respectively.

c. Temporary receipts from customers

	December 31, 2023	December 31, 2022
Current portion (classified under accrued expenses and other current liabilities)	$ 114,639,514	$ 107,723,580
Noncurrent portion (classified under other noncurrent liabilities)	163,655,128	168,399,207
	$ 278,294,642	$ 276,122,787

The Company's temporary receipts from customer are payments made by customers to the Company to retain the Company's capacity. When the terms and conditions set forth in the agreements are subsequently satisfied, the treatment of temporary receipts, either by refund or by accounts receivable offsetting, will be determined by mutual consent.

d. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms. As of December 31, 2023 and 2022, the aforementioned refund liabilities amounted to NT$37,847,605 thousand and NT$53,078,351 thousand (classified under accrued expenses and other current liabilities), respectively.

22. INTEREST INCOME

	Years Ended December 31	
	2023	2022
Interest income		
Cash and cash equivalents	$ 49,740,006	$ 17,831,257
Financial assets at amortized cost	6,363,684	2,008,611
Financial assets at FVTOCI	4,190,211	2,582,341
	$ 60,293,901	$ 22,422,209

23. FINANCE COSTS

	Years Ended December 31	
	2023	2022
Interest expense		
Corporate bonds	$ 17,848,916	$ 14,116,112
Lease liabilities	382,041	267,050
Bank loans	95,366	32,017
Others	2,755	1,673
Less: Capitalized interest under property, plant and equipment	(6,329,718)	(2,666,868)
	$ 11,999,360	$ 11,749,984

Information about capitalized interest is as follows:

	Years Ended December 31	
	2023	2022
Capitalization rate	1.08%-3.36%	0.56%-3.36%

24. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2023	2022
Loss on disposal of financial assets, net		
Investments in debt instruments at FVTOCI	$ (473,897)	$ (410,076)
Gain on disposal of investments accounted for using equity method, net	15,758	-
Gain (loss) on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	6,523,084	(622,537)
The accrual of expected credit loss of financial assets		
Investments in debt instruments at FVTOCI	(9,525)	(909)
Financial assets at amortized cost	(26,220)	(51,442)
Other gains, net	932,379	72,766
	$ 6,961,579	$ (1,012,198)

25. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2023	2022
Current income tax expense		
Current tax expense recognized in the current year	$ 136,931,127	$ 147,685,403
Income tax adjustments on prior years	92,331	(563,555)
Other income tax adjustments	244,358	206,136
	137,267,816	147,327,984
Deferred income tax expense (benefit)		
The origination and reversal of temporary differences	3,210,032	(24,714,488)
Investment tax credits	925,959	4,676,707
	4,135,991	(20,037,781)
Income tax expense recognized in profit or loss	$ 141,403,807	$ 127,290,203

A reconciliation of income before income tax and income tax expense recognized in profit or loss was as follows:

	Years Ended December 31	
	2023	2022
Income before tax	$ 979,171,324	$1,144,190,718
Income tax expense at the statutory rate	$ 197,906,699	$ 231,799,774
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	(7,613,159)	12,286,136
Tax-exempt income	-	(157,955,934)
Additional income tax under the Alternative Minimum Tax Act	-	61,578,020
Additional income tax on unappropriated earnings	9,468,943	-
The origination and reversal of temporary differences	3,210,032	(24,714,488)
Income tax credits	(61,905,397)	4,654,114
	141,067,118	127,647,622
Income tax adjustments on prior years	92,331	(563,555)
Other income tax adjustments	244,358	206,136
Income tax expense recognized in profit or loss	$ 141,403,807	$ 127,290,203

For the years ended December 31, 2023 and 2022, the Company applied a tax rate of 20% for entities subject to the R.O.C. Income Tax Law; for other jurisdictions, taxes are calculated using the applicable tax rate for each individual jurisdiction.

b. Deferred income tax balance

The analysis of deferred income tax assets and liabilities was as follows:

	December 31, 2023	December 31, 2022
Deferred income tax assets		
Temporary differences		
Depreciation	$ 41,094,712	$ 45,299,310
Refund liability	9,414,971	12,089,451
Unrealized exchange losses	7,100,019	5,782,345
Unrealized loss on inventories	2,771,188	2,305,328
Net defined benefit liability	1,729,672	1,722,005
Deferred compensation cost	489,609	361,241
Investment tax credits	19,079	945,038
Others	1,556,537	681,124
	$ 64,175,787	$ 69,185,842
Deferred income tax liabilities		
Temporary differences		
Others	$ (53,856)	$ (1,031,383)

	Year Ended December 31, 2023				
		Recognized in			
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	Balance, End of Year
Deferred income tax assets					
Temporary differences					
Depreciation	$ 45,299,310	$ (4,197,221)	$ -	$ (7,377)	$ 41,094,712
Refund liability	12,089,451	(2,673,474)	-	(1,006)	9,414,971
Unrealized exchange losses	5,782,345	1,317,674	-	-	7,100,019
Unrealized loss on inventories	2,305,328	466,186	-	(326)	2,771,188
Net defined benefit liability	1,722,005	(117,004)	124,671	-	1,729,672
Deferred compensation cost	361,241	129,852	-	(1,484)	489,609
Investment tax credits	945,038	(925,959)	-	-	19,079
Others	681,124	887,134	(25)	(11,696)	1,556,537
	$ 69,185,842	$ (5,112,812)	$ 124,646	$ (21,889)	$ 64,175,787
Deferred income tax liabilities					
Temporary differences					
Others	$ (1,031,383)	$ 976,821	$ -	$ 706	$ (53,856)

	Year Ended December 31, 2022				
		Recognized in			
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	Balance, End of Year
Deferred income tax assets					
Temporary differences					
Depreciation	$ 34,720,661	$ 10,552,264	$ -	$ 26,385	$ 45,299,310
Refund liability	5,986,173	6,100,849	-	2,429	12,089,451
Unrealized exchange losses	-	5,782,345	-	-	5,782,345
Unrealized loss on inventories	898,998	1,402,241	-	4,089	2,305,328
Net defined benefit liability	1,237,086	(249,116)	734,035	-	1,722,005
Investment tax credits	5,621,745	(4,676,707)	-	-	945,038
Deferred compensation cost	373,983	(48,180)	-	35,438	361,241
Others	315,240	334,801	(79)	31,162	681,124
	$ 49,153,886	$ 19,198,497	$ 733,956	$ 99,503	$ 69,185,842
Deferred income tax liabilities					
Temporary differences					
Unrealized exchange gains	$ (706,311)	$ 706,311	$ -	$ -	$ -
Others	(1,167,566)	132,973	6,036	(2,826)	(1,031,383)
	$ (1,873,877)	$ 839,284	$ 6,036	$ (2,826)	$ (1,031,383)

c. The deductible temporary differences for which no deferred income tax assets have been recognized

As of December 31, 2023 and 2022, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT$52,686,244 thousand and NT$26,790,935 thousand, respectively.

d. Unused tax-exemption information

As of December 31, 2022, the profits generated from the following project of TSMC are exempt from income tax for a five-year period:

	Tax-exemption Period
Construction and expansion of 2009 by TSMC	2018 to 2022

e. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2023 and 2022, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT$254,182,901 thousand and NT$222,682,649 thousand, respectively.

f. Income tax examination

The tax authorities have examined income tax returns of TSMC through 2021. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

26. EARNINGS PER SHARE

	Years Ended December 31	
	2023	2022
Basic EPS	$ 32.34	$ 39.20
Diluted EPS	$ 32.34	$ 39.20

EPS is computed as follows:

	Years Ended December 31	
	2023	2022
Basic EPS		
Net income available to common shareholders of the parent	$ 838,497,664	$1,016,530,249
Weighted average number of common shares outstanding used in the computation of basic EPS (in thousands)	25,929,223	25,929,190
Basic EPS (in dollars)	$ 32.34	$ 39.20
Diluted EPS		
Net income available to common shareholders of the parent	$ 838,497,664	$1,016,530,249
Weighted average number of common shares outstanding used in the computation of basic EPS (in thousands)	25,929,223	25,929,190
Effects of all dilutive potential common shares (in thousands)	44	193
Weighted average number of common shares used in the computation of diluted EPS (in thousands)	25,929,267	25,929,383
Diluted EPS (in dollars)	$ 32.34	$ 39.20

27. SHARE-BASED PAYMENT ARRANGEMENTS

a. Equity-settled share-based payment- RSAs

The RSAs in each year are as follows:

	2023 RSAs	2022 RSAs	2021 RSAs
Resolution Date of TSMC’s shareholders in its meeting	June 6, 2023	June 8, 2022	July 26, 2021
Resolution Date of TSMC’s Board of Directors in its meeting	February 6, 2024	February 14, 2023	February 15, 2022
Issuance of stocks (in thousands)	2,960	2,110	1,387
Eligible employees	Executive officers	Executive officers	Executive officers
Grant date/Issuance date	March 1, 2024	March 1, 2023	March 1, 2022

Vesting conditions of the aforementioned arrangement are as follow:

1) The RSAs granted to eligible employees can only be vested if

- the employee remains employed by the Company on the last date of each vesting period;
- during the vesting period, the employee may not breach any agreement with the Company or violate the Company's work rules; and
- certain employee performance metrics and TSMC's business performance metrics are met.

2) The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of TSMC's business performance metrics.

3) For eligible executive officers of TSMC: The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on TSMC's relative Total Shareholder Return ("TSR", including capital gains and dividends) achievement to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation and People Development Committee evaluation of TSMC's Environmental, Social, and Governance ("ESG") achievements. The number of shares so calculated should be rounded down to the nearest integral.

TSMC's TSR relative to the TSR of S&P 500 IT Index	Ratio of Shares to be Vested
Above the Index by X percentage points	50% + X * 2.5%, with the maximum of 100%
Equal to the Index	50%
Below the Index by X percentage points	50% - X * 2.5%, with the minimum of 0%

4) Restrictions imposed on the employees' rights in the RSAs before the vesting conditions are fulfilled:

- During each vesting period, no employee granted RSAs, except for inheritance, may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs.
- Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and etc. shall be exercised by the engaged trustee/custodian on the employee's behalf. Any other shareholder rights including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of TSMC.

5) Details of granted RSAs in each year are as follows:

	2022 RSAs Number of Shares (In Thousands)	2021 RSAs Number of Shares (In Thousands)
Balance, beginning of year	-	1,387
Issuance of stocks	2,110	-
Vested shares	-	(274)
Canceled shares	-	(419)
Balance, end of year	2,110	694
Weighted-average fair value of RSAs (in dollars)	$ 277.71	$ 325.81

The RSAs in each year are measured at fair value at grant date by using the binominal tree approach. Relevant information is as follows:

	2022 RSAs	2021 RSAs
	March 1, 2023	**March 1, 2022**
Stock price at measurement date (in dollars)	$ 511	$ 604
Expected price volatility	29.34%-32.11%	25.34%-28.28%
Expected life	1-3 years	1-3 years
Risk-free interest rate	1.06%	0.57%

Refer to Note 28 for the compensation costs of the RSAs recognized by TSMC.

On February 6, 2024, TSMC's Board of Directors approved the issuance of RSAs for year 2024 of no more than 4,185 thousand common shares. The grants will be made free of charge. The actual number of shares to be issued will be resolved by the Board of Directors after the RSAs is approved at the shareholders' meeting and by the competent authority.

b. Cash-settled share-based payment arrangements

The cash-settled share-based payment arrangements in each year are as follows:

	2023 Plan	2022 Plan	2021 Plan
Resolution Date of TSMC's Board of Directors in its meeting	February 6, 2024	February 14, 2023	February 15, 2022
Issuance of units (in thousands) (Note)	550	400	236
Grant date	March 1, 2024	March 1, 2023	March 1, 2022

Note: One unit of the right represents a right to the market value of one TSMC's common share when vested.

The vesting conditions and the ratio of units to be vested for key management personnel of the plan are the same as the aforementioned RSAs.

The fair value of compensation costs for the cash-settled share-based payment was measured by using binominal tree approach and will be measured at each reporting period until settlement. Relevant information is as follows:

	Years Ended December 31		
	2023		**2022**
	2022 Plan	**2021 Plan**	**2021 Plan**
Stock price at measurement date (in dollars)	$ 593	$ 593	$ 451
Expected price volatility	24.76%-29.05%	24.76%-29.05%	28.80%-32.19%
Residual life	1-3 years	1-2 years	1-3 years
Risk-free interest rate	1.15%	1.14%	1.09%

Refer to Note 28 for the compensation costs of the cash-settled share-based payment recognized by TSMC. As of December 31, 2023 and 2022, the liabilities under cash-settled share-based payment arrangement amounted to NT$62,695 thousand and NT$30,757 thousand, respectively.

28. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2023	2022
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	$ 492,827,379	$ 399,638,755
Recognized in operating expenses	30,097,805	28,850,463
Recognized in other operating income and expenses	7,487	8,961
	$ 522,932,671	$ 428,498,179
b. Amortization of intangible assets		
Recognized in cost of revenue	$ 6,538,107	$ 6,086,246
Recognized in operating expenses	2,720,143	2,669,848
	$ 9,258,250	$ 8,756,094
c. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	$ 5,365,458	$ 4,550,387
Defined benefit plans	281,392	208,641
	5,646,850	4,759,028
Share-based payments		
Equity-settled	483,050	302,348
Cash-settled	61,329	32,704
	544,379	335,052
Other employee benefits	233,517,335	234,367,880
	$ 239,708,564	$ 239,461,960
Employee benefits expense summarized by function		
Recognized in cost of revenue	$ 133,334,667	$ 139,361,369
Recognized in operating expenses	106,373,897	100,100,591
	$ 239,708,564	$ 239,461,960

According to TSMC's Articles of Incorporation, TSMC shall allocate compensation to directors and profit sharing bonus to employees of TSMC not more than 0.3% and not less than 1% of annual profits during the period, respectively.

TSMC accrued profit sharing bonus to employees based on a percentage of net income before income tax, profit sharing bonus to employees and compensation to directors during the period; compensation to directors was expensed based on estimated amount payable. If there is a change in the proposed amounts after the annual consolidated financial statements are authorized for issue, the differences are recorded as a change in accounting estimate. Accrued profit sharing bonus to employees is illustrated below:

	Years Ended December 31	
	2023	2022
Profit sharing bonus to employees	$ 50,090,533	$ 60,702,047

TSMC's profit sharing bonus to employees and compensation to directors for 2023, 2022 and 2021 had been approved by the Board of Directors of TSMC, as illustrated below:

	Years Ended December 31		
	2023	**2022**	**2021**
Resolution Date of TSMC's Board of Directors in its meeting	**February 6, 2024**	**February 14, 2023**	**February 15, 2022**
Profit sharing bonus to employees	$ 50,090,533	$ 60,702,047	$ 35,601,449
Compensation to directors	$ 551,955	$ 690,128	$ 487,537

There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2023, 2022 and 2021, respectively.

The information about the appropriations of TSMC's profit sharing bonus to employees and compensation to directors is available at the Market Observation Post System website.

29. GOVERNMENT GRANTS

Subsidiaries such as JASM and TSMC Nanjing received subsidies from the governments of Japan and China, respectively, for local plants setup and operation, which were mainly used to subsidize the purchase costs of property, plant and equipment as well as partial costs and expenses incurred from plant construction and production. For the years ended December 31, 2023 and 2022, TSMC received a total of NT$47,545,898 thousand and NT$7,051,432 thousand as government grants respectively.

30. CASH FLOW INFORMATION

a. Non-cash transactions

	Years Ended December 31	
	2023	**2022**
Additions of financial assets at FVTOCI	$ 62,779,060	$ 45,126,181
Discontinuation of significant influence from investment accounted for using the equity method	(10,728)	-
Conversion of convertible bonds into equity securities	(145,144)	-
Changes in accrued expenses and other current liabilities	128,814	9,440,544
Payments for acquisition of financial assets at FVTOCI	$ 62,752,002	$ 54,566,725
Disposal of financial assets at FVTOCI	$ 35,346,897	$ 43,130,926
Changes in other financial assets	351,678	1,832,441
Proceeds from disposal of financial assets at FVTOCI	$ 35,698,575	$ 44,963,367
Additions of property, plant and equipment	$ 897,557,179	$ 1,139,892,108
Changes in other financial assets	44,431	5,730,104
Exchange of assets	(78,034)	(275,564)
Changes in payables to contractors and equipment suppliers	40,750,228	(60,638,244)
Changes in accrued expenses and other current liabilities	17,832,841	630,594
Transferred to initial carrying amount of hedged items	39,898	-
Capitalized interests	(6,329,718)	(2,666,868)
Payments for acquisition of property, plant and equipment	$ 949,816,825	$ 1,082,672,130

b. Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2023	Financing Cash Flow	Non-cash Changes: Foreign Exchange Movement	Non-cash Changes: Leases Modifications	Non-cash Changes: Other Changes (Note)	Balance as of December 31, 2023
Hedging financial liabilities- bank loans	$ -	$ 27,908,580	$ (618,180)	$ -	$ -	$ 27,290,400
Bonds payable	852,436,439	67,511,319	587,758	-	362,037	920,897,553
Long-term bank loans	5,973,936	693,056	-	-	11,529	6,678,521
Lease liabilities	32,367,601	(3,228,219)	(31,765)	2,002,728	382,041	31,492,386
Total	$ 890,777,976	$ 92,884,736	$ (62,187)	$ 2,002,728	$ 755,607	$ 986,358,860

	Balance as of January 1, 2022	Financing Cash Flow	Non-cash Changes: Foreign Exchange Movement	Non-cash Changes: Leases Modifications	Non-cash Changes: Other Changes (Note)	Balance as of December 31, 2022
Short-term loans	$ 114,921,333	$(111,959,992)	$ (2,372,053)	$ -	$ (589,288)	$ -
Bonds payable	614,470,652	193,479,254	44,183,113	-	303,420	852,436,439
Long-term bank loans	3,475,798	2,503,333	-	-	(5,195)	5,973,936
Lease liabilities	22,940,665	(2,690,784)	137,196	11,713,474	267,050	32,367,601
Total	$ 755,808,448	$ 81,331,811	$ 41,948,256	$ 11,713,474	$ (24,013)	$ 890,777,976

Note: Other changes include amortization of bonds payable, amortization of long-term bank loan interest subsidy, financial cost of lease liabilities and discounts on short-term loans.

31. CAPITAL MANAGEMENT

The objective of the Company's capital management is to maintain a capital structure that ensures liquidity and supports a solid investment grade credit rating. The capital structure includes both debt and equity. The Company adjusts its capital structure mainly through changes in the level of debt and adjustments of dividend payout to shareholders.

The Company's capital management policy remained unchanged in 2023. TSMC's current credit ratings are AA- from Standard & Poor's and Aa3 from Moody's, same as those as of December 31, 2022.

32. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2023	December 31, 2022
Financial assets		
FVTPL (Note 1)	$ 14,342,093	$ 1,070,398
FVTOCI (Note 2)	167,150,802	136,483,349
Hedging financial assets	-	2,329
Amortized cost (Note 3)	1,842,412,631	1,727,306,556
	$2,023,905,526	$1,864,862,632
Financial liabilities		
FVTPL (Note 4)	$ 121,412	$ 116,215
Hedging financial liabilities	27,334,164	813
Amortized cost (Note 5)	1,741,356,555	1,669,270,659
	$1,768,812,131	$1,669,387,687

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable (net), equity and debt investments.

Note 3: Including cash and cash equivalents, financial assets at amortized cost, notes and accounts receivable (including related parties), other receivables, refundable deposits and temporary payments (including those classified under other current assets and other noncurrent assets).

Note 4: Held for trading.

Note 5: Including accounts payable (including related parties), payables to contractors and equipment suppliers, cash dividends payable, accrued expenses and other current liabilities, bonds payable, long-term bank loans, guarantee deposits and other noncurrent liabilities.

b. Financial risk management objectives

The Company manages its exposure to foreign currency risk, interest rate risk, equity price risk, credit risk and liquidity risk with the objective to reduce the potentially adverse effects the market uncertainties may have on its financial performance.

The plans for material treasury activities are reviewed by the Audit and Risk Committee and/or Board of Directors in accordance with procedures required by relevant regulations or internal controls. During the implementation of such plans, the Company must comply with certain treasury procedures that provide guiding principles for overall financial risk management and segregation of duties.

c. Market risk

The Company is exposed to the financial market risks, primarily changes in foreign currency exchange rates, interest rates and equity investment prices. A portion of these risks is hedged.

<u>Foreign currency risk</u>

Substantially all the Company's sales are denominated in U.S. dollars and over half of its capital expenditures and equity investments are denominated in currencies other than NT dollars, primarily in U.S. dollars, Japanese yen and Euros. As a result, any significant fluctuations to its disadvantage in the exchanges rate of NT dollar against such currencies, in particular a weakening of U.S. dollar against NT dollar, would have an adverse impact on the revenue and operating profit as expressed in NT dollars. The Company uses foreign currency derivative contracts and non-derivative financial instruments, such as currency forwards, currency swaps and bank loans denominated in foreign currency, to protect against currency exchange rate risks associated with non-NT dollar-denominated assets and liabilities, certain forecasted transactions, and net investments in foreign operations. These hedges reduce, but do not entirely eliminate, the effect of foreign currency exchange rate movements on the assets and liabilities.

Based on a sensitivity analysis performed on the Company's total monetary assets and liabilities for the years ended December 31, 2023 and 2022, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT$891,039 thousand and NT$1,704,553 thousand, respectively, after taking into account hedges and offsetting positions.

<u>Interest rate risk</u>

The Company is exposed to interest rate risks primarily in relation to its investment portfolio and outstanding debt. Changes in interest rates affect the interest earned on the Company's cash and cash equivalents and fixed income securities, the fair value of those securities, as well as the interest paid on its debt.

The majority of the Company's fixed income investments are fixed-rate securities, which are classified as financial assets at FVTOCI and amortized cost. Those classified as FVTOCI may have their fair value adversely affected due to an increase in interest rates, but for those classified as amortized cost, their carrying amount will not be affected by changes in interest rates. At the same time, if interest rates fall, cash and cash equivalents may generate less interest income than expected. The Company has entered and may in the future enter into interest rate derivatives to partially hedge the interest rate risk on its fixed income investments and anticipated debt issuance. However, these hedges can offset only a limited portion of the financial impact from movements in interest rates.

Based on a sensitivity analysis performed on the Company's fixed income investments at the end of the reporting period, interest rates increase of 100 basis points (1.00%) across all maturities would have decreased the Company's other comprehensive income by NT$3,841,994 thousand and NT$3,831,326 thousand for the years ended December 31, 2023 and 2022, respectively.

The majority of the Company's debt is fixed-rate and measured at amortized cost and as such, changes in interest rates would not affect future cash flows or the carrying amount.

Other price risk

The Company is exposed to mutual funds and equity price risk arising from financial assets at FVTPL and FVTOCI.

Assuming a hypothetical decrease of 10% in prices of the mutual funds and equity investments at the end of the reporting period, the net income would have decreased by NT$1,073,397 thousand for the year ended December 31, 2023, and the other comprehensive income would have decreased by NT$954,925 thousand and NT$631,530 thousand for the years ended December 31, 2023 and 2022, respectively.

d. Credit risk management

Credit risk refers to the risk that a counterparty may default on its contractual obligations resulting in financial losses to the Company. The Company is exposed to credit risks from operating activities, primarily accounts receivable, and from investing activities, primarily deposits, fixed-income investments and other financial instruments with banks. Credit risk is managed separately for business related and financial related exposures. As of the end of the reporting period, the Company's maximum credit risk exposure is equal to the carrying amount of financial assets.

Business related credit risk

The Company's accounts receivable are from its customers worldwide. The majority of the Company's outstanding accounts receivable are not covered by collaterals or guarantees. While the Company has procedures to monitor and manage credit risk exposure on accounts receivable, there is no assurance such procedures will effectively eliminate losses resulting from its credit risk. This risk is heightened during periods when economic conditions worsen.

As of December 31, 2023 and 2022, the Company's ten largest customers accounted for 91% and 82% of accounts receivable, respectively. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

The Company mitigates its financial credit risk by selecting counterparties with investment grade credit ratings and by limiting the exposure to any individual counterparty. The Company regularly monitors and reviews the limit applied to counterparties and adjusts the limit according to market conditions and the credit standing of the counterparties.

The objective of the Company's investment policy is to achieve a return that will allow the Company to preserve principal and support liquidity requirements. The policy generally requires securities to be investment grade and limits the amount of credit exposure to any one issuer. The Company assesses whether there has been a significant increase in credit risk in the invested securities since initial recognition by reviewing changes in external credit ratings, financial market conditions and material information of the issuers.

The Company assesses the 12-month expected credit loss and lifetime expected credit loss based on the probability of default and loss given default provided by external credit rating agencies. The current credit risk assessment policies are as follows:

Category	Description	Basis for Recognizing Expected Credit Loss	Expected Credit Loss Ratio
Performing	Credit rating is investment grade on valuation date	12 months expected credit loss	0-0.1%
Doubtful	Credit rating is non-investment grade on valuation date	Lifetime expected credit loss-not credit impaired	-
In default	Credit rating is CC or below on valuation date	Lifetime expected credit loss-credit impaired	-
Write-off	There is evidence indicating that the debtor is in severe financial difficulty and the Company has no realistic prospect of recovery	Amount is written off	-

For the years ended December 31, 2023 and 2022, the expected credit loss increased NT$35,751 thousand and NT$57,936 thousand, respectively. The changes were mainly due to increased investment amount and adjusted investment portfolio.

e. Liquidity risk management

The objective of liquidity risk management is to ensure the Company has sufficient liquidity to fund its business operations over the next 12 months. The Company manages its liquidity risk by maintaining adequate cash and cash equivalents, financial assets at FVTOCI-current, financial assets at amortized cost-current and sufficient cost-efficient funding.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments, including principal and interest.

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
December 31, 2023					
Non-derivative financial liabilities					
Hedging financial liabilities-bank loans	$ 27,290,400	$ -	$ -	$ -	$ 27,290,400
Accounts payable (including related parties)	57,293,057	-	-	-	57,293,057
Payables to contractors and equipment suppliers	171,484,616	-	-	-	171,484,616
Accrued expenses and other current liabilities	241,118,948	-	-	-	241,118,948
Bonds payable	24,890,500	224,062,937	303,525,276	583,364,167	1,135,842,880
Long-term bank loans	2,371,296	3,889,029	585,094	-	6,845,419
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	3,181,651	5,248,337	4,662,868	21,754,375	34,847,231
Others	-	165,188,432	6,303,135	2,908,666	174,400,233
	527,630,468	398,388,735	315,076,373	608,027,208	1,849,122,784

(Continued)

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
Derivative financial instruments					
Forward exchange contracts					
Outflows	$ 64,826,427	$ -	$ -	$ -	$ 64,826,427
Inflows	(65,384,000)	-	-	-	(65,384,000)
	(557,573)	-	-	-	(557,573)
	$ 527,072,895	$ 398,388,735	$ 315,076,373	$ 608,027,208	$1,848,565,211
December 31, 2022					
Non-derivative financial liabilities					
Accounts payable (including related parties)	$ 56,522,345	$ -	$ -	$ -	$ 56,522,345
Payables to contractors and equipment suppliers	213,499,613	-	-	-	213,499,613
Accrued expenses and other current liabilities	219,587,908	-	-	-	219,587,908
Bonds payable	34,668,909	94,869,159	320,211,460	625,049,539	1,074,799,067
Long-term bank loans	1,278,130	3,533,152	1,360,549	-	6,171,831
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	2,999,840	5,367,809	4,754,007	22,589,117	35,710,773
Others	-	166,266,718	10,518,481	783,182	177,568,381
	528,556,745	270,036,838	336,844,497	648,421,838	1,783,859,918
Derivative financial instruments					
Forward exchange contracts					
Outflows	103,617,399	-	-	-	103,617,399
Inflows	(104,600,085)	-	-	-	(104,600,085)
	(982,686)	-	-	-	(982,686)
	$ 527,574,059	$ 270,036,838	$ 336,844,497	$ 648,421,838	$1,782,877,232

(Concluded)

Note: Information about the maturity analysis for lease liabilities more than 5 years:

	5-10 Years	10-15 Years	15-20 Years	More Than 20 Years	Total
December 31, 2023					
Lease liabilities	$ 10,197,521	$ 7,121,539	$ 4,117,107	$ 318,208	$ 21,754,375
December 31, 2022					
Lease liabilities	$ 10,241,734	$ 7,329,012	$ 4,233,886	$ 784,485	$ 22,589,117

f. Fair value of financial instruments

1) Fair value measurements recognized in the consolidated balance sheets

Fair value measurements are grouped into Levels 1 to 3 based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;

- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and

- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The timing of transfers between levels within the fair value hierarchy is at the end of reporting period.

2) Fair value of financial instruments that are measured at fair value on a recurring basis

Fair value hierarchy

The following table presents the Company's financial assets and liabilities measured at fair value on a recurring basis:

	December 31, 2023			
	Level 1	**Level 2**	**Level 3**	**Total**
Financial assets at FVTPL				
Mandatorily measured at FVTPL				
Convertible preferred stocks	$ -	$ -	$ 13,307,160	$ 13,307,160
Forward exchange contracts	-	701,182	-	701,182
Convertible bonds	-	-	223,454	223,454
Mutual funds	-	-	110,297	110,297
	$ -	$ 701,182	$ 13,640,911	$ 14,342,093
Financial assets at FVTOCI				
Investments in debt instruments				
Corporate bonds	$ -	$ 79,605,567	$ -	$ 79,605,567
Agency mortgage-backed securities	-	37,959,691	-	37,959,691
Government bonds/Agency bonds	22,091,087	247,814	-	22,338,901
Asset-backed securities	-	9,898,766	-	9,898,766
Investments in equity instruments				
Non-publicly traded equity investments	-	-	7,208,655	7,208,655
Publicly traded stocks	4,727,905	-	-	4,727,905
Notes and accounts receivable, net	-	5,411,317	-	5,411,317
	$ 26,818,992	$ 133,123,155	$ 7,208,655	$ 167,150,802
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$ -	$ 121,412	$ -	$ 121,412
Hedging financial liabilities				
Fair value hedges				
Interest rate futures contracts	$ 43,764	$ -	$ -	$ 43,764

	December 31, 2022			
	Level 1	Level 2	Level 3	Total
Financial assets at FVTPL				
Mandatorily measured at FVTPL				
Forward exchange contracts	$ -	$ 947,546	$ -	$ 947,546
Convertible bonds	-	-	122,852	122,852
	$ -	$ 947,546	$ 122,852	$ 1,070,398
Financial assets at FVTOCI				
Investments in debt instruments				
Corporate bonds	$ -	$ 66,116,166	$ -	$ 66,116,166
Agency mortgage-backed securities	-	28,367,926	-	28,367,926
Government bonds/Agency bonds	18,845,577	116,311	-	18,961,888
Asset-backed securities	-	9,274,697	-	9,274,697
Investments in equity instruments				
Non-publicly traded equity investments	-	-	6,159,200	6,159,200
Publicly traded stocks	277,866	-	-	277,866
Notes and accounts receivable, net	-	7,325,606	-	7,325,606
	$ 19,123,443	$ 111,200,706	$ 6,159,200	$ 136,483,349
Hedging financial assets				
Fair value hedges				
Interest rate futures contracts	$ 2,329	$ -	$ -	$ 2,329
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$ -	$ 116,215	$ -	$ 116,215
Hedging financial liabilities				
Fair value hedges				
Interest rate futures contracts	$ 813	$ -	$ -	$ 813

Reconciliation of Level 3 fair value measurements of financial assets

The financial assets measured at Level 3 fair value were equity investments classified as financial assets at FVTOCI and financial assets at FVTPL. Reconciliations for the years ended December 31, 2023 and 2022 are as follows:

	Years Ended December 31	
	2023	2022
Balance, beginning of year	$ 6,282,052	$ 5,887,892
Additions	14,887,187	715,612
Recognized in profit or loss	12,355	-
Recognized in other comprehensive income or loss	262,380	(373,263)
Disposals and proceeds from return of capital of investments	(127,963)	(359,506)
Transfers out of level 3 (Note)	-	(139,770)
Effect of exchange rate changes	(466,445)	551,087
Balance, end of year	$ 20,849,566	$ 6,282,052

Note: The transfer from level 3 to level 1 is because quoted prices (unadjusted) in active markets data became available for the equity investments.

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of financial assets and financial liabilities are determined as follows:

- The fair values of corporate bonds, agency bonds, agency mortgage-backed securities, asset-backed securities and government bonds are determined by quoted market prices provided by third party pricing services.

- The fair values of forward contracts are measured using forward rates and discount rates derived from quoted market prices.

- The fair value of accounts receivable classified as at FVTOCI is determined by the present value of future cash flows based on the discount rate that reflects the credit risk of counterparties.

Valuation techniques and assumptions used in Level 3 fair value measurement

The fair values of mutual funds and non-publicly traded equity investments (excluding those trading on the Emerging Stock Board) are mainly determined by using the asset approach and market approach.

The asset approach takes into account the net asset value measured at the fair value by independent parties. On December 31, 2023 and 2022, the Company uses unobservable inputs derived from discount for lack of marketability of 10%. When other inputs remain equal, the fair value will decrease by NT$52,704 thousand and NT48,704 thousand, respectively, if discounts for lack of marketability increase by 1%.

For the remaining few investments, the market approach is used to arrive at their fair values, for which the recent financing activities of investees, the market transaction prices of the similar companies and market conditions are considered.

In addition, the fair values of convertible preferred stocks and convertible bonds are prior transaction prices.

3) Fair value of financial instruments that are not measured at fair value

Except as detailed in the following table, the Company considers that the carrying amounts of financial instruments in the consolidated financial statements that are not measured at fair value approximate their fair values.

Fair value hierarchy

The table below sets out the fair value hierarchy for the Company's financial assets and liabilities which are not required to be measured at fair value:

	December 31, 2023			
	Carrying Amount	Fair Value Level 1	Fair Value Level 2	Fair Value Total
Financial assets				
Financial assets at amortized costs				
Corporate bonds	$ 113,785,324	$ -	$ 113,694,397	$ 113,694,397
Commercial paper	18,371,705	-	18,385,329	18,385,329
Government bonds/Agency bonds	13,803,559	2,751,893	11,053,234	13,805,127
	$ 145,960,588	$ 2,751,893	$ 143,132,960	$ 145,884,853

(Continued)

	December 31, 2023			
	Carrying Amount	Fair Value		
		Level 1	Level 2	Total
Financial liabilities				
Financial liabilities at amortized costs				
Bonds payable	$ 920,897,553	$ -	$ 849,236,882	$ 849,236,882

(Concluded)

	December 31, 2022			
	Carrying Amount	Fair Value		
		Level 1	Level 2	Total
Financial assets				
Financial assets at amortized costs				
Corporate bonds	$ 80,994,958	$ -	$ 80,236,142	$ 80,236,142
Commercial paper	48,732,476	-	48,882,028	48,882,028
	$ 129,727,434	$ -	$ 129,118,170	$ 129,118,170
Financial liabilities				
Financial liabilities at amortized costs				
Bonds payable	$ 852,436,439	$ -	$ 765,301,535	$ 765,301,535

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of corporate bonds, the Company's bonds payable and agency bonds are determined by quoted market prices provided by third party pricing services.

The fair value of commercial paper is determined by the present value of future cash flows based on the discounted curves that are derived from the quoted market prices.

33. RELATED PARTY TRANSACTIONS

Intercompany balances and transactions between TSMC and its subsidiaries, which are related parties of TSMC, have been eliminated upon consolidation; therefore, those items are not disclosed in this note. The following is a summary of significant transactions between the Company and other related parties:

a. Related party name and categories

Related Party Name	Related Party Categories
GUC	Associates
VIS	Associates
SSMC	Associates
Xintec	Associates

b. Net revenue

Item	Related Party Categories	Years Ended December 31 2023	Years Ended December 31 2022
Net revenue from sale of goods	Associates	$ 13,406,049	$ 15,351,465

c. Purchases

Related Party Categories	Years Ended December 31 2023	Years Ended December 31 2022
Associates	$ 4,562,206	$ 6,423,913

d. Receivables from related parties

Item	Related Party Name	December 31, 2023	December 31, 2022
Receivables from related parties	GUC	$ 514,819	$ 1,471,351
	Xintec	109,632	112,607
		$ 624,451	$ 1,583,958
Other receivables from related parties	SSMC	$ 58,093	$ 68,277
	VIS	13,778	669
	Others	-	29
		$ 71,871	$ 68,975

e. Payables to related parties

Item	Related Party Name	December 31, 2023	December 31, 2022
Payables to related parties	Xintec	$ 1,020,226	$ 1,047,452
	SSMC	457,348	385,979
	VIS	66,653	190,587
	Others	22,073	18,619
		$ 1,566,300	$ 1,642,637

f. Accrued expenses and other current liabilities

Item	Related Party Categories	December 31, 2023	December 31, 2022
Contract liabilities	Associates	$ 1,666,113	$ 1,075,659

g. Others

Item	Related Party Categories	Years Ended December 31 2023	2022
Manufacturing expenses	Associates	$ 5,043,545	$ 6,011,522

The sales prices and payment terms to related parties were not significantly different from those of sales to third parties. For other related party transactions, price and terms were determined in accordance with mutual agreements.

The Company leased factory and office from associates. The lease terms and prices were both determined in accordance with mutual agreements. The rental expenses were paid to associates monthly; the related expenses were both classified under manufacturing expenses.

h. Compensation of key management personnel

The compensation to directors and other key management personnel were as follows:

	Years Ended December 31 2023	2022
Short-term employee benefits	$ 3,492,258	$ 4,369,097
Post-employment benefits	3,870	3,013
Share-based payments	525,808	286,227
	$ 4,021,936	$ 4,658,337

The compensation to directors and other key management personnel were determined by the Compensation and People Development Committee of TSMC in accordance with the individual performance and market trends.

34. PLEDGED ASSETS

The Company provided certificate of deposits recorded in other financial assets as collateral mainly for building lease agreements. As of December 31, 2023 and 2022, the aforementioned other financial assets amounted to NT$124,302 thousand and NT$129,138 thousand, respectively.

35. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

Significant contingent liabilities and unrecognized commitments of the Company as of the end of the reporting period, excluding those disclosed in other notes, were as follows:

a. Under a technical cooperation agreement with Industrial Technology Research Institute, the R.O.C. Government or its designee approved by TSMC can use up to 35% of TSMC's capacity provided TSMC's outstanding commitments to its customers are not prejudiced. The term of this agreement is for five years beginning from January 1, 1987 and is automatically renewed for successive periods of five years unless otherwise terminated by either party with one year prior notice. As of the end of reporting period, the R.O.C. Government did not invoke such right.

b. Under a Shareholders Agreement entered into with Philips and EDB Investments Pte Ltd. on March 30, 1999, the parties formed a joint venture company, SSMC, which is an integrated circuit foundry in Singapore. TSMC's equity interest in SSMC was 32%. Nevertheless, in September 2006, Philips spun-off its semiconductor subsidiary which was renamed as NXP B.V. Further, TSMC and NXP B.V. purchased all the SSMC shares owned by EDB Investments Pte Ltd. pro rata according to the Shareholders Agreement on November 15, 2006. After the purchase, TSMC and NXP B.V. currently own approximately 39% and 61% of the SSMC shares, respectively. TSMC and NXP B.V. are required, in the aggregate, to purchase at least 70% of SSMC's capacity, but TSMC alone is not required to purchase more than 28% of the capacity. If any party defaults on the commitment and the capacity utilization of SSMC falls below a specific percentage of its capacity, the defaulting party is required to compensate SSMC for all related unavoidable costs. There was no default from the aforementioned commitment as of the end of reporting period.

c. In September 2022, Daedalus Prime LLC ("Daedalus") filed complaints in the U.S. International Trade Commission ("ITC") and the U.S. District Court for the Eastern District of Texas alleging that TSMC, TSMC North America, and other companies infringe four U.S. patents. The ITC instituted an investigation in October 2022. In June 2023, Daedalus dropped two of the asserted patents in the ITC. Also in June 2023, Daedalus filed another complaint in the Eastern District of Texas alleging that TSMC infringes five U.S. patents. In September 2023, the ITC granted the parties' joint motion to suspend the procedural schedule while the parties finalize the settlement agreement and then request termination of the ITC Investigation and related litigations. In October 2023, the parties jointly requested the ITC to terminate the investigation and Eastern District of Texas to dismiss the related litigations. In November 2023, the ITC investigation was terminated and the related litigations in the Eastern District of Texas were dismissed.

d. TSMC entered into long-term purchase agreements of materials and supplies and agreements of waste disposal with multiple suppliers. The relative minimum fulfillment quantity and price are specified in the agreements.

e. TSMC entered into a long-term purchase agreement of equipment. The relative fulfillment quantity and price are specified in the agreement.

f. TSMC entered into long-term energy purchase agreements with multiple suppliers. The relative fulfillment period, quantity and price are specified in the agreements.

g. Amounts available under unused letters of credit as of December 31, 2023 and 2022 were NT$433,994 thousand and NT$383,974 thousand, respectively.

h. The Company entrusted financial institutions to provide performance guarantees mainly for import and export of goods, lease agreement and energy purchase agreement. As of December 31, 2023 and 2022, the aforementioned guarantee amounted to NT$8,012,973 thousand and NT$7,623,262 thousand, respectively.

36. EXCHANGE RATE INFORMATION OF FOREIGN-CURRENCY FINANCIAL ASSETS AND LIABILITIES

The following information was summarized according to the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
December 31, 2023			
Financial assets			
Monetary items			
USD	$ 14,756,970	30.747	$ 453,732,565
EUR	432,124	34.175	14,767,835
EUR	484,580	1.111(Note 2)	16,560,515
JPY	13,320,705	0.2192	2,919,899
Financial liabilities			
Monetary items			
USD	14,121,653	30.747	434,198,454
EUR	803,472	34.175	27,458,643
EUR	482,869	1.111(Note 2)	16,502,044
JPY	199,911,305	0.2192	43,820,558
December 31, 2022			
Financial assets			
Monetary items			
USD	15,214,896	30.713	467,295,097
EUR	8,375	32.838	275,006
EUR	29,161	7.432(Note 3)	957,587
JPY	133,034,271	0.2331	31,010,288
Financial liabilities			
Monetary items			
USD	15,190,659	30.713	466,550,704
EUR	2,375,378	32.838	78,002,647
JPY	134,608,488	0.2331	31,377,239

Note 1: Except as otherwise noted, exchange rate represents the number of NT dollar for which one foreign currency could be exchanged.

Note 2: The exchange rate represents the number of U.S. dollar for which one Euro could be exchanged.

Note 3: The exchange rate represents the number of RMB for which one Euro could be exchanged.

Please refer to the consolidated statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss for the years ended December 31, 2023 and 2022, respectively. Since there were varieties of foreign currency transactions and functional currencies within the subsidiaries of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

37. ADDITIONAL DISCLOSURES

Following are the additional disclosures required by the Securities and Futures Bureau for TSMC:

a. Financings provided: See Table 1 attached;

b. Endorsement/guarantee provided: See Table 2 attached;

c. Marketable securities held (excluding investments in subsidiaries and associates): See Table 3 attached;

d. Marketable securities acquired and disposed of at costs or prices of at least NT$300 million or 20% of the paid-in capital: See Table 4 attached;

e. Acquisition of individual real estate properties at costs of at least NT$300 million or 20% of the paid-in capital: See Table 5 attached;

f. Disposal of individual real estate properties at prices of at least NT$300 million or 20% of the paid-in capital: None;

g. Total purchases from or sales to related parties of at least NT$100 million or 20% of the paid-in capital: See Table 6 attached;

h. Receivables from related parties amounting to at least NT$100 million or 20% of the paid-in capital: See Table 7 attached;

i. Information about the derivative financial instruments transaction: See Notes 7 and 10;

j. Others: The business relationship between the parent and the subsidiaries and significant transactions between them: See Table 8 attached;

k. Names, locations, and related information of investees over which TSMC exercises significant influence (excluding information on investment in mainland China): See Table 9 attached;

l. Information on investment in mainland China

   1) The name of the investee in mainland China, the main businesses and products, its issued capital, method of investment, information on inflow or outflow of capital, percentage of ownership, income (losses) of the investee, share of profits/losses of investee, ending balance, amount received as dividends from the investee, and the limitation on investee: See Table 10 attached.

   2) Significant direct or indirect transactions with the investee, its prices and terms of payment, unrealized gain or loss, and other related information which is helpful to understand the impact of investment in mainland China on financial reports: See Table 8 attached.

m. Information of major shareholders

   List of all shareholders with ownership of 5 percent or greater showing the names and the number of shares and percentage of ownership held by each shareholder: See Table 11 attached.

38. OPERATING SEGMENTS INFORMATION

a. Operating segments, segment revenue and operating results

TSMC's chief operating decision makers periodically review operating results, focusing on operating income generated by foundry segment. Operating results are used for resource allocation and/or performance assessment. As a result, the Company has only one operating segment, the foundry segment. The foundry segment engages mainly in the manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

The basis for the measurement of income from operations is the same as that for the preparation of financial statements. Please refer to the consolidated statements of comprehensive income for the related segment revenue and operating results.

b. Geographic and major customers' information were as follows:

1) Geographic information

Noncurrent Assets	December 31, 2023	December 31, 2022
Taiwan	$2,525,608,435	$2,510,238,722
United States	420,093,092	153,137,833
China	97,268,882	90,349,673
Japan	94,558,890	15,432,491
Europe, the Middle East and Africa	146,247	140,709
Others	435	1,922
	$3,137,675,981	$2,769,301,350

Noncurrent assets include property, plant and equipment, right-of-use assets, intangible assets and other noncurrent assets.

2) Major customers representing at least 10% of net revenue

	Years Ended December 31			
	2023		2022	
	Amount	%	Amount	%
Customer A	$ 546,550,925	25	$ 529,649,200	23
Customer B	241,152,357	11	NA (Note)	NA

Note: Revenue less than 10% of the Company's net revenue.

TABLE 1

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

FINANCINGS PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Financing Company	Counterparty	Financial Statement Account	Related Party	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Interest Rate	Nature for Financing	Transaction Amounts	Reason for Financing	Allowance for Bad Debt	Collateral		Financing Limits for Each Borrowing Company (Notes 1 and 2)	Financing Company's Total Financing Amount Limits (Notes 1 and 2)
													Item	Value		
0	TSMC	TSMC Arizona	Other receivables from related parties	Yes	$ 92,241,000 (US$ 3,000,000)	$ 92,241,000 (US$ 3,000,000)	$ -	-	The need for short-term financing	$ -	Capacity installation and working capital	$ -	-	$ -	$ 345,891,363	$ 691,782,725
1	TSMC China	TSMC Nanjing	Other receivables from related parties	Yes	73,510,570 (RMB 8,800,000)& (US$ 1,150,000)	51,987,670 (RMB 8,800,000)& (US$ 450,000)	38,151,520 (RMB 8,800,000)	1.30%-1.50%	The need for short-term and long-term financing	-	Operating capital	-	-	-	95,757,396	95,757,396

Note 1: The amount available for lending to TSMC Arizona from TSMC shall not exceed ten percent (10%) of the net worth of TSMC, and the total amount available for lending from TSMC to borrowers shall not exceed twenty percent (20%) of the net worth of TSMC.

Note 2: The aggregate amount available for lending to TSMC Nanjing from TSMC China shall not exceed the net worth of TSMC China.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

TABLE 2

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

ENDORSEMENTS/GUARANTEES PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Endorsement/ Guarantee Provider	Guaranteed Party		Limits on Endorsement/ Guarantee Amount Provided to Each Guaranteed Party (Notes 1 and 2)	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (US$ in Thousands)	Amount of Endorsement/ Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Notes 1 and 2)	Guarantee Provided by Parent Company	Guarantee Provided by A Subsidiary	Guarantee Provided to Subsidiaries in Mainland China
		Name	Nature of Relationship										
0	TSMC	TSMC North America	Subsidiary	$ 1,383,565,451	$ 2,558,559 (US$ 83,213)	$ 2,558,559 (US$ 83,213)	$ 2,558,559 (US$ 83,213)	$ -	0.07%	$ 1,383,565,451	Yes	No	No
		TSMC Global	Subsidiary	1,383,565,451	230,602,500 (US$ 7,500,000)	230,602,500 (US$ 7,500,000)	230,602,500 (US$ 7,500,000)	-	6.67%	1,383,565,451	Yes	No	No
		TSMC Arizona	Subsidiary	1,383,565,451	369,960,818 (US$12,032,420)	369,960,818 (US$12,032,420)	246,972,818 (US$ 8,032,420)	-	10.70%	1,383,565,451	Yes	No	No
		TSMC Development	Subsidiary	1,383,565,451	13,307,302 (US$ 432,800)	-	-	-	-	1,383,565,451	Yes	No	No
1	TSMC Japan	TSMC JDC	The same parent company	326,007	289,344 (JPY 1,320,000)	289,344 (JPY 1,320,000)	289,344 (JPY 1,320,000)	-	0.01%	326,007	No	No	No

Note 1: The total amount of the endorsement/guarantee provided by TSMC to TSMC North America, TSMC Global, TSMC Arizona and TSMC Development shall not exceed forty percent (40%) of TSMC's net worth.

Note 2: The total amount of the endorsement/guarantee provided by TSMC Japan to TSMC JDC shall not exceed two hundred and fifty percent (250%) of TSMC Japan's net worth.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

TABLE 3

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES HELD
December 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC	Non-publicly traded equity investments							
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	Financial assets at fair value through other comprehensive income	10,500	$ 430,500	7	$ 430,500	
	United Industrial Gases Co., Ltd.	-	〃	21,230	421,211	10	421,211	
	Global Investment Holding Inc.	-	〃	10,442	109,239	6	109,239	
	Crimson Asia Capital	-	〃	-	-	1	-	
	Commercial paper							
	Cathay Financial Holding Co., Ltd.	-	Financial assets at amortized cost	697	6,924,665	N/A	6,929,220	
	Nan Ya Plastics Corporation	-	〃	600	5,976,677	N/A	5,982,726	
	China Steel Corporation	-	〃	200	1,985,094	N/A	1,986,400	
	Formosa Plastics Corporation	-	〃	100	996,260	N/A	997,268	
	CPC Corporation, Taiwan	-	〃	100	995,553	N/A	995,420	
	Formosa Chemicals & Fibre Corporation	-	〃	100	994,540	N/A	995,374	
	Taiwan Power Company	-	〃	50	498,916	N/A	498,921	
TSMC Partners	Fund							
	Matter Venture Partners Fund I, L.P.	-	Financial assets at fair value through Profit or Loss	-	US$ 3,587	7	US$ 3,587	
	Non-publicly traded equity investments							
	Shanghai Walden Venture Capital Enterprise	-	Financial assets at fair value through other comprehensive income	-	US$ 28,969	6	US$ 28,969	
	Walden Technology Ventures Investments II, L.P.	-	〃	-	US$ 18,187	9	US$ 18,187	
	Walden Technology Ventures Investments III, L.P.	-	〃	-	US$ 13,458	4	US$ 13,458	
	Tela Innovations	-	〃	6,942	-	22	-	
	Publicly traded stocks							
	ARM Holdings plc	-	Financial assets at fair value through other comprehensive income	1,961	US$ 147,353	-	US$ 147,353	
	Movella Holdings Inc.	-	〃	3,095	US$ 1,873	6	US$ 1,873	
TSMC Global	Corporate bond							
	Bank of America Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 86,588	N/A	US$ 86,588	
	Morgan Stanley	-	〃	-	US$ 76,777	N/A	US$ 76,777	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 58,554	N/A	US$ 58,554	
	Wells Fargo & Company	-	〃	-	US$ 58,351	N/A	US$ 58,351	
	JPMorgan Chase & Co.	-	〃	-	US$ 58,153	N/A	US$ 58,153	
	Citigroup Inc.	-	〃	-	US$ 50,436	N/A	US$ 50,436	
	Sumitomo Mitsui Financial Group, Inc.	-	〃	-	US$ 45,172	N/A	US$ 45,172	
	Mitsubishi UFJ Financial Group, Inc.	-	〃	-	US$ 36,903	N/A	US$ 36,903	
	Barclays PLC	-	〃	-	US$ 35,277	N/A	US$ 35,277	
	HSBC Holdings plc	-	〃	-	US$ 30,124	N/A	US$ 30,124	
	Banco Santander, S.A.	-	〃	-	US$ 29,015	N/A	US$ 29,015	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	AbbVie Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 26,895	N/A	US$ 26,895	
	Royal Bank of Canada	-	〃	-	US$ 25,469	N/A	US$ 25,469	
	CVS Health Corporation	-	〃	-	US$ 24,591	N/A	US$ 24,591	
	Lloyds Banking Group plc	-	〃	-	US$ 24,131	N/A	US$ 24,131	
	BPCE SA	-	〃	-	US$ 23,875	N/A	US$ 23,875	
	Oracle Corporation	-	〃	-	US$ 23,751	N/A	US$ 23,751	
	The Toronto-Dominion Bank	-	〃	-	US$ 22,568	N/A	US$ 22,568	
	Capital One Financial Corporation	-	〃	-	US$ 21,572	N/A	US$ 21,572	
	Credit Agricole SA London Branch	-	〃	-	US$ 20,395	N/A	US$ 20,395	
	BNP Paribas SA	-	〃	-	US$ 20,345	N/A	US$ 20,345	
	Athene Global Funding	-	〃	-	US$ 20,297	N/A	US$ 20,297	
	Fédération des caisses Desjardins du Québec	-	〃	-	US$ 19,320	N/A	US$ 19,320	
	Equitable Financial Life Global Funding	-	〃	-	US$ 18,910	N/A	US$ 18,910	
	National Securities Clearing Corporation	-	〃	-	US$ 18,429	N/A	US$ 18,429	
	AIG Global Funding	-	〃	-	US$ 18,428	N/A	US$ 18,428	
	Metropolitan Life Global Funding I	-	〃	-	US$ 18,299	N/A	US$ 18,299	
	ABN AMRO Bank N.V.	-	〃	-	US$ 18,247	N/A	US$ 18,247	
	Principal Life Global Funding II	-	〃	-	US$ 17,932	N/A	US$ 17,932	
	Nationwide Building Society	-	〃	-	US$ 17,760	N/A	US$ 17,760	
	Sumitomo Mitsui Trust Bank, Limited	-	〃	-	US$ 17,286	N/A	US$ 17,286	
	Guardian Life Global Funding	-	〃	-	US$ 17,140	N/A	US$ 17,140	
	U.S. Bancorp.	-	〃	-	US$ 16,962	N/A	US$ 16,962	
	Danske Bank A/S	-	〃	-	US$ 16,698	N/A	US$ 16,698	
	Société Générale Société anonyme	-	〃	-	US$ 16,589	N/A	US$ 16,589	
	The Bank of Nova Scotia	-	〃	-	US$ 16,474	N/A	US$ 16,474	
	Volkswagen Group of America Finance, LLC	-	〃	-	US$ 16,251	N/A	US$ 16,251	
	The Bank of New York Mellon Corporation	-	〃	-	US$ 16,064	N/A	US$ 16,064	
	Nomura Holdings, Inc.	-	〃	-	US$ 15,719	N/A	US$ 15,719	
	Banque Fédérative du Crédit Mutuel	-	〃	-	US$ 14,439	N/A	US$ 14,439	
	UBS Group AG	-	〃	-	US$ 14,328	N/A	US$ 14,328	
	Standard Chartered PLC	-	〃	-	US$ 14,304	N/A	US$ 14,304	
	Protective Life Global Funding	-	〃	-	US$ 14,155	N/A	US$ 14,155	
	American Express Company	-	〃	-	US$ 13,685	N/A	US$ 13,685	
	UnitedHealth Group Incorporated	-	〃	-	US$ 13,673	N/A	US$ 13,673	
	Hyundai Capital America	-	〃	-	US$ 13,567	N/A	US$ 13,567	
	NTT Finance Corporation	-	〃	-	US$ 13,544	N/A	US$ 13,544	
	Amgen Inc.	-	〃	-	US$ 13,330	N/A	US$ 13,330	
	AerCap Ireland Capital Designated Activity Company	-	〃	-	US$ 13,278	N/A	US$ 13,278	
	Enel Finance International N.V.	-	〃	-	US$ 13,139	N/A	US$ 13,139	
	Penske Truck Leasing Co., L.P.	-	〃	-	US$ 13,095	N/A	US$ 13,095	
	Intuit Inc.	-	〃	-	US$ 12,686	N/A	US$ 12,686	
	Pfizer Investment Enterprises Pte. Ltd.	-	〃	-	US$ 12,590	N/A	US$ 12,590	
	Apple Inc.	-	〃	-	US$ 12,489	N/A	US$ 12,489	
	Coöperatieve Rabobank U.A.	-	〃	-	US$ 12,434	N/A	US$ 12,434	
	New York Life Global Funding	-	〃	-	US$ 12,343	N/A	US$ 12,343	
	Santander UK Group Holdings plc	-	〃	-	US$ 12,277	N/A	US$ 12,277	
	NatWest Markets Plc	-	〃	-	US$ 11,873	N/A	US$ 11,873	
	ING Groep N.V.	-	〃	-	US$ 11,773	N/A	US$ 11,773	
	Nordea Bank Abp	-	〃	-	US$ 11,677	N/A	US$ 11,677	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Mizuho Financial Group, Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 11,665	N/A	US$ 11,665	
	ASB Bank Limited	-	〃	-	US$ 11,504	N/A	US$ 11,504	
	Northwestern Mutual Global Funding	-	〃	-	US$ 11,332	N/A	US$ 11,332	
	Amazon.com, Inc.	-	〃	-	US$ 11,317	N/A	US$ 11,317	
	ONEOK, Inc.	-	〃	-	US$ 11,048	N/A	US$ 11,048	
	Bank of Montreal	-	〃	-	US$ 11,032	N/A	US$ 11,032	
	NextEra Energy Capital Holdings, Inc.	-	〃	-	US$ 10,970	N/A	US$ 10,970	
	Southern California Edison Company	-	〃	-	US$ 10,796	N/A	US$ 10,796	
	Ryder System, Inc.	-	〃	-	US$ 10,588	N/A	US$ 10,588	
	Verizon Communications Inc.	-	〃	-	US$ 10,584	N/A	US$ 10,584	
	S&P Global Inc.	-	〃	-	US$ 10,556	N/A	US$ 10,556	
	Deutsche Bank AG - New York Branch	-	〃	-	US$ 10,454	N/A	US$ 10,454	
	Equifax Inc.	-	〃	-	US$ 10,338	N/A	US$ 10,338	
	Macquarie Group Limited	-	〃	-	US$ 10,206	N/A	US$ 10,206	
	AT&T Inc.	-	〃	-	US$ 9,879	N/A	US$ 9,879	
	Svenska Handelsbanken AB (publ)	-	〃	-	US$ 9,866	N/A	US$ 9,866	
	John Deere Capital Corporation	-	〃	-	US$ 9,776	N/A	US$ 9,776	
	Truist Financial Corporation	-	〃	-	US$ 9,513	N/A	US$ 9,513	
	Haleon US Capital LLC	-	〃	-	US$ 9,332	N/A	US$ 9,332	
	Roper Technologies, Inc.	-	〃	-	US$ 9,177	N/A	US$ 9,177	
	Exelon Corporation	-	〃	-	US$ 9,100	N/A	US$ 9,100	
	Thermo Fisher Scientific Inc.	-	〃	-	US$ 9,049	N/A	US$ 9,049	
	Florida Power & Light Company	-	〃	-	US$ 9,042	N/A	US$ 9,042	
	RGA Global Funding	-	〃	-	US$ 8,977	N/A	US$ 8,977	
	Merck & Co., Inc.	-	〃	-	US$ 8,951	N/A	US$ 8,951	
	Equinor ASA	-	〃	-	US$ 8,866	N/A	US$ 8,866	
	Honeywell International Inc.	-	〃	-	US$ 8,759	N/A	US$ 8,759	
	The PNC Financial Services Group, Inc.	-	〃	-	US$ 8,451	N/A	US$ 8,451	
	Macquarie Bank Limited	-	〃	-	US$ 8,390	N/A	US$ 8,390	
	Rabobank Nederland - New York Branch	-	〃	-	US$ 8,173	N/A	US$ 8,173	
	Lowe's Companies, Inc.	-	〃	-	US$ 8,065	N/A	US$ 8,065	
	Cox Communications, Inc.	-	〃	-	US$ 7,964	N/A	US$ 7,964	
	TORONTO-DOMINION BANK/THE	-	〃	-	US$ 7,955	N/A	US$ 7,955	
	Constellation Energy Generation, LLC	-	〃	-	US$ 7,903	N/A	US$ 7,903	
	Lockheed Martin Corporation	-	〃	-	US$ 7,863	N/A	US$ 7,863	
	KfW	-	〃	-	US$ 7,860	N/A	US$ 7,860	
	Intel Corporation	-	〃	-	US$ 7,820	N/A	US$ 7,820	
	International Bank for Reconstruction and Development	-	〃	-	US$ 7,770	N/A	US$ 7,770	
	Great-West Lifeco U.S. Finance 2020, Lp	-	〃	-	US$ 7,631	N/A	US$ 7,631	
	RTX Corporation	-	〃	-	US$ 7,603	N/A	US$ 7,603	
	Inter-American Development Bank	-	〃	-	US$ 7,511	N/A	US$ 7,511	
	Suncorp-Metway Limited	-	〃	-	US$ 7,453	N/A	US$ 7,453	
	AstraZeneca Finance LLC	-	〃	-	US$ 7,185	N/A	US$ 7,185	
	Chevron Corporation	-	〃	-	US$ 7,032	N/A	US$ 7,032	
	Daimler Trucks Finance North America LLC	-	〃	-	US$ 7,013	N/A	US$ 7,013	
	The East Ohio Gas Company	-	〃	-	US$ 6,978	N/A	US$ 6,978	
	Philip Morris International Inc.	-	〃	-	US$ 6,807	N/A	US$ 6,807	
	AstraZeneca PLC	-	〃	-	US$ 6,798	N/A	US$ 6,798	
	Fiserv, Inc.	-	〃	-	US$ 6,745	N/A	US$ 6,745	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	December 31, 2023 Carrying Value (Foreign Currencies in Thousands)	December 31, 2023 Percentage of Ownership (%)	December 31, 2023 Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Pacific Life Global Funding II	-	Financial assets at fair value through other comprehensive income	-	US$ 6,726	N/A	US$ 6,726	
	UBS AG, London Branch	-	〃	-	US$ 6,595	N/A	US$ 6,595	
	WEC Energy Group, Inc.	-	〃	-	US$ 6,555	N/A	US$ 6,555	
	Met Tower Global Funding	-	〃	-	US$ 6,550	N/A	US$ 6,550	
	Roche Holdings, Inc.	-	〃	-	US$ 6,539	N/A	US$ 6,539	
	MPLX LP	-	〃	-	US$ 6,514	N/A	US$ 6,514	
	Fidelity National Information Services, Inc.	-	〃	-	US$ 6,498	N/A	US$ 6,498	
	The Charles Schwab Corporation	-	〃	-	US$ 6,437	N/A	US$ 6,437	
	NatWest Group plc	-	〃	-	US$ 6,360	N/A	US$ 6,360	
	Ameren Corporation	-	〃	-	US$ 6,304	N/A	US$ 6,304	
	Take-Two Interactive Software, Inc.	-	〃	-	US$ 6,237	N/A	US$ 6,237	
	Eaton Corporation	-	〃	-	US$ 6,218	N/A	US$ 6,218	
	Georgia Power Company	-	〃	-	US$ 6,090	N/A	US$ 6,090	
	Huntington Bancshares Incorporated	-	〃	-	US$ 5,985	N/A	US$ 5,985	
	Elevance Health, Inc.	-	〃	-	US$ 5,914	N/A	US$ 5,914	
	Intercontinental Exchange, Inc.	-	〃	-	US$ 5,906	N/A	US$ 5,906	
	Ameriprise Financial, Inc.	-	〃	-	US$ 5,837	N/A	US$ 5,837	
	National Bank of Canada	-	〃	-	US$ 5,783	N/A	US$ 5,783	
	Fifth Third Bancorp	-	〃	-	US$ 5,777	N/A	US$ 5,777	
	ERAC USA Finance LLC	-	〃	-	US$ 5,722	N/A	US$ 5,722	
	Scentre Group Trust 1	-	〃	-	US$ 5,685	N/A	US$ 5,685	
	Stryker Corporation	-	〃	-	US$ 5,630	N/A	US$ 5,630	
	Medtronic Global Holdings S.C.A.	-	〃	-	US$ 5,572	N/A	US$ 5,572	
	NBN Co Limited	-	〃	-	US$ 5,537	N/A	US$ 5,537	
	WPP Finance 2010	-	〃	-	US$ 5,537	N/A	US$ 5,537	
	Discover Bank (New Castle, Delaware)	-	〃	-	US$ 5,440	N/A	US$ 5,440	
	DNB Bank ASA	-	〃	-	US$ 5,421	N/A	US$ 5,421	
	Comcast Corporation	-	〃	-	US$ 5,369	N/A	US$ 5,369	
	Exxon Mobil Corporation	-	〃	-	US$ 5,369	N/A	US$ 5,369	
	Alabama Power Company	-	〃	-	US$ 5,348	N/A	US$ 5,348	
	Fox Corporation	-	〃	-	US$ 5,320	N/A	US$ 5,320	
	McKesson Corporation	-	〃	-	US$ 5,316	N/A	US$ 5,316	
	Sydney Airport Finance Company Pty Ltd	-	〃	-	US$ 5,160	N/A	US$ 5,160	
	Virginia Electric and Power Company	-	〃	-	US$ 5,075	N/A	US$ 5,075	
	Siemens Financieringsmaatschappij N.V.	-	〃	-	US$ 5,063	N/A	US$ 5,063	
	Southwest Airlines Co.	-	〃	-	US$ 5,021	N/A	US$ 5,021	
	Ventas Realty, Limited Partnership	-	〃	-	US$ 5,010	N/A	US$ 5,010	
	NiSource Inc.	-	〃	-	US$ 4,918	N/A	US$ 4,918	
	CGI Inc.	-	〃	-	US$ 4,842	N/A	US$ 4,842	
	Brookfield Finance Inc.	-	〃	-	US$ 4,812	N/A	US$ 4,812	
	HEICO Corporation	-	〃	-	US$ 4,786	N/A	US$ 4,786	
	ANZ New Zealand (Int'l) Limited	-	〃	-	US$ 4,689	N/A	US$ 4,689	
	Bristol-Myers Squibb Company	-	〃	-	US$ 4,604	N/A	US$ 4,604	
	HP Inc.	-	〃	-	US$ 4,603	N/A	US$ 4,603	
	Nutrien Ltd.	-	〃	-	US$ 4,564	N/A	US$ 4,564	
	Enbridge Inc.	-	〃	-	US$ 4,535	N/A	US$ 4,535	
	CenterPoint Energy, Inc.	-	〃	-	US$ 4,505	N/A	US$ 4,505	
	W. P. Carey Inc.	-	〃	-	US$ 4,457	N/A	US$ 4,457	
	Pioneer Natural Resources Company	-	〃	-	US$ 4,455	N/A	US$ 4,455	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Otis Worldwide Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 4,442	N/A	US$ 4,442	
	ITC Holdings Corp.	-	〃	-	US$ 4,411	N/A	US$ 4,411	
	Citizens Bank, National Association	-	〃	-	US$ 4,363	N/A	US$ 4,363	
	Skandinaviska Enskilda Banken AB (publ)	-	〃	-	US$ 4,343	N/A	US$ 4,343	
	State Street Corporation	-	〃	-	US$ 4,313	N/A	US$ 4,313	
	Toyota Motor Credit Corporation	-	〃	-	US$ 4,261	N/A	US$ 4,261	
	Dollar General Corporation	-	〃	-	US$ 4,188	N/A	US$ 4,188	
	Brighthouse Financial Global Funding	-	〃	-	US$ 4,132	N/A	US$ 4,132	
	F&G Global Funding	-	〃	-	US$ 4,120	N/A	US$ 4,120	
	JPMORGAN CHASE & CO	-	〃	-	US$ 4,114	N/A	US$ 4,114	
	Public Service Enterprise Group Incorporated	-	〃	-	US$ 4,044	N/A	US$ 4,044	
	Korea Electric Power Corporation	-	〃	-	US$ 4,036	N/A	US$ 4,036	
	Schlumberger Investment SA	-	〃	-	US$ 4,028	N/A	US$ 4,028	
	AvalonBay Communities, Inc.	-	〃	-	US$ 4,006	N/A	US$ 4,006	
	Element Fleet Management Corp.	-	〃	-	US$ 4,004	N/A	US$ 4,004	
	CNO Global Funding	-	〃	-	US$ 3,967	N/A	US$ 3,967	
	Lincoln National Corporation	-	〃	-	US$ 3,948	N/A	US$ 3,948	
	Monongahela Power Company	-	〃	-	US$ 3,946	N/A	US$ 3,946	
	Public Storage	-	〃	-	US$ 3,934	N/A	US$ 3,934	
	Walmart Inc.	-	〃	-	US$ 3,875	N/A	US$ 3,875	
	Citibank, N.A.	-	〃	-	US$ 3,858	N/A	US$ 3,858	
	Anheuser-Busch Companies, LLC	-	〃	-	US$ 3,857	N/A	US$ 3,857	
	B.A.T. International Finance p.l.c.	-	〃	-	US$ 3,792	N/A	US$ 3,792	
	Fortinet, Inc.	-	〃	-	US$ 3,667	N/A	US$ 3,667	
	Norsk Hydro ASA	-	〃	-	US$ 3,666	N/A	US$ 3,666	
	Appalachian Power Company	-	〃	-	US$ 3,661	N/A	US$ 3,661	
	AutoZone, Inc.	-	〃	-	US$ 3,646	N/A	US$ 3,646	
	Eversource Energy	-	〃	-	US$ 3,568	N/A	US$ 3,568	
	Parker-Hannifin Corporation	-	〃	-	US$ 3,565	N/A	US$ 3,565	
	Jackson National Life Global Funding	-	〃	-	US$ 3,563	N/A	US$ 3,563	
	The Israel Electric Corporation Ltd	-	〃	-	US$ 3,554	N/A	US$ 3,554	
	GA Global Funding Trust	-	〃	-	US$ 3,552	N/A	US$ 3,552	
	CenterPoint Energy Resources Corp.	-	〃	-	US$ 3,539	N/A	US$ 3,539	
	Baxter International Inc.	-	〃	-	US$ 3,486	N/A	US$ 3,486	
	Kimco Realty Corporation	-	〃	-	US$ 3,468	N/A	US$ 3,468	
	Advocate Health & Hospitals Corporation	-	〃	-	US$ 3,444	N/A	US$ 3,444	
	Meta Platforms, Inc.	-	〃	-	US$ 3,430	N/A	US$ 3,430	
	Sempra	-	〃	-	US$ 3,429	N/A	US$ 3,429	
	BorgWarner Inc.	-	〃	-	US$ 3,426	N/A	US$ 3,426	
	Morgan Stanley Bank, N.A.	-	〃	-	US$ 3,416	N/A	US$ 3,416	
	B.A.T Capital Corporation	-	〃	-	US$ 3,325	N/A	US$ 3,325	
	Highmark Inc.	-	〃	-	US$ 3,283	N/A	US$ 3,283	
	Pfizer Inc.	-	〃	-	US$ 3,281	N/A	US$ 3,281	
	Realty Income Corporation	-	〃	-	US$ 3,271	N/A	US$ 3,271	
	Ross Stores, Inc.	-	〃	-	US$ 3,267	N/A	US$ 3,267	
	Republic Services, Inc.	-	〃	-	US$ 3,212	N/A	US$ 3,212	
	Verisk Analytics, Inc.	-	〃	-	US$ 3,191	N/A	US$ 3,191	
	Truist Bank	-	〃	-	US$ 3,173	N/A	US$ 3,173	
	Corebridge Financial, Inc.	-	〃	-	US$ 3,120	N/A	US$ 3,120	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Lundin Energy Finance BV	-	Financial assets at fair value through other comprehensive income	-	US$ 3,099	N/A	US$ 3,099	
	Wells Fargo Bank, National Association	-	〃	-	US$ 3,098	N/A	US$ 3,098	
	Atmos Energy Corporation	-	〃	-	US$ 3,068	N/A	US$ 3,068	
	EIDP, Inc.	-	〃	-	US$ 3,059	N/A	US$ 3,059	
	Mutual Of Omaha Companies Global Funding	-	〃	-	US$ 3,057	N/A	US$ 3,057	
	Nestlé Holdings, Inc.	-	〃	-	US$ 3,040	N/A	US$ 3,040	
	CMS Energy Corporation	-	〃	-	US$ 3,017	N/A	US$ 3,017	
	Johnson & Johnson	-	〃	-	US$ 3,015	N/A	US$ 3,015	
	CNA Financial Corporation	-	〃	-	US$ 2,978	N/A	US$ 2,978	
	Prologis, L.P.	-	〃	-	US$ 2,974	N/A	US$ 2,974	
	Southern California Gas Company	-	〃	-	US$ 2,929	N/A	US$ 2,929	
	Rio Tinto Finance (USA) Limited	-	〃	-	US$ 2,900	N/A	US$ 2,900	
	Xcel Energy Inc.	-	〃	-	US$ 2,894	N/A	US$ 2,894	
	Canadian Imperial Bank of Commerce	-	〃	-	US$ 2,891	N/A	US$ 2,891	
	BHP Billiton Finance (USA) Limited	-	〃	-	US$ 2,865	N/A	US$ 2,865	
	Diageo Capital plc	-	〃	-	US$ 2,847	N/A	US$ 2,847	
	Novartis Capital Corporation	-	〃	-	US$ 2,810	N/A	US$ 2,810	
	Baxalta Incorporated	-	〃	-	US$ 2,750	N/A	US$ 2,750	
	Dominion Energy, Inc.	-	〃	-	US$ 2,746	N/A	US$ 2,746	
	7-Eleven, Inc.	-	〃	-	US$ 2,737	N/A	US$ 2,737	
	Oncor Electric Delivery Company LLC	-	〃	-	US$ 2,716	N/A	US$ 2,716	
	Simon Property Group, L.P.	-	〃	-	US$ 2,692	N/A	US$ 2,692	
	Weyerhaeuser Company	-	〃	-	US$ 2,687	N/A	US$ 2,687	
	National Australia Bank Limited, New York Branch	-	〃	-	US$ 2,647	N/A	US$ 2,647	
	Eastern Energy Gas Holdings, LLC	-	〃	-	US$ 2,643	N/A	US$ 2,643	
	Chevron Phillips Chemical Company LLC	-	〃	-	US$ 2,636	N/A	US$ 2,636	
	O'Reilly Automotive, Inc.	-	〃	-	US$ 2,610	N/A	US$ 2,610	
	The Estée Lauder Companies Inc.	-	〃	-	US$ 2,609	N/A	US$ 2,609	
	Masco Corporation	-	〃	-	US$ 2,601	N/A	US$ 2,601	
	The Southern Company	-	〃	-	US$ 2,575	N/A	US$ 2,575	
	Avangrid, Inc.	-	〃	-	US$ 2,574	N/A	US$ 2,574	
	Bank of New Zealand	-	〃	-	US$ 2,563	N/A	US$ 2,563	
	Air Products and Chemicals, Inc.	-	〃	-	US$ 2,531	N/A	US$ 2,531	
	Nuveen Finance, LLC	-	〃	-	US$ 2,460	N/A	US$ 2,460	
	Coca-Cola Europacific Partners PLC	-	〃	-	US$ 2,433	N/A	US$ 2,433	
	American Electric Power Company, Inc.	-	〃	-	US$ 2,431	N/A	US$ 2,431	
	Entergy Texas, Inc.	-	〃	-	US$ 2,427	N/A	US$ 2,427	
	Workday, Inc.	-	〃	-	US$ 2,406	N/A	US$ 2,406	
	CRH America, Inc.	-	〃	-	US$ 2,400	N/A	US$ 2,400	
	Swedbank AB (publ)	-	〃	-	US$ 2,399	N/A	US$ 2,399	
	Air Lease Corporation	-	〃	-	US$ 2,360	N/A	US$ 2,360	
	Chevron U.S.A. Inc.	-	〃	-	US$ 2,349	N/A	US$ 2,349	
	Westpac Banking Corporation	-	〃	-	US$ 2,346	N/A	US$ 2,346	
	Texas Instruments Incorporated	-	〃	-	US$ 2,344	N/A	US$ 2,344	
	Yara International ASA	-	〃	-	US$ 2,316	N/A	US$ 2,316	
	Magellan Midstream Partners, L.P.	-	〃	-	US$ 2,314	N/A	US$ 2,314	
	GE HealthCare Technologies Inc.	-	〃	-	US$ 2,277	N/A	US$ 2,277	
	Empower Finance 2020, LP	-	〃	-	US$ 2,268	N/A	US$ 2,268	
	Cardinal Health, Inc.	-	〃	-	US$ 2,266	N/A	US$ 2,266	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	December 31, 2023 Carrying Value (Foreign Currencies in Thousands)	December 31, 2023 Percentage of Ownership (%)	December 31, 2023 Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	ONE Gas, Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 2,265	N/A	US$ 2,265	
	Mitsubishi HC Capital Inc.	-	〃	-	US$ 2,249	N/A	US$ 2,249	
	Alliant Energy Finance, LLC	-	〃	-	US$ 2,230	N/A	US$ 2,230	
	The Western Union Company	-	〃	-	US$ 2,187	N/A	US$ 2,187	
	Georgia-Pacific LLC	-	〃	-	US$ 2,160	N/A	US$ 2,160	
	Health Care Service Corporation, a Mutual Legal Reserve Company	-	〃	-	US$ 2,130	N/A	US$ 2,130	
	American Honda Finance Corporation	-	〃	-	US$ 2,087	N/A	US$ 2,087	
	Phillips 66	-	〃	-	US$ 2,057	N/A	US$ 2,057	
	Bank of America, National Association	-	〃	-	US$ 2,036	N/A	US$ 2,036	
	Pricoa Global Funding I	-	〃	-	US$ 2,019	N/A	US$ 2,019	
	KODIT Global 2023-1 Co., Ltd.	-	〃	-	US$ 1,996	N/A	US$ 1,996	
	Public Service Electric and Gas Company	-	〃	-	US$ 1,986	N/A	US$ 1,986	
	Mead Johnson Nutrition Company	-	〃	-	US$ 1,973	N/A	US$ 1,973	
	Magna International Inc.	-	〃	-	US$ 1,967	N/A	US$ 1,967	
	UBS Group Funding (Jersey) Ltd.	-	〃	-	US$ 1,951	N/A	US$ 1,951	
	Tucson Electric Power Company	-	〃	-	US$ 1,948	N/A	US$ 1,948	
	Olympus Corporation	-	〃	-	US$ 1,943	N/A	US$ 1,943	
	Welltower Inc.	-	〃	-	US$ 1,930	N/A	US$ 1,930	
	Gulf Power Company	-	〃	-	US$ 1,916	N/A	US$ 1,916	
	CSX Corporation	-	〃	-	US$ 1,911	N/A	US$ 1,911	
	Shinhan Financial Group Co., Ltd.	-	〃	-	US$ 1,856	N/A	US$ 1,856	
	Mitsubishi Corporation	-	〃	-	US$ 1,823	N/A	US$ 1,823	
	Sprint Spectrum Co Llc	-	〃	-	US$ 1,812	N/A	US$ 1,812	
	NBK SPC Limited	-	〃	-	US$ 1,809	N/A	US$ 1,809	
	Berkshire Hathaway Energy Company	-	〃	-	US$ 1,792	N/A	US$ 1,792	
	CenterPoint Energy Houston Electric, LLC	-	〃	-	US$ 1,785	N/A	US$ 1,785	
	Mondelez International, Inc.	-	〃	-	US$ 1,759	N/A	US$ 1,759	
	Kentucky Utilities Company	-	〃	-	US$ 1,750	N/A	US$ 1,750	
	SMBC Aviation Capital Finance DAC	-	〃	-	US$ 1,747	N/A	US$ 1,747	
	USAA Capital Corp.	-	〃	-	US$ 1,747	N/A	US$ 1,747	
	Evergy Kansas Central, Inc.	-	〃	-	US$ 1,692	N/A	US$ 1,692	
	DTE Energy Company	-	〃	-	US$ 1,685	N/A	US$ 1,685	
	University of California	-	〃	-	US$ 1,631	N/A	US$ 1,631	
	CSL Finance plc	-	〃	-	US$ 1,601	N/A	US$ 1,601	
	Gulfstream Natural Gas System, L.L.C.	-	〃	-	US$ 1,598	N/A	US$ 1,598	
	eBay Inc.	-	〃	-	US$ 1,594	N/A	US$ 1,594	
	Emerson Electric Co.	-	〃	-	US$ 1,576	N/A	US$ 1,576	
	International Business Machines Corporation	-	〃	-	US$ 1,570	N/A	US$ 1,570	
	Burlington Northern Santa Fe, LLC	-	〃	-	US$ 1,566	N/A	US$ 1,566	
	Glencore Funding LLC	-	〃	-	US$ 1,556	N/A	US$ 1,556	
	Jefferies Financial Group Inc.	-	〃	-	US$ 1,543	N/A	US$ 1,543	
	Duke Energy Corporation	-	〃	-	US$ 1,538	N/A	US$ 1,538	
	T-Mobile USA, Inc.	-	〃	-	US$ 1,526	N/A	US$ 1,526	
	Zoetis Inc.	-	〃	-	US$ 1,517	N/A	US$ 1,517	
	APA Infrastructure Limited	-	〃	-	US$ 1,511	N/A	US$ 1,511	
	Kinder Morgan, Inc.	-	〃	-	US$ 1,510	N/A	US$ 1,510	
	Phillips 66 Company	-	〃	-	US$ 1,495	N/A	US$ 1,495	
	American International Group, Inc.	-	〃	-	US$ 1,479	N/A	US$ 1,479	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Essex Portfolio, L.P.	-	Financial assets at fair value through other comprehensive income	-	US$ 1,477	N/A	US$ 1,477	
	Microchip Technology Incorporated	-	〃	-	US$ 1,477	N/A	US$ 1,477	
	Amcor Flexibles North America Inc.	-	〃	-	US$ 1,473	N/A	US$ 1,473	
	Wipro IT Services LLC	-	〃	-	US$ 1,471	N/A	US$ 1,471	
	NSTAR Electric Company	-	〃	-	US$ 1,455	N/A	US$ 1,455	
	Duke Energy Florida, LLC	-	〃	-	US$ 1,448	N/A	US$ 1,448	
	National Rural Utilities Cooperative Finance Corporation	-	〃	-	US$ 1,445	N/A	US$ 1,445	
	Alimentation Couche-Tard Inc.	-	〃	-	US$ 1,442	N/A	US$ 1,442	
	The Cigna Group	-	〃	-	US$ 1,340	N/A	US$ 1,340	
	Eastern Gas Transmission and Storage, Inc.	-	〃	-	US$ 1,319	N/A	US$ 1,319	
	Caterpillar Financial Services Corporation	-	〃	-	US$ 1,300	N/A	US$ 1,300	
	The Williams Companies, Inc.	-	〃	-	US$ 1,259	N/A	US$ 1,259	
	Andrew W. Mellon Foundation, The	-	〃	-	US$ 1,247	N/A	US$ 1,247	
	Union Pacific Corporation	-	〃	-	US$ 1,227	N/A	US$ 1,227	
	Ecolab Inc.	-	〃	-	US$ 1,205	N/A	US$ 1,205	
	Sysco Corporation	-	〃	-	US$ 1,198	N/A	US$ 1,198	
	Mondelez International Holdings Netherlands B.V.	-	〃	-	US$ 1,115	N/A	US$ 1,115	
	Ferguson Finance PLC	-	〃	-	US$ 1,113	N/A	US$ 1,113	
	Reliance Standard Life Global Funding II	-	〃	-	US$ 1,112	N/A	US$ 1,112	
	Nucor Corporation	-	〃	-	US$ 1,072	N/A	US$ 1,072	
	AIB Group plc	-	〃	-	US$ 1,065	N/A	US$ 1,065	
	Enterprise Products Operating LLC	-	〃	-	US$ 1,034	N/A	US$ 1,034	
	Lennox International Inc.	-	〃	-	US$ 1,026	N/A	US$ 1,026	
	New York State Electric & Gas Corporation	-	〃	-	US$ 1,026	N/A	US$ 1,026	
	Sabine Pass Liquefaction, LLC	-	〃	-	US$ 1,018	N/A	US$ 1,018	
	Scottish Power Limited	-	〃	-	US$ 1,004	N/A	US$ 1,004	
	Suntory Holdings Limited	-	〃	-	US$ 973	N/A	US$ 973	
	Canadian Pacific Railway Company	-	〃	-	US$ 959	N/A	US$ 959	
	AIA Group Limited	-	〃	-	US$ 956	N/A	US$ 956	
	LYB Finance Company B.V.	-	〃	-	US$ 942	N/A	US$ 942	
	Piedmont Natural Gas Company, Inc.	-	〃	-	US$ 932	N/A	US$ 932	
	Juniper Networks, Inc.	-	〃	-	US$ 926	N/A	US$ 926	
	Lennar Corporation	-	〃	-	US$ 923	N/A	US$ 923	
	Amcor Finance (USA), Inc.	-	〃	-	US$ 917	N/A	US$ 917	
	BAE Systems Finance Inc.	-	〃	-	US$ 917	N/A	US$ 917	
	The Interpublic Group of Companies, Inc.	-	〃	-	US$ 916	N/A	US$ 916	
	AEP Texas Inc.	-	〃	-	US$ 914	N/A	US$ 914	
	Assurant, Inc.	-	〃	-	US$ 914	N/A	US$ 914	
	Unilever Capital Corporation	-	〃	-	US$ 890	N/A	US$ 890	
	Reynolds American Inc.	-	〃	-	US$ 889	N/A	US$ 889	
	County of Palm Beach, Florida	-	〃	-	US$ 825	N/A	US$ 825	
	TransCanada PipeLines Limited	-	〃	-	US$ 819	N/A	US$ 819	
	CubeSmart, L.P.	-	〃	-	US$ 784	N/A	US$ 784	
	Southwest Gas Corporation	-	〃	-	US$ 771	N/A	US$ 771	
	Zimmer Biomet Holdings, Inc.	-	〃	-	US$ 771	N/A	US$ 771	
	BP Capital Markets America, Inc.	-	〃	-	US$ 770	N/A	US$ 770	
	Niagara Mohawk Power Corporation	-	〃	-	US$ 761	N/A	US$ 761	
	Veralto Corporation	-	〃	-	US$ 759	N/A	US$ 759	
	The Brooklyn Union Gas Company	-	〃	-	US$ 755	N/A	US$ 755	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Mars, Incorporated	-	Financial assets at fair value through other comprehensive income	-	US$ 754	N/A	US$ 754	
	Manufacturers and Traders Trust Company	-	〃	-	US$ 751	N/A	US$ 751	
	Consolidated Edison Company of New York, Inc.	-	〃	-	US$ 750	N/A	US$ 750	
	Oklahoma Gas and Electric Company	-	〃	-	US$ 749	N/A	US$ 749	
	Voya Financial, Inc.	-	〃	-	US$ 749	N/A	US$ 749	
	Marsh & McLennan Companies, Inc.	-	〃	-	US$ 747	N/A	US$ 747	
	TELUS Corporation	-	〃	-	US$ 745	N/A	US$ 745	
	Waste Management, Inc.	-	〃	-	US$ 744	N/A	US$ 744	
	Visa Inc.	-	〃	-	US$ 739	N/A	US$ 739	
	PACCAR Financial Corp.	-	〃	-	US$ 738	N/A	US$ 738	
	Sky Limited	-	〃	-	US$ 691	N/A	US$ 691	
	Hyundai Capital Services, Inc.	-	〃	-	US$ 689	N/A	US$ 689	
	The Allstate Corporation	-	〃	-	US$ 675	N/A	US$ 675	
	QNB Finance Ltd.	-	〃	-	US$ 673	N/A	US$ 673	
	Sodexo, Inc.	-	〃	-	US$ 672	N/A	US$ 672	
	Automatic Data Processing, Inc.	-	〃	-	US$ 649	N/A	US$ 649	
	L3Harris Technologies, Inc.	-	〃	-	US$ 617	N/A	US$ 617	
	Southern Power Company	-	〃	-	US$ 612	N/A	US$ 612	
	Burlington Resources Inc.	-	〃	-	US$ 600	N/A	US$ 600	
	Starbucks Corporation	-	〃	-	US$ 594	N/A	US$ 594	
	Florida Hurricane Catastrophe Fund Finance Corporation	-	〃	-	US$ 593	N/A	US$ 593	
	Infor, Inc.	-	〃	-	US$ 589	N/A	US$ 589	
	Columbia Pipelines Holding Company, LLC	-	〃	-	US$ 566	N/A	US$ 566	
	American Water Capital Corp.	-	〃	-	US$ 562	N/A	US$ 562	
	Columbia Pipelines Operating Co. LLC	-	〃	-	US$ 538	N/A	US$ 538	
	Shell International Finance B.V.	-	〃	-	US$ 536	N/A	US$ 536	
	Arizona Public Service Company	-	〃	-	US$ 520	N/A	US$ 520	
	State of Hawaii	-	〃	-	US$ 515	N/A	US$ 515	
	Intesa Sanpaolo S.p.A.	-	〃	-	US$ 512	N/A	US$ 512	
	ConocoPhillips Company	-	〃	-	US$ 510	N/A	US$ 510	
	Mississippi Power Company	-	〃	-	US$ 510	N/A	US$ 510	
	MassMutual Global Funding II	-	〃	-	US$ 506	N/A	US$ 506	
	Westpac New Zealand Limited	-	〃	-	US$ 499	N/A	US$ 499	
	Deutsche Telekom International Finance B.V.	-	〃	-	US$ 496	N/A	US$ 496	
	Haleon UK Capital plc	-	〃	-	US$ 488	N/A	US$ 488	
	Commonwealth Bank of Australia	-	〃	-	US$ 487	N/A	US$ 487	
	Trane Technologies Luxembourg Finance S.A.	-	〃	-	US$ 486	N/A	US$ 486	
	Genuine Parts Company	-	〃	-	US$ 480	N/A	US$ 480	
	Altria Group, Inc.	-	〃	-	US$ 477	N/A	US$ 477	
	McCormick & Company, Incorporated	-	〃	-	US$ 477	N/A	US$ 477	
	DENSO Corporation	-	〃	-	US$ 453	N/A	US$ 453	
	Brazos Higher Education Authority Inc	-	〃	-	US$ 444	N/A	US$ 444	
	Pernod Ricard International Finance LLC	-	〃	-	US$ 435	N/A	US$ 435	
	Aker BP ASA	-	〃	-	US$ 433	N/A	US$ 433	
	The Home Depot, Inc.	-	〃	-	US$ 416	N/A	US$ 416	
	Target Corporation	-	〃	-	US$ 412	N/A	US$ 412	
	National Australia Bank Limited	-	〃	-	US$ 410	N/A	US$ 410	
	Entergy Corporation	-	〃	-	US$ 395	N/A	US$ 395	
	GlaxoSmithKline Capital Inc.	-	〃	-	US$ 394	N/A	US$ 394	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Aflac Incorporated	-	Financial assets at fair value through other comprehensive income	-	US$ 392	N/A	US$ 392	
	Gilead Sciences, Inc.	-	〃	-	US$ 391	N/A	US$ 391	
	University of Massachusetts Building Authority	-	〃	-	US$ 388	N/A	US$ 388	
	Banco del Estado de Chile	-	〃	-	US$ 386	N/A	US$ 386	
	Sierra Pacific Power Company	-	〃	-	US$ 381	N/A	US$ 381	
	PepsiCo, Inc.	-	〃	-	US$ 364	N/A	US$ 364	
	The Norinchukin Bank	-	〃	-	US$ 362	N/A	US$ 362	
	Cargill, Incorporated	-	〃	-	US$ 359	N/A	US$ 359	
	Mid-America Apartments, L.P.	-	〃	-	US$ 308	N/A	US$ 308	
	Electricité de France S.A.	-	〃	-	US$ 304	N/A	US$ 304	
	Consumers Energy Company	-	〃	-	US$ 302	N/A	US$ 302	
	Aptiv PLC	-	〃	-	US$ 290	N/A	US$ 290	
	National Grid plc	-	〃	-	US$ 289	N/A	US$ 289	
	Nordson Corporation	-	〃	-	US$ 286	N/A	US$ 286	
	QatarEnergy	-	〃	-	US$ 275	N/A	US$ 275	
	Marriott International, Inc.	-	〃	-	US$ 271	N/A	US$ 271	
	KBC Group NV	-	〃	-	US$ 239	N/A	US$ 239	
	Pennsylvania Electric Company	-	〃	-	US$ 235	N/A	US$ 235	
	Humana Inc.	-	〃	-	US$ 214	N/A	US$ 214	
	Hoover Alabama Board Of Education	-	〃	-	US$ 104	N/A	US$ 104	
	Beth Israel Deaconess Medical Center, Inc.	-	〃	-	US$ 88	N/A	US$ 88	
	Metropolitan Edison Company	-	〃	-	US$ 81	N/A	US$ 81	
	County of Pima, Arizona	-	〃	-	US$ 79	N/A	US$ 79	
	State of Wisconsin	-	〃	-	US$ 64	N/A	US$ 64	
	Aon Corporation	-	〃	-	US$ 52	N/A	US$ 52	
	County of Nueces, Texas	-	〃	-	US$ 25	N/A	US$ 25	
	Bank of America Corporation	-	Financial assets at amortized cost	-	US$ 799,449	N/A	US$ 800,590	
	Wells Fargo & Company	-	〃	-	US$ 619,830	N/A	US$ 626,602	
	Morgan Stanley	-	〃	-	US$ 566,880	N/A	US$ 570,092	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 432,811	N/A	US$ 418,343	
	JPMorgan Chase & Co.	-	〃	-	US$ 391,868	N/A	US$ 394,331	
	Citigroup Inc.	-	〃	-	US$ 251,481	N/A	US$ 252,491	
	Citigroup Global Markets Inc.	-	〃	-	US$ 149,951	N/A	US$ 149,628	
	Citigroup Global Markets Holdings Inc.	-	〃	-	US$ 99,968	N/A	US$ 99,424	
	Goldman Sachs Finance Corp International Ltd	-	〃	-	US$ 99,905	N/A	US$ 99,281	
	Citigroup	-	〃	-	US$ 19,981	N/A	US$ 20,156	
	Nationwide Building Society	-	〃	-	US$ 10,338	N/A	US$ 10,153	
	Daimler Trucks Finance North America LLC	-	〃	-	US$ 9,685	N/A	US$ 9,633	
	Great-West Lifeco U.S. Finance 2020, Lp	-	〃	-	US$ 9,550	N/A	US$ 9,419	
	Mizuho Financial Group, Inc.	-	〃	-	US$ 9,446	N/A	US$ 9,562	
	BNP Paribas SA	-	〃	-	US$ 9,265	N/A	US$ 9,233	
	Fédération des caisses Desjardins du Québec	-	〃	-	US$ 9,185	N/A	US$ 9,088	
	UBS Group AG	-	〃	-	US$ 9,172	N/A	US$ 9,095	
	Nomura Holdings, Inc.	-	〃	-	US$ 9,155	N/A	US$ 9,031	
	NongHyup Bank	-	〃	-	US$ 8,839	N/A	US$ 8,799	
	Banque Fédérative du Crédit Mutuel	-	〃	-	US$ 8,435	N/A	US$ 8,442	
	Canadian Imperial Bank of Commerce	-	〃	-	US$ 8,417	N/A	US$ 8,360	
	Banco Santander, S.A.	-	〃	-	US$ 8,301	N/A	US$ 8,251	
	Ventas Realty, Limited Partnership	-	〃	-	US$ 8,279	N/A	US$ 8,206	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Enel Finance International N.V.	-	Financial assets at amortized cost	-	US$ 8,250	N/A	US$ 8,188	
	Protective Life Global Funding	-	〃	-	US$ 7,983	N/A	US$ 7,896	
	CRH America, Inc.	-	〃	-	US$ 7,954	N/A	US$ 7,849	
	Mercedes-Benz Finance North America LLC	-	〃	-	US$ 7,916	N/A	US$ 7,894	
	BPCE SA	-	〃	-	US$ 7,874	N/A	US$ 7,794	
	Sydney Airport Finance Company Pty Ltd	-	〃	-	US$ 7,727	N/A	US$ 7,672	
	Sumitomo Mitsui Financial Group, Inc.	-	〃	-	US$ 7,538	N/A	US$ 7,515	
	AIG Global Funding	-	〃	-	US$ 7,480	N/A	US$ 7,421	
	Banco Bilbao Vizcaya Argentaria, S.A.	-	〃	-	US$ 7,042	N/A	US$ 7,006	
	Southern California Edison Company	-	〃	-	US$ 5,913	N/A	US$ 5,924	
	NatWest Markets Plc	-	〃	-	US$ 5,515	N/A	US$ 5,483	
	F&G Global Funding	-	〃	-	US$ 5,511	N/A	US$ 5,440	
	ING Groep N.V.	-	〃	-	US$ 5,244	N/A	US$ 5,307	
	Athene Global Funding	-	〃	-	US$ 5,122	N/A	US$ 5,032	
	Hyundai Capital Services, Inc.	-	〃	-	US$ 5,007	N/A	US$ 4,964	
	Svenska Handelsbanken AB (publ)	-	〃	-	US$ 4,723	N/A	US$ 4,755	
	QNB Finance Ltd.	-	〃	-	US$ 4,421	N/A	US$ 4,423	
	Sumitomo Mitsui Trust Bank, Limited	-	〃	-	US$ 4,165	N/A	US$ 4,120	
	Lloyds Banking Group plc	-	〃	-	US$ 3,979	N/A	US$ 3,949	
	Deutsche Bank AG - New York Branch	-	〃	-	US$ 3,974	N/A	US$ 3,944	
	Volkswagen Group of America Finance, LLC	-	〃	-	US$ 3,853	N/A	US$ 3,803	
	Mitsubishi UFJ Financial Group, Inc.	-	〃	-	US$ 3,747	N/A	US$ 3,725	
	Jackson National Life Global Funding	-	〃	-	US$ 3,345	N/A	US$ 3,276	
	ANZ New Zealand (Int'l) Limited	-	〃	-	US$ 3,251	N/A	US$ 3,216	
	Scottish Power Limited	-	〃	-	US$ 3,188	N/A	US$ 3,197	
	Spectra Energy Partners, LP	-	〃	-	US$ 2,851	N/A	US$ 2,812	
	National Bank of Canada	-	〃	-	US$ 2,091	N/A	US$ 2,088	
	Georgia-Pacific LLC	-	〃	-	US$ 1,254	N/A	US$ 1,253	
	GA Global Funding Trust	-	〃	-	US$ 1,174	N/A	US$ 1,175	
	Reliance Standard Life Global Funding II	-	〃	-	US$ 1,083	N/A	US$ 1,075	
	Barclays Bank PLC	-	〃	-	US$ 745	N/A	US$ 744	
	AIA Group Limited	-	〃	-	US$ 585	N/A	US$ 587	
	Agency mortgage-backed securities							
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	-	Financial assets at fair value through other comprehensive income	-	US$ 658,944	N/A	US$ 658,944	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 350,328	N/A	US$ 350,328	
	Government National Mortgage Association	-	〃	-	US$ 225,310	N/A	US$ 225,310	
	Government bond/Agency bonds							
	United States Department of The Treasury	-	Financial assets at fair value through other comprehensive income	-	US$ 718,479	N/A	US$ 718,479	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 6,995	N/A	US$ 6,995	
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	-	〃	-	US$ 1,065	N/A	US$ 1,065	
	Federal Home Loan Banks	-	Financial assets at amortized cost	-	US$ 225,000	N/A	US$ 224,645	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 135,000	N/A	US$ 134,845	
	United States Department of The Treasury	-	〃	-	US$ 88,940	N/A	US$ 89,501	
	Asset-backed securities							
	Wells Fargo Commercial Mortgage Trust 2016-Bnk1	-	Financial assets at fair value through other comprehensive income	-	US$ 9,941	N/A	US$ 9,941	
	JPMBB Commercial Mortgage Securities Trust 2014-C24	-	〃	-	US$ 9,818	N/A	US$ 9,818	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Toyota Auto Receivables 2022-B Owner Trust	-	Financial assets at fair value through other comprehensive income	-	US$ 9,665	N/A	US$ 9,665	
	Gm Financial Consumer Automobile Receivables Trust 2023-3	-	〃	-	US$ 9,033	N/A	US$ 9,033	
	Ford Credit Auto Owner Trust 2021-Rev2	-	〃	-	US$ 7,674	N/A	US$ 7,674	
	Hyundai Auto Receivables Trust 2021-C	-	〃	-	US$ 7,388	N/A	US$ 7,388	
	Toyota Auto Loan Extended Note Trust 2023-1	-	〃	-	US$ 7,351	N/A	US$ 7,351	
	Citigroup Commercial Mortgage Trust 2015-GC33	-	〃	-	US$ 7,069	N/A	US$ 7,069	
	Ford Credit Auto Owner Trust 2020-REV2	-	〃	-	US$ 6,861	N/A	US$ 6,861	
	Hyundai Auto Receivables Trust 2023-B	-	〃	-	US$ 6,280	N/A	US$ 6,280	
	BBCMS Mortgage Trust 2020-C8	-	〃	-	US$ 6,135	N/A	US$ 6,135	
	Morgan Stanley Bank America Merrill Lynch Trust 2016-C30	-	〃	-	US$ 6,131	N/A	US$ 6,131	
	Honda Auto Receivables 2023-2 Owner Trust	-	〃	-	US$ 6,028	N/A	US$ 6,028	
	Morgan Stanley Capital I Trust 2021-L6	-	〃	-	US$ 5,902	N/A	US$ 5,902	
	Bank 2020-BNK26	-	〃	-	US$ 5,840	N/A	US$ 5,840	
	Hudson Yards 2016-10HY Mortgage Trust	-	〃	-	US$ 5,805	N/A	US$ 5,805	
	Benchmark 2019-B11 Mortgage Trust	-	〃	-	US$ 5,699	N/A	US$ 5,699	
	Citigroup Commercial Mortgage Trust 2021-PRM2	-	〃	-	US$ 5,502	N/A	US$ 5,502	
	Bank 2021-bnk33	-	〃	-	US$ 5,496	N/A	US$ 5,496	
	Benchmark 2019-B12 Mortgage Trust	-	〃	-	US$ 5,351	N/A	US$ 5,351	
	Bank 2023-BNK46	-	〃	-	US$ 5,244	N/A	US$ 5,244	
	Benchmark 2023-B39 Mortgage Trust	-	〃	-	US$ 5,208	N/A	US$ 5,208	
	MSWF Commercial Mortgage Trust 2023-1	-	〃	-	US$ 5,172	N/A	US$ 5,172	
	BBCMS 2018-Tall Mortgage Trust	-	〃	-	US$ 5,101	N/A	US$ 5,101	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	〃	-	US$ 5,027	N/A	US$ 5,027	
	Wells Fargo Commercial Mortgage Trust 2021-C59	-	〃	-	US$ 4,815	N/A	US$ 4,815	
	CSAIL 2018-CX11	-	〃	-	US$ 4,777	N/A	US$ 4,777	
	Bank 2017-Bnk6	-	〃	-	US$ 4,772	N/A	US$ 4,772	
	Morgan Stanley Capital I Trust 2016 - BNK2 Fund	-	〃	-	US$ 4,676	N/A	US$ 4,676	
	GM Financial Revolving Receivables Trust 2021-1	-	〃	-	US$ 4,526	N/A	US$ 4,526	
	Bank 2017-BNK9	-	〃	-	US$ 4,162	N/A	US$ 4,162	
	Benchmark 2023-V3 Mortgage Trust	-	〃	-	US$ 4,119	N/A	US$ 4,119	
	Bank 2017 - BNK7	-	〃	-	US$ 4,063	N/A	US$ 4,063	
	MRCD 2019-Prkc Mortgage Trust	-	〃	-	US$ 4,025	N/A	US$ 4,025	
	Msbam 2016-C29	-	〃	-	US$ 4,010	N/A	US$ 4,010	
	Five 2023-V1 Mortgage Trust	-	〃	-	US$ 4,002	N/A	US$ 4,002	
	Citigroup Commercial Mortgage Trust 2014-GC21	-	〃	-	US$ 3,779	N/A	US$ 3,779	
	JPMCC 2017-JP7	-	〃	-	US$ 3,738	N/A	US$ 3,738	
	Bmw Vehicle Owner Trust 2023-A	-	〃	-	US$ 3,636	N/A	US$ 3,636	
	Citigroup Commercial Mortgage Trust 2019-Gc43	-	〃	-	US$ 3,214	N/A	US$ 3,214	
	BANK 2017-BNK5	-	〃	-	US$ 3,132	N/A	US$ 3,132	
	Honda Auto Receivables 2021 - 4 Owner Trust	-	〃	-	US$ 3,081	N/A	US$ 3,081	
	Bank 2019-Bnk22	-	〃	-	US$ 3,057	N/A	US$ 3,057	
	Msbam 2016-C31	-	〃	-	US$ 3,023	N/A	US$ 3,023	
	Commerce 2015-CCRE24 Mortgage Trust	-	〃	-	US$ 2,991	N/A	US$ 2,991	
	WFRBS Commercial Mortgage Trust 2014-C25	-	〃	-	US$ 2,932	N/A	US$ 2,932	
	Bmo 2023-C5 Mortgage Trust	-	〃	-	US$ 2,806	N/A	US$ 2,806	
	Sreit Commercial Mortgage Trust 2021-Mfp	-	〃	-	US$ 2,729	N/A	US$ 2,729	
	Benchmark 2019-B15 Mortgage Trust	-	〃	-	US$ 2,574	N/A	US$ 2,574	
	DCENT_23-2	-	〃	-	US$ 2,521	N/A	US$ 2,521	
	Toyota Auto Receivables 2023-C Owner Trust	-	〃	-	US$ 2,519	N/A	US$ 2,519	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Benchmark 2018-B3 Commercial Mortgage Trust	-	Financial assets at fair value through other comprehensive income	-	US$ 2,462	N/A	US$ 2,462	
	Ford Credit Auto Owner Trust 2020-Rev1	-	〃	-	US$ 2,415	N/A	US$ 2,415	
	JPMDB 2017-C7	-	〃	-	US$ 2,415	N/A	US$ 2,415	
	GS Mortgage Securities Trust 2015-GC32	-	〃	-	US$ 2,368	N/A	US$ 2,368	
	Citigroup Commercial Mortgage Trust 2016-C1	-	〃	-	US$ 2,304	N/A	US$ 2,304	
	Citigroup Commercial Mortgage Trust 2015-P1	-	〃	-	US$ 2,174	N/A	US$ 2,174	
	Wells Fargo Commercial Mortgage Trust 2020-C55	-	〃	-	US$ 2,110	N/A	US$ 2,110	
	Citigroup Commercial Mortgage Trust 2015-GC27	-	〃	-	US$ 2,107	N/A	US$ 2,107	
	Mhc Commercial Mortgage Trust 2021-Mhc	-	〃	-	US$ 2,090	N/A	US$ 2,090	
	Ford Credit Auto Owner Trust 2023-A	-	〃	-	US$ 1,992	N/A	US$ 1,992	
	Benchmark 2018-B4 Mortgage Trust	-	〃	-	US$ 1,930	N/A	US$ 1,930	
	Morgan Stanley Capital I Trust	-	〃	-	US$ 1,844	N/A	US$ 1,844	
	Dolp Trust 2021-NYC	-	〃	-	US$ 1,821	N/A	US$ 1,821	
	CGCMT 2017-P8 Mortgage Trust	-	〃	-	US$ 1,630	N/A	US$ 1,630	
	Wells Fargo Commercial Mortgage Trust 2015-C30	-	〃	-	US$ 1,574	N/A	US$ 1,574	
	JPMBB Commercial Mortgage Securities Trust 2015-C27	-	〃	-	US$ 1,527	N/A	US$ 1,527	
	Hyundai Auto Receivables Trust 2022-A	-	〃	-	US$ 1,524	N/A	US$ 1,524	
	Honda Auto Receivables 2023-1 Owner Trust	-	〃	-	US$ 1,518	N/A	US$ 1,518	
	UBS Commercial Mortgage Trust 2018-C11	-	〃	-	US$ 1,495	N/A	US$ 1,495	
	COMM 2020-CBM Mortgage Trust	-	〃	-	US$ 1,476	N/A	US$ 1,476	
	Morgan Stanley Capital I Trust 2021-L5	-	〃	-	US$ 1,369	N/A	US$ 1,369	
	Wells Fargo Commercial Mortgage Trust 2018-C44	-	〃	-	US$ 1,305	N/A	US$ 1,305	
	Wells Fargo Commercial Mortgage Trust 2015-C29	-	〃	-	US$ 1,243	N/A	US$ 1,243	
	Ford Credit Auto Owner Trust 2022-C	-	〃	-	US$ 1,242	N/A	US$ 1,242	
	Bank 2019-Bnk17	-	〃	-	US$ 1,237	N/A	US$ 1,237	
	GM Financial Consumer Automobile Receivables Trust 2023-1	-	〃	-	US$ 1,219	N/A	US$ 1,219	
	FORD CREDIT AUTO OWNER TRUST 2023-REV2	-	〃	-	US$ 1,124	N/A	US$ 1,124	
	American Express Credit Account Master Trust	-	〃	-	US$ 1,016	N/A	US$ 1,016	
	Morgan Stanley Capital I Trust 2015 - UBS8	-	〃	-	US$ 962	N/A	US$ 962	
	Wells Fargo Commercial Mortgage Trust 2016-LC24	-	〃	-	US$ 939	N/A	US$ 939	
	Ford Credit Auto Owner Trust 2022-A	-	〃	-	US$ 887	N/A	US$ 887	
	Bank 2023-Bnk45	-	〃	-	US$ 865	N/A	US$ 865	
	Nissan Auto Receivables 2023-A Owner Trust	-	〃	-	US$ 829	N/A	US$ 829	
	Toyota Auto Receivables 2021-D Owner Trust	-	〃	-	US$ 824	N/A	US$ 824	
	Benchmark 2021-B24 Mortgage Trust	-	〃	-	US$ 818	N/A	US$ 818	
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	〃	-	US$ 791	N/A	US$ 791	
	COMM Mortgage Trust Series 2015-LC19	-	〃	-	US$ 778	N/A	US$ 778	
	Honda Auto Receivables 2022-2 Owner Trust	-	〃	-	US$ 733	N/A	US$ 733	
	Citigroup Commercial Mortgage Trust 2015-GC35	-	〃	-	US$ 685	N/A	US$ 685	
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	〃	-	US$ 642	N/A	US$ 642	
	JPMCC Commercial Mortgage Securities Trust 2016 - JP3	-	〃	-	US$ 581	N/A	US$ 581	
	JPMBB Commercial Mortgage Securities Trust 2016-C1	-	〃	-	US$ 574	N/A	US$ 574	
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	〃	-	US$ 529	N/A	US$ 529	
	Ford Credit Auto Owner Trust 2022-B	-	〃	-	US$ 444	N/A	US$ 444	
	Honda Auto Receivables 2021-2 Owner Trust	-	〃	-	US$ 427	N/A	US$ 427	
	Citigroup Commercial Mortgage Trust 2018-C5	-	〃	-	US$ 425	N/A	US$ 425	
	Toyota Auto Receivables 2021-C Owner Trust	-	〃	-	US$ 387	N/A	US$ 387	
	Wells Fargo Commercial Mortgage Trust 2015-NXS3	-	〃	-	US$ 255	N/A	US$ 255	
	Benchmark 2019-B14 Mortgage Trust	-	〃	-	US$ 239	N/A	US$ 239	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	JPMCC 2015 - JP1	-	Financial assets at fair value through other comprehensive income	-	US$ 176	N/A	US$ 176	
	COMM 2015-CCRE22 Mortgage Trust	-	〃	-	US$ 151	N/A	US$ 151	
	GS Mortgage Securities Trust 2014-GC24	-	〃	-	US$ 149	N/A	US$ 149	
	Morgan Stanley Capital I Trust 2019-H6	-	〃	-	US$ 133	N/A	US$ 133	
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	〃	-	US$ 124	N/A	US$ 124	
	Morgan Stanley Capital I Trust 2019-H7	-	〃	-	US$ 120	N/A	US$ 120	
	JPMDB Commercial Mortgage Securities Trust 2019-COR6	-	〃	-	US$ 114	N/A	US$ 114	
	Morgan Stanley Capital I Trust 2018-H3	-	〃	-	US$ 104	N/A	US$ 104	
	Bank 2019-BNK23	-	〃	-	US$ 97	N/A	US$ 97	
	Citigroup Commercial Mortgage Trust 2014-GC23	-	〃	-	US$ 83	N/A	US$ 83	
	GS Mortgage Securities Trust 2014-GC26	-	〃	-	US$ 64	N/A	US$ 64	
	CF 2019-CF1 Mortgage Trust	-	〃	-	US$ 50	N/A	US$ 50	
	BBCMS Mortgage Trust 2020-C7	-	〃	-	US$ 37	N/A	US$ 37	
	Non-publicly traded equity investments							
	Primavera Capital Fund II L.P.	-	Financial assets at fair value through other comprehensive income	-	US$ 86,515	4	US$ 86,515	
VTAF II	Non-publicly traded equity investments							
	5V Technologies, Inc.	-	Financial assets at fair value through other comprehensive income	1	-	-	-	
	Aether Systems, Inc.	-	〃	1,085	-	20	-	
	Publicly traded stocks							
	Sentelic Corporation	-	Financial assets at fair value through other comprehensive income	913	US$ 2,757	3	US$ 2,757	
VTAF III	Non-publicly traded equity investments							
	LiquidLeds Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US$ 800	14	US$ 800	
	Mutual-Pak	-	〃	1,701	US$ 337	17	US$ 337	
	Neoconix, Inc.	-	〃	4,147	US$ 174	-	US$ 174	
Emerging Fund	Convertible bonds							
	Movandi Corporation	-	Financial assets at fair value through Profit or Loss	-	US$ 4,168	N/A	US$ 4,168	
	Encharge AI, Inc.	-	〃	-	US$ 3,099	N/A	US$ 3,099	
	Non-publicly traded equity investments							
	Astera Labs, Inc.	-	Financial assets at fair value through other comprehensive income	1,487	US$ 9,680	-	US$ 9,680	
	Ayar Labs, Inc.	-	〃	345	US$ 5,000	1	US$ 5,000	
	Ethernovia Inc.	-	〃	1,021	US$ 5,000	3	US$ 5,000	
	Empower Semiconductor, Inc.	-	〃	868	US$ 5,000	3	US$ 5,000	
	Lyte AI, Inc.	-	〃	1,128	US$ 5,000	4	US$ 5,000	
	EdgeQ, Inc.	-	〃	1,176	US$ 4,771	2	US$ 4,771	
	SiMa Technologies, Inc.	-	〃	564	US$ 4,000	1	US$ 4,000	
	NeuReality Ltd.	-	〃	122	US$ 3,194	2	US$ 3,194	
	Kinara, Inc.	-	〃	2,015	US$ 3,000	2	US$ 3,000	
	xMEMS Labs, Inc.	-	〃	3,000	US$ 3,000	3	US$ 3,000	
	RiVos, Inc.	-	〃	1,455	US$ 2,833	1	US$ 2,833	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Development	Convertible preferred stocks							
	IMS Nanofabrication Global, LLC	-	Financial assets at fair value through Profit or Loss	-	US$ 432,795	10	US$ 432,795	
Growth Fund	Non-publicly traded equity investments							
	Astera Labs, Inc.	-	Financial assets at fair value through other comprehensive income	637	US$ 4,146	-	US$ 4,146	
	CNEX Labs, Inc.	-	〃	33	US$ 133	-	US$ 133	
	Publicly traded stocks							
	Marvell Technology Group Ltd.	-	Financial assets at fair value through other comprehensive income	30	US$ 1,786	-	US$ 1,786	

(Concluded)

TABLE 4

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES ACQUIRED AND DISPOSED OF AT COSTS OR PRICES OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC	Non-publicly traded equity investments													
	TSMC Arizona	Investments accounted for using equity method	-	-	1,270	$ 25,639,079	9,230	$ 292,649,510	-	$ -	$ -	$ -	10,500	$ 298,604,975
	JASM	〃	-	-	1,020	23,330,125	1,249	28,062,957	-	-	-	-	2,269	47,087,140
	ESMC	〃	-	-	-	-	100	4,814,293 (Note 2)	-	-	-	-	100	4,768,013
	Emerging Fund	〃	-	-	-	1,760,885	-	641,536	-	-	(244,376)	-	-	1,901,742
	Commercial paper													
	Cathay Financial Holding Co., Ltd.	Financial assets at amortized cost	-	-	-	-	1,687	16,771,708	990	9,900,000	9,900,000	-	697	6,924,665
	Nan Ya Plastics Corporation	〃	-	-	450	4,476,301	1,850	18,413,604	1,700	17,000,000	17,000,000	-	600	5,976,677
	China Steel Corporation	〃	-	-	-	-	200	1,985,566	-	-	-	-	200	1,985,094
	Formosa Plastics Corporation	〃	-	-	200	1,990,459	100	994,402	200	2,000,000	2,000,000	-	100	996,260
	CPC Corporation, Taiwan	〃	-	-	750	7,458,936	150	1,491,352	800	8,000,000	8,000,000	-	100	995,553
	Formosa Chemicals & Fibre Corporation	〃	-	-	250	2,485,666	600	5,969,662	750	7,500,000	7,500,000	-	100	994,540
	Taiwan Power Company	〃	-	-	2,950	29,335,729	550	5,473,392	3,450	34,500,000	34,500,000	-	50	498,916
	Formosa Petrochemical Corporation	〃	-	-	300	2,985,385	-	-	300	3,000,000	3,000,000	-	-	-
TSMC Partners	Fund													
	Matter Venture Partners Fund I, L.P. (Note 3)	Financial assets at fair value through Profit or Loss	-	-	-	US$ -	-	US$ 4,200	-	US$ -	US$ -	US$ -	-	US$ 3,587
	Publicly traded stocks													
	ARM Holdings plc	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	1,961	US$ 100,000	-	US$ -	US$ -	US$ -	1,961	US$ 147,353
TSMC Global	Corporate bond													
	Bank of America Corporation	Financial assets at fair value through other comprehensive income	-	-	-	US$ 76,626	-	US$ 32,499	-	US$ 25,548	US$ 25,685	US$ (137)	-	US$ 86,588
	Morgan Stanley	〃	-	-	-	US$ 83,242	-	US$ 19,579	-	US$ 28,500	US$ 28,612	US$ (112)	-	US$ 76,777
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 51,439	-	US$ 19,457	-	US$ 14,080	US$ 14,166	US$ (86)	-	US$ 58,554
	Wells Fargo & Company	〃	-	-	-	US$ 59,735	-	US$ 11,895	-	US$ 14,783	US$ 14,824	US$ (41)	-	US$ 58,351
	JPMorgan Chase & Co.	〃	-	-	-	US$ 50,629	-	US$ 24,942	-	US$ 19,193	US$ 19,343	US$ (150)	-	US$ 58,153
	Citigroup Inc.	〃	-	-	-	US$ 61,493	-	US$ 18,408	-	US$ 31,203	US$ 31,317	US$ (114)	-	US$ 50,436
	Sumitomo Mitsui Financial Group, Inc.	〃	-	-	-	US$ 27,658	-	US$ 22,091	-	US$ 5,907	US$ 6,079	US$ (172)	-	US$ 45,172

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	Mitsubishi UFJ Financial Group, Inc.	Financial assets at fair value through other comprehensive income	-	-	-	US$ 32,949	-	US$ 14,983	-	US$ 12,237	US$ 12,291	US$ (54)	-	US$ 36,903
	Barclays PLC	〃	-	-	-	US$ 11,263	-	US$ 26,220	-	US$ 3,124	US$ 3,150	US$ (26)	-	US$ 35,277
	HSBC Holdings plc	〃	-	-	-	US$ 32,402	-	US$ 7,361	-	US$ 10,731	US$ 10,586	US$ 145	-	US$ 30,124
	CVS Health Corporation	〃	-	-	-	US$ 4,750	-	US$ 26,311	-	US$ 7,017	US$ 7,086	US$ (69)	-	US$ 24,591
	Lloyds Banking Group plc	〃	-	-	-	US$ 10,533	-	US$ 13,842	-	US$ 717	US$ 729	US$ (12)	-	US$ 24,131
	BPCE SA	〃	-	-	-	US$ 14,691	-	US$ 14,478	-	US$ 5,840	US$ 5,850	US$ (10)	-	US$ 23,875
	Oracle Corporation	〃	-	-	-	US$ 21,865	-	US$ 15,752	-	US$ 14,576	US$ 14,653	US$ (77)	-	US$ 23,751
	Capital One Financial Corporation	〃	-	-	-	US$ 14,125	-	US$ 11,035	-	US$ 4,232	US$ 4,259	US$ (27)	-	US$ 21,572
	Credit Agricole SA London Branch	〃	-	-	-	US$ 11,611	-	US$ 10,744	-	US$ 2,624	US$ 2,627	US$ (3)	-	US$ 20,395
	AIG Global Funding	〃	-	-	-	US$ 8,209	-	US$ 12,370	-	US$ 2,660	US$ 2,699	US$ (39)	-	US$ 18,428
	Metropolitan Life Global Funding I	〃	-	-	-	US$ 24,408	-	US$ 4,577	-	US$ 11,143	US$ 11,199	US$ (56)	-	US$ 18,299
	ABN AMRO Bank N.V.	〃	-	-	-	US$ -	-	US$ 17,900	-	US$ -	US$ -	US$ -	-	US$ 18,247
	Danske Bank A/S	〃	-	-	-	US$ 6,149	-	US$ 17,235	-	US$ 7,452	US$ 7,260	US$ 192	-	US$ 16,698
	The Bank of New York Mellon Corporation	〃	-	-	-	US$ 11,282	-	US$ 9,795	-	US$ 5,326	US$ 5,250	US$ 76	-	US$ 16,064
	Amgen Inc.	〃	-	-	-	US$ 310	-	US$ 18,377	-	US$ 5,611	US$ 5,568	US$ 43	-	US$ 13,330
	AerCap Ireland Capital Designated Activity Company	〃	-	-	-	US$ -	-	US$ 12,899	-	US$ -	US$ -	US$ -	-	US$ 13,278
	Pfizer Investment Enterprises Pte. Ltd.	〃	-	-	-	US$ -	-	US$ 12,584	-	US$ -	US$ -	US$ -	-	US$ 12,590
	ONEOK, Inc.	〃	-	-	-	US$ -	-	US$ 10,733	-	US$ -	US$ -	US$ -	-	US$ 11,048
	Credit Suisse AG, New York Branch	〃	-	-	-	US$ 12,688	-	US$ -	-	US$ 12,569	US$ 14,369	US$ (1,800)	-	US$ -
	Bank of America Corporation	Financial assets at amortized cost	-	-	-	US$ 324,757	-	US$ 669,940	-	US$ 202,000	US$ 201,456	US$ 544		US$ 799,449
	Wells Fargo & Company	〃	-	-	-	US$ 274,713	-	US$ 499,184	-	US$ 159,000	US$ 158,626	US$ 374		US$ 619,830
	Morgan Stanley	〃	-	-	-	US$ 60,207	-	US$ 502,595	-	US$ -	US$ -	US$ -		US$ 566,880
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 440,655	-	US$ 261,083	-	US$ 270,500	US$ 270,500	US$ -		US$ 432,811
	JPMorgan Chase & Co.	〃	-	-	-	US$ 280,213	-	US$ 426,264	-	US$ 322,000	US$ 321,685	US$ 315		US$ 391,868
	Citigroup Inc.	〃	-	-	-	US$ 174,540	-	US$ 232,386	-	US$ 159,000	US$ 158,612	US$ 388		US$ 251,481
	Citigroup Global Markets Inc.	〃	-	-	-	US$ 349,886	-	US$ -	-	US$ 200,000	US$ 200,000	US$ -		US$ 149,951
	Citigroup Global Markets Holdings Inc.	〃	-	-	-	US$ 149,951	-	US$ -	-	US$ 50,000	US$ 50,000	US$ -		US$ 99,968
	Goldman Sachs Finance Corp International Ltd	〃	-	-	-	US$ 149,870	-	US$ -	-	US$ 50,000	US$ 50,000	US$ -		US$ 99,905
	Citigroup	〃	-	-	-	US$ -	-	US$ 20,000	-	US$ -	US$ -	US$ -		US$ 19,981
	Jpmorgan LLC	〃	-	-	-	US$ 49,984	-	US$ -	-	US$ 50,000	US$ 50,000	US$ -		US$ -
	Agency mortgage-backed securities													
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	Financial assets at fair value through other comprehensive income	-	-	-	US$ 463,645	-	US$ 258,497	-	US$ 71,635	US$ 72,541	US$ (906)	-	US$ 658,944
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ 284,933	-	US$ 121,863	-	US$ 60,277	US$ 60,692	US$ (415)	-	US$ 350,328
	Government National Mortgage Association	〃	-	-	-	US$ 175,067	-	US$ 70,079	-	US$ 23,182	US$ 23,871	US$ (689)	-	US$ 225,310

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	Government bond/Agency bonds													
	United States Department of The Treasury	Financial assets at fair value through other comprehensive income	-	-	-	US$ 613,603	-	US$ 263,657	-	US$ 177,248	US$ 181,715	US$ (4,467)	-	US$ 718,479
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 9,993	-	US$ 2,994	US$ 3,000	US$ (6)	-	US$ 6,995
	Federal Home Loan Banks	Financial assets at amortized cost	-	-	-	US$ -	-	US$ 225,000	-	US$ -	US$ -	US$ -		US$ 225,000
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 160,000	-	US$ 25,000	US$ 25,000	US$ -		US$ 135,000
	United States Department of The Treasury	〃	-	-	-	US$ -	-	US$ 88,826	-	US$ -	US$ -	US$ -		US$ 88,940
	Asset-backed securities													
	BX Trust 2022-LBA6	Financial assets at fair value through other comprehensive income	-	-	-	US$ 9,655	-	US$ -	-	US$ 9,794	US$ 10,000	US$ (206)	-	US$ -
TSMC Development	Convertible preferred stocks													
	IMS Nanofabrication Global, LLC	Financial assets at fair value through Profit or Loss	-	-	-	US$ -	-	US$ 432,795	-	US$ -	US$ -	US$ -	-	US$ 432,795

Note 1: The ending balance includes the realized gain/loss on equity investment, the amortization of premium/discount on bonds investments and other related adjustment.

Note 2: Includes a prepayment for investment of EUR 139,930 thousand.

Note 3: TSMC Partners expects to invest US$ 20,000 thousand in Matter Venture Partners Fund I based on the resolution of the board of directors. As of the end of this quarter, US$ 4,200 thousand has been remitted.

(Concluded)

TABLE 5

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

ACQUISITION OF INDIVIDUAL REAL ESTATE PROPERTIES AT COSTS OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate	February 14, 2023 (Note)	US$ 1,881,000 (Note)	Based on the terms in the purchase order	65 counterparties(Note), including: ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Desiccant Technology Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate	May 9, 2023 (Note)	US$ 366,000 (Note)	Based on the terms in the purchase order	65 counterparties(Note), including: ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Desiccant Technology Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc.								
	Real estate	August 8, 2023 (Note)	US$4,363,000 (Note)	Based on the terms in the purchase order	90 counterparties(Note), including: ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. All-Bau AG + Co. Gewerbepark KG	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Areal Holding Gesellschaft mbH, Dresden Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chang Chun Petrochemical Co., Ltd. Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. F6 Cigarettenfabrik GmbH & Co. KG Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kedge Construction Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Li Jin Engineering Co., Ltd Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation TASA Construction Corporation								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Taiwan Puritic Corp. Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Wei Shung Technology Corporation Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.								
	Real estate	November 14, 2023 (Note)	US$ 464,000 (Note)	Based on the terms in the purchase order	27 counterparties(Note), including: Hsinchu Science Park Bureau, Ministry of Science and Technology Southern Taiwan Science Park Bureau, Ministry of Science and Technology	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

Note: The disclosures are expected information based on the capital appropriation approved by the Board of Directors (Right-of-use assets are included). The actual information shall be subject to the final purchase order of TSMC.

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

TOTAL PURCHASES FROM OR SALES TO RELATED PARTIES OF AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Transaction Details				Abnormal Transaction		Notes/Accounts Payable or Receivable		Note
			Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)	% to Total	
TSMC	TSMC North America	Subsidiary	Sales	$ 1,459,559,406	66	Net 30 days from invoice date (Note)	-	-	$ 154,789,324	82	
	JASM	Subsidiary	Sales	356,150	-	Net 30 days from the end of the month of when invoice is issued	-	-	-	-	
	TSMC Arizona	Subsidiary	Sales	145,150	-	Net 30 days from the end of the month of when invoice is issued	-	-	-	-	
	GUC	Associate	Sales	8,898,237	-	Net 30 days from invoice date	-	-	471,728	-	
	TSMC Nanjing	Subsidiary	Purchases	62,252,516	35	Net 30 days from the end of the month of when invoice is issued	-	-	(5,064,282)	9	
	TSMC China	Subsidiary	Purchases	25,643,202	14	Net 30 days from the end of the month of when invoice is issued	-	-	(2,312,769)	4	
	TSMC Washington	Indirect subsidiary	Purchases	8,302,902	5	Net 30 days from the end of the month of when invoice is issued	-	-	(199,158)	-	
	SSMC	Associate	Purchases	3,493,671	2	Net 30 days from the end of the month of when invoice is issued	-	-	(457,348)	1	
	VIS	Associate	Purchases	1,068,535	1	Net 30 days from the end of the month of when invoice is issued	-	-	(66,653)	-	
TSMC North America	GUC	Associate of TSMC	Sales	3,859,301 (US$ 124,986)	-	Net 30 days from invoice date	-	-	43,091 (US$ 1,401)	-	
VisEra Tech	Xintec	Associate of TSMC	Sales	642,113	9	Net 60 days from the end of the month of when invoice is issued	-	-	109,632	12	

Note: The tenor is determined by the payment terms granted to its clients by TSMC North America.

TABLE 7

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
December 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue		Amounts Received in Subsequent Period	Allowance for Bad Debts
					Amount	Action Taken		
TSMC	TSMC North America	Subsidiary	$ 158,537,008	41	$ 114,137	-	$ 81,336,750	$ -
	JASM	Subsidiary	416,139	Note 2	-	-	-	-
	GUC	Associate	471,728	36	-	-	-	-
TSMC North America	TSMC	Parent company	116,051 (US$ 3,774)	Note 2	-	-	-	-
TSMC JDC	TSMC	Parent company	142,303 (JPY 649,192)	Note 2	-	-	-	-
TSMC China	TSMC	Parent company	2,312,769 (RMB 533,456)	33	-	-	-	-
	TSMC Nanjing	The same parent company	38,395,507 (RMB 8,856,278)	Note 2	-	-	-	-
TSMC Nanjing	TSMC	Parent company	5,064,282 (RMB 1,168,110)	27	-	-	-	-
VisEra Tech	Xintec	Associate of TSMC	109,632	63	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	483,851 (US$ 15,737)	Note 2	-	-	-	-
TSMC Washington	TSMC	The ultimate parent of the Company	199,158 (US$ 6,477)	23	-	-	-	-
	TSMC Development	Parent company	342,004 (US$ 11,123)	Note 2	-	-	-	-

Note 1: The calculation of turnover days excludes other receivables from related parties.

Note 2: The ending balance is primarily consisted of other receivables, which is not applicable for the calculation of turnover days.

TABLE 8

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INTERCOMPANY RELATIONSHIPS AND SIGNIFICANT INTERCOMPANY TRANSACTIONS
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars)

No.	Company Name	Counterparty	Nature of Relationship (Note 1)	Intercompany Transactions			
				Financial Statements Item	Amount	Terms (Note 2)	Percentage of Consolidated Net Revenue or Total Assets
0	TSMC	TSMC North America	1	Net revenue from sale of goods	$ 1,459,559,406	-	68%
				Receivables from related parties	154,789,324	-	3%
				Other receivables from related parties	3,747,684	-	-
				Accrued expenses and other current liabilities	101,055,004	-	2%
				Other noncurrent liabilities	134,052,101	-	2%
		JASM	1	Other noncurrent assets	12,132,766	-	-
		TSMC China	1	Purchases	25,643,202	-	1%
		TSMC Nanjing	1	Purchases	62,252,516	-	3%
				Payables to related parties	5,064,282	-	-
		TSMC Technology	1	Research and development expenses	3,855,940	-	-
		TSMC Washington	1	Purchases	8,302,902	-	-
1	TSMC China	TSMC Nanjing	3	Other receivables from related parties	38,395,507	-	1%

Note 1: No. 1 represents the transactions from parent company to subsidiary.

No. 3 represents the transactions between subsidiaries.

Note 2: The sales prices and payment terms of intercompany sales are not significantly different from those to third parties. For other intercompany transactions, prices and terms are determined in accordance with mutual agreements.

TABLE 9

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEES OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2023			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2023 (Foreign Currencies in Thousands)	December 31, 2022 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC	TSMC Global	Tortola, British Virgin Islands	Investment activities	$ 355,162,309	$ 355,162,309	11	100	$ 441,225,883	$ 24,922,961	$ 24,922,961	Subsidiary
	TSMC Arizona	Phoenix, Arizona, U.S.A.	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	329,665,310	37,015,800	10,500	100	298,604,975	(10,924,639)	(10,924,639)	Subsidiary
	TSMC Partners	Tortola, British Virgin Islands	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities	31,456,130	31,456,130	988,268	100	68,143,719	2,776,792	2,776,792	Subsidiary
	JASM	Kumamoto, Japan	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	52,630,042	24,567,085	2,269	71	47,087,140	(2,965,675)	(2,120,037)	Subsidiary
	VIS	Hsin-Chu, Taiwan	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	10,180,677	464,223	28	13,590,430	7,370,074	2,082,598	Associate
	VisEra Tech	Hsin-Chu, Taiwan	Research, design, development, manufacturing, sales, packaging and test of color filter	4,224,082	4,224,082	213,619	67	11,261,961	356,080	240,749	Subsidiary
	SSMC	Singapore	Manufacturing and sales of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	9,728,801	2,040,560	791,533	Associate
	TSMC North America	San Jose, California, U.S.A	Sales and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	6,278,751	836,066	836,066	Subsidiary
	ESMC	Dresden, Germany	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	4,814,293 (Note 4)	-	100	100	4,768,013	(17,570)	(17,570)	Subsidiary
	Xintec	Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	3,759,701	1,375,774	564,191	Associate
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	2,537,706	3,507,885	1,222,121	Associate
	Emerging Fund	Cayman Islands	Investing in technology start-up companies	1,666,585	1,269,425	-	99.9	1,901,742	20,313	20,293	Subsidiary
	TSMC 3DIC	Yokohama, Japan	Engineering support activities	1,144,356	1,144,356	49	100	1,224,449	122,786	122,786	Subsidiary
	TSMC Europe	Amsterdam, the Netherlands	Customer service and supporting activities	15,749	15,749	-	100	592,499	42,865	42,865	Subsidiary
	TSMC JDC	Yokohama, Japan	Engineering support activities	410,680	410,680	15	100	394,191	40,787	40,787	Subsidiary
	VTAF III	Cayman Islands	Investing in technology start-up companies	1,242,679	1,239,621	-	98	257,540	6,619	6,487	Subsidiary
	TSMC Japan	Yokohama, Japan	Customer service and supporting activities	83,760	83,760	6	100	130,403	4,084	4,084	Subsidiary
	VTAF II	Cayman Islands	Investing in technology start-up companies	260,300	260,300	-	98	117,662	429	421	Subsidiary
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	80	100	44,599	1,792	1,792	Subsidiary
TSMC Partners	TSMC Development	Delaware, U.S.A	Investing in companies involved in semiconductor manufacturing	18,046,607 (US$ 586,939)	18,046,607 (US$ 586,939)	-	100	37,841,815 (US$1,230,748)	1,191,778 (US$ 38,760)	Note 2	Subsidiary
	TSMC Technology	Delaware, U.S.A	Engineering support activities	439,129 (US$ 14,282)	439,129 (US$ 14,282)	-	100	1,126,524 (US$ 36,638)	130,938 (US$ 4,284)	Note 2	Subsidiary
	TSMC Canada	Ontario, Canada	Engineering support activities	70,718 (US$ 2,300)	70,718 (US$ 2,300)	2,300	100	378,925 (US$ 12,324)	49,846 (US$ 1,596)	Note 2	Subsidiary

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2023			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2023 (Foreign Currencies in Thousands)	December 31, 2022 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
VTAF III	Growth Fund	Cayman Islands	Investing in technology start-up companies	$ 70,578 (US$ 2,295)	$ 67,504 (US$ 2,195)	-	100	$ 188,990 (US$ 6,147)	$ (996) (US$ (32))	Note 2	Subsidiary
	Mutual-Pak	New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	Note 3	48,991 (US$ 1,593)	Note 3	Note 3	Note 3	Note 3	Note 2	Note 3
TSMC Development	TSMC Washington	Washington, U.S.A	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	-	-	293,637	100	5,829,197 (US$ 189,586)	171,187 (US$ 6,053)	Note 2	Subsidiary

Note 1: The share of profits/losses of investee includes the effect of unrealized gross profit on intercompany transactions.

Note 2: The share of profits/losses of the investee company is not reflected herein as such amount is already included in the share of profits/losses of the investor company.

Note 3: Due to the decrease in shareholding to 17%, the Company consequently ceased to have significant influence over Mutual-Pak. Therefore, the investment in Mutual-Pak was classified as financial assets at FVTOCI starting November 2023.

Note 4: Includes a prepayment for investment of EUR 139,930 thousand.

(Concluded)

TABLE 10

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR YEAR ENDED DECEMBER 31, 2023

(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investee Company	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Accumulated Outflow of Investment from Taiwan as of January 1, 2023 (US$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2023 (US$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of Balance as of December 31, 2023	Accumulated Inward Remittance of Earnings as of December 31, 2023
					Outflow (US$ in Thousands)	Inflow						
TSMC China	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	$ 18,939,667 (RMB 4,502,080)	(Note 1)	$ 18,939,667 (US$ 596,000)	$ -	$ -	$ 18,939,667 (US$ 596,000)	$ 10,118,593	100%	$ 10,210,745 (Note 2)	$ 95,419,097	$ -
TSMC Nanjing	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	30,521,412 (RMB 6,650,119)	(Note 1)	30,521,412 (US$ 1,000,000)	-	-	30,521,412 (US$ 1,000,000)	21,755,071	100%	21,762,378 (Note 2)	87,625,830	-

Accumulated Investment in Mainland China as of December 31, 2023 (US$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US$ in Thousands)	Upper Limit on Investment
$ 49,461,079 (US$ 1,596,000)	$ 119,412,667 (US$ 3,596,000)	$ 2,089,957,708 (Note 3)

Note 1: TSMC directly invested US$596,000 thousand in TSMC China and US$1,000,000 thousands in TSMC Nanjing.

Note 2: Amount was recognized based on the audited financial statements.

Note 3: The upper limit on investment in mainland China is determined by sixty percent (60%) of the Company's consolidated net worth.

TABLE 11

Taiwan Semiconductor Manufacturing Company Limited

INFORMATION ON MAJOR SHAREHOLDERS
DECEMBER 31, 2023

Shareholders (Note 1)	Shares	
	Total Shares Owned	Ownership Percentage (Note 2)
ADR-Taiwan Semiconductor Manufacturing Company Ltd.	5,315,513,063	20.50%
National Development Fund, Executive Yuan	1,653,709,980	6.38%

Note 1: Major shareholders shows the list of all shareholders with ownership of 5 percent or greater.

Note 2: The calculation of ownership percentage is rounded to two decimal places.

Taiwan Semiconductor Manufacturing Company Limited

Parent Company Only Financial Statements for the Years Ended December 31, 2023 and 2022 and Independent Auditors' Report

Deloitte.

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INDEPENDENT AUDITORS' REPORT

The Board of Directors and Shareholders
Taiwan Semiconductor Manufacturing Company Limited

Opinion

We have audited the accompanying parent company only financial statements of Taiwan Semiconductor Manufacturing Company Limited (the "Company"), which comprise the parent company only balance sheets as of December 31, 2023 and 2022, and the parent company only statements of comprehensive income, changes in equity and cash flows for the years then ended, and notes to the parent company only financial statements, including material accounting policy information.

In our opinion, the accompanying parent company only financial statements present fairly, in all material respects, the accompanying parent company only financial position of the Company as of December 31, 2023 and 2022, and its parent company only financial performance and its parent company only cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Financial Statement Audit and Attestation Engagements of Certified Public Accountants and the Standards on Auditing of the Republic of China. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Parent Company Only Financial Statements section of our report. We are independent of the Company in accordance with The Norm of Professional Ethics for Certified Public Accountant of the Republic of China, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the parent company only financial statements for the year ended December 31, 2023. These matters were addressed in the context of our audit of the parent company only financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter for the Company's parent company only financial statements for the year ended December 31, 2023 is stated as follows:

<u>Property, plant and equipment (PP&E) – commencement of depreciation related to PP&E classified as equipment under installation and construction in progress (EUI/CIP)</u>

Refer to Notes 4, 5 and 13 to the parent company only financial statements.

The Company's evaluation of when to commence depreciation of EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner. Changes in these assumptions could have a significant impact on when depreciation is recognized.

Given the subjectivity in determining the date to commence depreciation of EUI/CIP, performing audit procedures to evaluate the reasonableness of the Company's judgments and assumptions required a high degree of auditor judgment. Consequently, the validity of commencement of depreciation related to PP&E classified as EUI/CIP is identified as a key audit matter.

Our audit procedures related to the evaluation of when to commence depreciation of EUI/CIP included the following, among others:

1. We read the Company's policy and understood the criteria used to determine when to commence depreciation.

2. We tested the effectiveness of the controls over the evaluation of when to commence depreciation of EUI/CIP.

3. We sampled the year-end balance of EUI/CIP and performed the following for each selection:

   a. Evaluated whether the selection did not meet the criteria specified by the Company for commencement of depreciation.

   b. Observed the assets and evaluated their status.

4. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation during the year.

5. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation subsequent to year end.

Responsibilities of Management and Those Charged with Governance for the Parent Company Only Financial Statements

Management is responsible for the preparation and fair presentation of the parent company only financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers, and for such internal control as management determines is necessary to enable the preparation of parent company only financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the parent company only financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit and Risk Committee) are responsible for overseeing the Company's financial reporting process.

Auditors' Responsibilities for the Audit of the Parent Company Only Financial Statements

Our objectives are to obtain reasonable assurance about whether the parent company only financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the Standards on Auditing of the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these parent company only financial statements.

As part of an audit in accordance with the Standards on Auditing of the Republic of China, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the parent company only financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the parent company only financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.

5. Evaluate the overall presentation, structure and content of the parent company only financial statements, including the disclosures, and whether the parent company only financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the parent company only financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the parent company only financial statements for the year ended December 31, 2023 and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audits resulting in this independent auditors' report are Shih Tsung Wu and Shang Chih Lin.

Shih Tsung Wu Shang-Chih Lin

Deloitte & Touche
Taipei, Taiwan
Republic of China

February 6, 2024

<u>*Notice to Readers*</u>

The accompanying financial statements are intended only to present the financial position, financial performance and cash flows in accordance with accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such financial statements are those generally applied in the Republic of China.

For the convenience of readers, the independent auditors' report and the accompanying financial statements have been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors' report and financial statements shall prevail.

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY BALANCE SHEETS
(In Thousands of New Taiwan Dollars)

	December 31, 2023		December 31, 2022	
	Amount	%	Amount	%
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	$ 718,703,712	15	$ 628,875,897	14
Financial assets at fair value through profit or loss (Note 7)	624,685	-	552,255	-
Financial assets at amortized cost (Note 8)	18,371,705	-	48,732,476	1
Notes and accounts receivable, net (Note 10)	33,557,279	1	41,311,836	1
Receivables from related parties (Note 30)	155,261,877	3	173,044,812	4
Other receivables from related parties (Note 30)	4,360,322	-	6,357,925	-
Inventories (Notes 5 and 11)	238,259,195	5	208,282,895	5
Other financial assets	4,321,083	-	2,801,253	-
Other current assets	12,328,706	-	8,591,040	-
Total current assets	1,185,788,564	24	1,118,550,389	25
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income	960,950	-	1,014,741	-
Investments accounted for using equity method (Note 12)	1,094,695,092	23	727,947,169	16
Property, plant and equipment (Notes 5 and 13)	2,453,465,322	50	2,432,675,050	55
Right-of-use assets (Notes 5 and 14)	37,872,705	1	39,051,427	1
Intangible assets (Notes 5 and 15)	17,684,064	-	21,456,104	1
Deferred income tax assets (Notes 5 and 23)	62,356,061	1	67,708,061	2
Refundable deposits	3,433,404	-	2,095,656	-
Other noncurrent assets (Note 30)	17,823,122	1	11,920,467	-
Total noncurrent assets	3,688,290,720	76	3,303,868,675	75
TOTAL	$ 4,874,079,284	100	$ 4,422,419,064	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Financial liabilities at fair value through profit or loss (Note 7)	$ 25,673	-	$ 17,468	-
Hedging financial liabilities (Notes 9 and 27)	27,290,400	1	-	-
Accounts payable	47,643,493	1	48,732,542	1
Payables to related parties (Note 30)	10,119,695	-	10,051,044	-
Salary and bonus payable	27,754,742	1	31,308,620	1
Accrued profit sharing bonus to employees and compensation to directors (Note 26)	50,642,488	1	61,392,175	1
Payables to contractors and equipment suppliers	84,146,173	2	200,046,018	5
Cash dividends payable (Note 18)	168,558,461	3	142,617,093	3
Income tax payable (Notes 5 and 23)	98,564,981	2	120,077,567	3
Long-term liabilities - current portion (Notes 16 and 27)	6,997,710	-	18,100,000	-
Accrued expenses and other current liabilities (Notes 5, 14, 19, 27 and 30)	241,858,508	5	266,903,073	6
Total current liabilities	763,602,324	16	899,245,600	20
NONCURRENT LIABILITIES				
Bonds payable (Notes 16 and 27)	439,869,855	9	361,130,474	8
Deferred income tax liabilities (Notes 5 and 23)	-	-	908,273	-
Lease liabilities (Notes 5, 14 and 27)	26,959,435	-	27,593,900	1
Net defined benefit liability (Note 17)	9,257,224	-	9,321,091	-
Guarantee deposits	915,344	-	885,273	-
Others (Notes 19 and 30)	174,561,475	4	177,681,258	4
Total noncurrent liabilities	651,563,333	13	577,520,269	13
Total liabilities	1,415,165,657	29	1,476,765,869	33
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 18)	259,320,710	5	259,303,805	6
Capital surplus (Note 18)	69,876,381	2	69,330,328	2
Retained earnings (Note 18)				
Appropriated as legal capital reserve	311,146,899	6	311,146,899	7
Appropriated as special capital reserve	-	-	3,154,310	-
Unappropriated earnings	2,846,883,893	59	2,323,223,479	53
	3,158,030,792	65	2,637,524,688	60
Others (Note 18)	(28,314,256)	(1)	(20,505,626)	(1)
Total equity	3,458,913,627	71	2,945,653,195	67
TOTAL	$ 4,874,079,284	100	$ 4,422,419,064	100

The accompanying notes are an integral part of the parent company only financial statements.

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2023		2022	
	Amount	**%**	**Amount**	**%**
NET REVENUE (Notes 5, 19 and 30)	$ 2,153,285,095	100	$ 2,252,320,561	100
COST OF REVENUE (Notes 5, 11, 26 and 30)	1,022,660,164	47	951,927,673	42
GROSS PROFIT	1,130,624,931	53	1,300,392,888	58
OPERATING EXPENSES (Notes 5, 26 and 30)				
Research and development	178,725,098	9	160,813,633	7
General and administrative	39,890,037	2	42,764,642	2
Marketing	5,118,396	-	6,059,649	-
Total operating expenses	223,733,531	11	209,637,924	9
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 13 and 26)	481,455	-	(8,275)	(1)
INCOME FROM OPERATIONS	907,372,855	42	1,090,746,689	48
NON-OPERATING INCOME AND EXPENSES				
Share of profits of subsidiaries and associates (Note 12)	52,587,403	2	42,415,408	2
Interest income (Note 20)	17,825,551	1	5,957,864	1
Other income	230,801	-	887,958	-
Foreign exchange gain (loss), net (Note 32)	(3,238,713)	-	853,022	-
Finance costs (Note 21)	(4,600,793)	-	(3,240,406)	-
Other gains and losses, net (Note 22)	7,594,132	-	3,053,281	-
Total non-operating income and expenses	70,398,381	3	49,927,127	3
INCOME BEFORE INCOME TAX	977,771,236	45	1,140,673,816	51
INCOME TAX EXPENSE (Notes 5 and 23)	139,273,572	6	124,143,567	6
NET INCOME	838,497,664	39	1,016,530,249	45
OTHER COMPREHENSIVE INCOME (LOSS) (Notes 5, 12, 17, 18 and 23)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	(623,356)	-	(823,060)	-
Unrealized gain/(loss) on investments in equity instruments at fair value through other comprehensive income	(53,665)	-	18,979	-
Gain on hedging instruments	39,898	-	-	-
Share of other comprehensive gain/(loss) of subsidiaries and associates	2,049,357	-	(127,903)	-
Income tax benefit related to items that will not be reclassified subsequently	124,646	-	733,956	-
	1,536,880	-	(198,028)	-

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2023 Amount	2023 %	2022 Amount	2022 %
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	$ (13,645,829)	-	$ 51,030,928	2
Share of other comprehensive gain/(loss) of subsidiaries and associates	4,120,827	-	(8,244,295)	-
Income tax benefit related to items that may be reclassified subsequently	-	-	6,036	-
	(9,525,002)	-	42,792,669	2
Other comprehensive income (loss), net of income tax	(7,988,122)	-	42,594,641	2
TOTAL COMPREHENSIVE INCOME	$ 830,509,542	39	$ 1,059,124,890	47
EARNINGS PER SHARE (NT$, Note 24)				
Basic earnings per share	$ 32.34		$ 39.20	
Diluted earnings per share	$ 32.34		$ 39.20	

The accompanying notes are an integral part of the parent company only financial statements. (Concluded)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CHANGES IN EQUITY
(In Thousands of New Taiwan Dollars)

	Capital Stock - Common Stock			Retained Earnings				Others						
	Shares (In Thousands)	Amount	Capital Surplus	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total	Treasury Stock	Total Equity
BALANCE, JANUARY 1, 2022	25,930,380	$ 259,303,805	$ 64,761,602	$ 311,146,899	$ 59,304,212	$ 1,536,378,550	$ 1,906,829,661	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)	$ -	$ 2,168,286,553
Appropriations of earnings														
Special capital reserve	-	-	-	-	(56,149,902)	56,149,902	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(285,234,185)	(285,234,185)	-	-	-	-	-	-	(285,234,185)
Total	-	-	-	-	(56,149,902)	(229,084,283)	(285,234,185)	-	-	-	-	-	-	(285,234,185)
Net income	-	-	-	-	-	1,016,530,249	1,016,530,249	-	-	-	-	-	-	1,016,530,249
Other comprehensive income (loss), net of income tax	-	-	-	-	-	(49,572)	(49,572)	51,560,060	(10,327,421)	1,411,574	-	42,644,213	-	42,594,641
Total comprehensive income (loss)	-	-	-	-	-	1,016,480,677	1,016,480,677	51,560,060	(10,327,421)	1,411,574	-	42,644,213	-	1,059,124,890
Share-based payment arrangements	1,387	13,870	438,029	-	-	-	-	-	-	-	(185,153)	(185,153)	-	266,746
Treasury stock acquired	-	-	-	-	-	-	-	-	-	-	-	-	(871,566)	(871,566)
Treasury stock retired	(1,387)	(13,870)	(2,989)	-	-	(854,707)	(854,707)	-	-	-	-	-	871,566	-
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	303,242	303,242	-	(303,242)	-	-	(303,242)	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(52,929)	-	(52,929)	-	(52,929)
Adjustments to share of changes in equities of associates	-	-	4,541	-	-	-	-	-	-	-	-	-	-	4,541
From share of changes in equities of subsidiaries	-	-	4,115,940	-	-	-	-	-	-	-	-	-	-	4,115,940
Donation from shareholders	-	-	13,205	-	-	-	-	-	-	-	-	-	-	13,205
BALANCE, DECEMBER 31, 2022	25,930,380	259,303,805	69,330,328	311,146,899	3,154,310	2,323,223,479	2,637,524,688	(11,743,301)	(10,056,353)	1,479,181	(185,153)	(20,505,626)	-	2,945,653,195
Appropriations of earnings														
Special capital reserve	-	-	-	-	(3,154,310)	3,154,310	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(317,663,220)	(317,663,220)	-	-	-	-	-	-	(317,663,220)
Total	-	-	-	-	(3,154,310)	(314,508,910)	(317,663,220)	-	-	-	-	-	-	(317,663,220)
Net income	-	-	-	-	-	838,497,664	838,497,664	-	-	-	-	-	-	838,497,664
Other comprehensive income (loss), net of income tax	-	-	-	-	-	(484,898)	(484,898)	(13,573,468)	6,108,369	(38,125)	-	(7,503,224)	-	(7,988,122)
Total comprehensive income (loss)	-	-	-	-	-	838,012,766	838,012,766	(13,573,468)	6,108,369	(38,125)	-	(7,503,224)	-	830,509,542
Employee restricted shares retired	(419)	(4,195)	4,195	-	-	4,614	4,614	-	-	-	-	-	-	4,614
Share-based payment arrangements	2,110	21,100	564,868	-	-	-	-	-	-	-	(108,281)	(108,281)	-	477,687
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	151,944	151,944	-	(151,944)	-	-	(151,944)	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(45,181)	-	(45,181)	-	(45,181)
Adjustments to share of changes in equities of associates	-	-	(18,155)	-	-	-	-	-	-	-	-	-	-	(18,155)
From share of changes in equities of subsidiaries	-	-	(21,268)	-	-	-	-	-	-	-	-	-	-	(21,268)
Donation from shareholders	-	-	16,413	-	-	-	-	-	-	-	-	-	-	16,413
BALANCE, DECEMBER 31, 2023	25,932,071	$ 259,320,710	$ 69,876,381	$ 311,146,899	$ -	$ 2,846,883,893	$ 3,158,030,792	$ (25,316,769)	$ (4,099,928)	$ 1,395,875	$ (293,434)	$ (28,314,256)	$ -	$ 3,458,913,627

The accompanying notes are an integral part of the parent company only financial statements.

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2023	2022
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	$ 977,771,236	$ 1,140,673,816
Adjustments for:		
Depreciation expense	500,300,771	413,595,082
Amortization expense	9,197,976	8,706,961
Expected credit losses recognized on investments in debt instruments	5,789	10,341
Finance costs	4,600,793	3,240,406
Share of profits of subsidiaries and associates	(52,587,403)	(42,415,408)
Interest income	(17,825,551)	(5,957,864)
Share-based compensation	482,302	266,746
Loss (gain) on disposal or retirement of property, plant and equipment, net	76,638	(436,567)
Loss (gain) on disposal or retirement of intangible assets, net	(3,045)	3,720
Impairment loss on property, plant and equipment	-	790,740
Loss (gain) on foreign exchange, net	183,093	9,965,603
Dividend income	(214,911)	(207,028)
Others	(317,394)	131,637
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	(24,326)	(1,025,979)
Notes and accounts receivable, net	7,754,557	4,588,461
Receivables from related parties	17,782,935	(34,692,438)
Other receivables from related parties	2,115,413	(1,074,087)
Inventories	(29,976,300)	(23,123,047)
Other financial assets	(1,019,979)	1,894,328
Other current assets	(7,799,552)	(712,233)
Other noncurrent assets	(720,278)	(8,532,751)
Accounts payable	(1,089,049)	7,528,120
Payables to related parties	67,281	2,362,846
Salary and bonus payable	(3,553,878)	10,494,186
Accrued profit sharing bonus to employees and compensation to directors	(10,749,687)	25,303,189
Accrued expenses and other current liabilities	(42,119,570)	47,110,082
Other noncurrent liabilities	12,836,220	86,831,552
Net defined benefit liability	(687,223)	(2,538,848)
Cash generated from operations	1,364,486,858	1,642,781,566
Income taxes paid	(157,403,955)	(83,364,086)
Net cash generated by operating activities	1,207,082,903	1,559,417,480
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial assets at amortized cost	(51,099,687)	(97,748,105)
Equity interest in subsidiary	(3,359)	-
Property, plant and equipment	(634,971,543)	(897,574,802)
Intangible assets	(4,898,499)	(6,679,871)
Proceeds from disposal or redemption of:		
Financial assets at amortized cost	81,900,000	49,190,000
Property, plant and equipment	1,369,856	1,665,212
Intangible assets	3,078	3,750
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	125	2,938

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2023	2022
Interest received	$ 16,851,011	$ 4,889,786
Other dividends received	214,911	207,028
Dividends received from investments accounted for using equity method	3,849,295	3,248,044
Refundable deposits paid	(1,703,523)	(1,611,716)
Refundable deposits refunded	359,682	406,185
Net cash used in investing activities	(588,128,653)	(944,001,551)
CASH FLOWS FROM FINANCING ACTIVITIES		
Decrease in short-term loans	-	(111,959,992)
Increase in hedging financial liabilities - bank loans	27,908,580	-
Proceeds from issuance of bonds	85,700,000	65,400,000
Repayment of bonds	(18,100,000)	(4,400,000)
Payments for transaction costs attributable to the issuance of bonds	(88,681)	(69,528)
Treasury stock acquired	-	(871,566)
Repayment of the principal portion of lease liabilities	(2,094,258)	(1,848,257)
Interest paid	(4,724,074)	(3,757,985)
Guarantee deposits received	187,164	216,589
Guarantee deposits refunded	(286,036)	(45,643)
Cash dividends	(291,721,852)	(285,234,185)
Payment of partial acquisition of interests in subsidiaries	(326,167,994)	(40,421,374)
Proceeds from partial disposal of interests in subsidiaries	244,376	144,505
Donation from shareholders	16,340	13,163
Net cash used in financing activities	(529,126,435)	(382,834,273)
NET INCREASE IN CASH AND CASH EQUIVALENTS	89,827,815	232,581,656
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	628,875,897	396,294,241
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 718,703,712	$ 628,875,897

The accompanying notes are an integral part of the parent company only financial statements. (Concluded)

1. GENERAL

Taiwan Semiconductor Manufacturing Company Limited (the "Company" or "TSMC"), a Republic of China (R.O.C.) corporation, was incorporated on February 21, 1987. The Company is a dedicated foundry in the semiconductor industry which engages mainly in the manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

On September 5, 1994, the Company's shares were listed on the Taiwan Stock Exchange (TWSE). On October 8, 1997, the Company listed some of its shares of stock on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs).

The address of its registered office and principal place of business is No. 8, Li-Hsin Rd. 6, Hsinchu Science Park, Taiwan.

2. THE AUTHORIZATION OF FINANCIAL STATEMENTS

The accompanying parent company only financial statements were approved and authorized for issue by the Board of Directors on February 6, 2024.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS

a. Initial application of the amendments to the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) (collectively, "IFRS Accounting Standards") endorsed and issued into effect by the Financial Supervisory Commission (FSC)

Except for the following, the initial application of the amendments to the IFRS Accounting Standards endorsed and issued into effect by the FSC did not have a material impact on the accounting policies of the Company:

Amendments to IAS 12 "International Tax Reform - Pillar Two Model Rules"

The amendments introduce a temporary exception to the requirements in IAS 12 by stipulating that the Company should neither recognize nor disclose information about deferred tax assets and liabilities related to Pillar Two income taxes. The amendments also require the Company to disclose that it has applied the exception and separately disclose its current tax expense (income) related to Pillar Two income taxes. In addition, for periods in which Pillar Two legislation is enacted or substantively enacted but not yet in effect, the Company should disclose qualitative and quantitative information that helps users of financial statements understand the Company's exposure to Pillar Two income taxes. The requirement that the Company applies the exception and the requirement to disclose that fact is applied immediately upon issuance of the amendments in May 2023. The remaining disclosure requirements are applied for annual reporting periods beginning on or after January 1, 2023, but not for any interim period ending on or before December 31, 2023.

b. The IFRS Accounting Standards issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2024

New, Amended and Revised Standards and Interpretations	Effective Date Issued by IASB
Amendments to IAS 1 “Classification of Liabilities as Current or Non-current” and “Non-current Liabilities with Covenants”	January 1, 2024

c. The IFRS Accounting Standards issued by IASB, but not yet endorsed and issued into effect by the FSC

New, Amended and Revised Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 10 and IAS 28 “Sale or Contribution of Assets between an Investor and its Associate or Joint Venture”	To be determined by IASB

As of the date the accompanying parent company only financial statements were authorized for issue, the Company continues in evaluating the impact on its financial position and financial performance from the initial adoption of the aforementioned standards or interpretations and related applicable period. The related impact will be disclosed when the Company completes its evaluation.

4. SUMMARY OF MATERIAL ACCOUNTING POLICY INFORMATION

For the convenience of readers, the accompanying parent company only financial statements have been translated into English from the original Chinese version prepared and used in the R.O.C. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language parent company only financial statements shall prevail.

Statement of Compliance

The accompanying parent company only financial statements have been prepared in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers (the “Accounting Standards Used in Preparation of the Parent Company Only Financial Statements”).

Basis of Preparation

The accompanying parent company only financial statements have been prepared on the historical cost basis except for financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

When preparing the parent company only financial statements, the Company account for subsidiaries and associates by using the equity method. In order to agree with the amount of net income, other comprehensive income and equity attributable to shareholders of the parent in the consolidated financial statements, the differences of the accounting treatment between the parent company only basis and the consolidated basis are adjusted under the heading of investments accounted for using equity method, share of profits of subsidiaries and associates and share of other comprehensive income of subsidiaries and associates in the parent company only financial statements.

Foreign Currencies

In preparing the parent company only financial statements, transactions in currencies other than the entity’s functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Such exchange differences are recognized in profit or loss in the year in which they arise. Non-monetary items measured at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising on the retranslation of non-monetary items are included in profit or loss for the year except for exchange differences arising on the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which case, the exchange differences are also recognized directly in other comprehensive income. Non-monetary items that are measured in terms of historical cost in foreign currencies are not retranslated.

For the purposes of presenting parent company only financial statements, the assets and liabilities of the Company's foreign operations are translated into NT$ using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity.

Classification of Current and Noncurrent Assets and Liabilities

Current assets are assets held for trading purposes and assets expected to be converted to cash, sold or consumed within one year from the end of the reporting period. Current liabilities are obligations incurred for trading purposes and obligations expected to be settled within one year from the end of the reporting period. Assets and liabilities that are not classified as current are noncurrent assets and liabilities, respectively.

Cash Equivalents

Cash equivalents, for the purpose of meeting short-term cash commitments, consist of highly liquid time deposits and investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Financial Instruments

Financial assets and liabilities shall be recognized when the Company becomes a party to the contractual provisions of the instruments.

Financial assets and liabilities are initially recognized at fair values. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial Assets

The classification of financial assets depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Regular way purchases or sales of financial assets are recognized and derecognized on a trade date or settlement date basis for which financial assets were classified in the same way, respectively. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

a. Category of financial assets and measurement

   Financial assets are classified into the following categories: financial assets at FVTPL, investments in equity instruments at FVTOCI and financial assets at amortized cost.

   1) Financial asset at FVTPL

      For certain financial assets which include debt instruments that do not meet the criteria of amortized cost or FVTOCI, it is mandatorily required to measure them at FVTPL. Any gain or loss arising from remeasurement is recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest earned on the financial asset.

2) Investments in equity instruments at FVTOCI

On initial recognition, the Company may irrevocably designate investments in equity investments that is not held for trading as at FVTOCI.

Investments in equity instruments at FVTOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity.

Dividends on these investments in equity instruments at FVTOCI are recognized in profit or loss when the Company's right to receive the dividends is established, unless the Company's rights clearly represent a recovery of part of the cost of the investment.

3) Measured at amortized cost

Cash and cash equivalents, commercial paper, notes and accounts receivable (including related parties), other receivables, refundable deposits and temporary payments (including those classified under other current assets and other noncurrent assets) are measured at amortized cost.

Subsequent to initial recognition, financial assets measured at amortized cost are measured at amortized cost, which equals to carrying amount determined by the effective interest method less any impairment loss.

b. Impairment of financial assets

At the end of each reporting period, a loss allowance for expected credit loss is recognized for financial assets at amortized cost (including accounts receivable).

The loss allowance for accounts receivable is measured at an amount equal to lifetime expected credit losses. For financial assets at amortized cost, when the credit risk on the financial instrument has not increased significantly since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from possible default events of a financial instrument within 12 months after the reporting date. If, on the other hand, there has been a significant increase in credit risk since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from all possible default events over the expected life of a financial instrument.

The Company recognizes an impairment loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account.

c. Derecognition of financial assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the financial asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset to another entity.

On derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. However, on derecognition of an investment in an equity instrument at FVTOCI, the cumulative gain or loss that had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

Financial Liabilities and Equity Instruments

Classification as debt or equity

Debt and equity instruments issued by the Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Financial liabilities

Financial liabilities are subsequently measured either at amortized cost using effective interest method or at FVTPL.

Financial liabilities are classified as at fair value through profit or loss when the financial liability is either held for trading or is designated as at fair value through profit or loss.

Financial liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

Financial liabilities other than those held for trading purposes and designated as at FVTPL are subsequently measured at amortized cost at the end of each reporting period.

Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

Derivative Financial Instruments

Derivative financial instruments are initially recognized at fair value at the date the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative financial instrument is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

Hedge Accounting

a. Cash flow hedge

   The Company designates certain hedging instruments, such as forward exchange contracts, to partially hedge its foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The effective portion of changes in the fair value of hedging instruments is recognized in other comprehensive income. When forecast transactions actually take place, the accumulated gains or losses that were recognized in other comprehensive income are transferred from equity to the initial cost of the hedged items. The gains or losses from hedging instruments relating to the ineffective portion are recognized immediately in profit or loss.

The Company prospectively discontinues hedge accounting only when the hedging relationship ceases to meet the qualifying criteria; for instance, when the hedging instrument expires or is sold, terminated or exercised.

b. Hedges of net investments in foreign operations

The Company designates certain hedging instruments, such as bank loans denominated in foreign currency, as a hedge of net investments in foreign operations to manage the exchange differences arising on translation of foreign operations due to currency fluctuations. Any gains or losses on the hedging instrument relating to the effective portion of the hedge are recognized in other comprehensive income and accumulated under the heading of foreign currency translation reserve. The gains or losses relating to the ineffective portion are recognized immediately in profit or loss.

The gains and losses on the hedging instrument relating to the effective portion of the hedge, which were accumulated in the foreign currency translation reserve, are reclassified to profit or loss on the disposal or partial disposal of a foreign operation.

Inventories

Inventories are stated at the lower of cost or net realizable value. Inventories are recorded at standard cost and adjusted to approximate weighted-average cost at the end of the reporting period. Net realizable value represents the estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale.

Investments Accounted for Using Equity Method

Investments accounted for using the equity method include investments in subsidiaries and associates.

<u>Investment in subsidiaries</u>

A subsidiary is an entity that is controlled by the Company.

Under the equity method, an investment in a subsidiary is initially recognized at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the subsidiary as well as the distribution received. The Company also recognized its share in the changes in the equity of subsidiaries.

Changes in the Company's ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. Any difference between the carrying amount of the subsidiary and the fair value of the consideration paid or received is recognized directly in equity.

When the Company loses control of a subsidiary, any retained investment of the former subsidiary is measured at the fair value at that date. A gain or loss is recognized in profit or loss and calculated as the difference between (a) the aggregate of the fair value of consideration received and the fair value of any retained interest at the date when control is lost; and (b) the previous carrying amount of the investments in such subsidiary. In addition, the Company shall account for all amounts previously recognized in other comprehensive income in relation to the subsidiary on the same basis as would be required if the subsidiary had directly disposed of the related assets and liabilities.

When the Company transacts with its subsidiaries, profits and losses resulting from the transactions with the subsidiaries are recognized in the Company's parent company only financial statements only to the extent of interests in the subsidiaries that are not owned by the Company.

Investment in associates

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

The operating results and assets and liabilities of associates are incorporated in these parent company only financial statements using the equity method of accounting. Under the equity method, an investment in an associate is initially recognized in the statement of financial position at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the associate as well as the distribution received. The Company also recognizes its share in the changes in the equities of associates.

Any excess of the cost of acquisition over the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

When the Company subscribes to additional shares in an associate at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Company's proportionate interest in the net assets of the associate. The Company records such a difference as an adjustment to investments with the corresponding amount charged or credited to capital surplus. If the Company's ownership interest is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

When the Company transacts with an associate, profits and losses resulting from the transactions with the associate are recognized in the Company's parent company only financial statements only to the extent of interests in the associate that are not owned by the Company.

Property, Plant and Equipment

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment. Costs include any incremental costs that are directly attributable to the construction, acquisition of the item of property, plant and equipment or borrowing costs eligible for capitalization.

Property, plant and equipment in the course of construction for production, supply or administrative purposes are carried at cost, less any recognized impairment loss. Such assets are classified to the appropriate categories of property, plant and equipment when completed and ready for intended use. Depreciation of these assets, on the same basis as other identical categories of property, plant and equipment, commences when the assets are available for their intended use.

Depreciation is recognized so as to write off the cost of the assets less their residual values over their useful lives, and it is computed using the straight-line method mainly over the following estimated useful lives: buildings (assets used by the Company and assets subject to operating leases) - 10 to 20 years; machinery and equipment (assets used by the Company and assets subject to operating leases) - 5 years; and office equipment - 5 years. The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimates accounted for on a prospective basis. Land is not depreciated.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the assets. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognized in profit or loss.

Leases

For a contract that contains a lease component and non-lease component, the Company may elect to account for the lease and non-lease components as a single lease component.

<u>The Company as lessor</u>

Rental income from operating lease is recognized on a straight-line basis over the term of the lease.

<u>The Company as lessee</u>

Except for payments for low-value asset leases and short-term leases (leases of machinery and equipment and others) which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases at the commencement date of the lease.

Right-of-use assets are measured at cost. The cost of right-of-use assets comprises the initial measurement of lease liabilities adjusted for lease payments and initial direct costs made at or before the commencement date, plus an estimate of costs needed to restore the underlying assets. Subsequent measurement is calculated as cost less accumulated depreciation and accumulated impairment loss and adjusted for changes in lease liabilities as a result of lease term modifications or other related factors. Right-of-use assets are presented separately in the parent company only balance sheets.

Right-of-use assets are depreciated using the straight-line method from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms. If the lease transfers ownership of the underlying assets to the Company by the end of the lease terms or if the cost of right-of-use assets reflects that the Company will exercise a purchase option, the Company depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are measured at the present value of the lease payments. Lease payments comprise fixed payments, variable lease payments which depend on an index or a rate and the exercise price of a purchase option if the Company is reasonably certain to exercise that option. The lease payments are discounted using the lessee’s incremental borrowing rates.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, the Company remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. Lease liabilities are presented on a separate line in the parent company only balance sheets.

Intangible Assets

<u>Goodwill</u>

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

Other intangible assets

Other separately acquired intangible assets with finite useful lives are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized using the straight-line method over the following estimated useful lives: Technology license fees - the estimated life of the technology or the term of the technology transfer contract; software and system design costs - 3 years or contract period; patent and others - the economic life or contract period. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets

Goodwill

Goodwill is not amortized and instead is tested for impairment annually, or more frequently when there is an indication that the cash generating unit may be impaired. For the purpose of impairment testing, goodwill is allocated to each of the Company's cash generating units or groups of cash-generating units that are expected to benefit. If the recoverable amount of a cash generating unit is less than its carrying amount, the difference is allocated first to reduce the carrying amount of any goodwill allocated to such cash-generating unit and then to the other assets of the cash generating unit pro rata based on the carrying amount of each asset in the cash generating unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

Tangible assets, right-of-use assets and other intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets (property, plant and equipment), right-of-use assets and other intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

When an impairment loss subsequently reverses, the carrying amount of the asset or a cash-generating unit is increased to the revised estimate of its recoverable amount, but the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

Revenue Recognition

The Company recognizes revenue when performance obligations are satisfied. The performance obligations are satisfied when customers obtain control of the promised goods which is generally when the goods are delivered to the customers' specified locations.

Revenue from sale of goods is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms to recognize refund liabilities, which is classified under accrued expenses and other current liabilities.

In principle, payment term granted to customers is due 30 days from the invoice date or 15-30 days from the end of the month of when the invoice is issued. Due to the short term nature of the receivables from sale of goods with the immaterial discounted effect, the Company measures them at the original invoice amounts without discounting.

Employee Benefits

Short-term employee benefits

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for service rendered by employees.

Retirement benefits

For defined contribution retirement benefit plans, payments to the benefit plan are recognized as an expense when the employees have rendered service entitling them to the contribution. For defined benefit retirement benefit plans, the cost of providing benefit is recognized based on actuarial calculations.

Defined benefit costs (including service cost, net interest and remeasurement) under the defined benefit retirement benefit plans are determined using the Projected Unit Credit Method. Service cost (including current service cost), and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Remeasurement, comprising actuarial gains and losses and the return on plan assets (excluding interest), is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability represents the actual deficit in the Company’s defined benefit plan.

Treasury Stock

Treasury stock represents the outstanding shares that the Company buys back from market, which is stated at cost and shown as a deduction in shareholders’ equity. When the Company retires treasury stock, the treasury stock account is reduced and the common stock as well as the capital surplus - additional paid-in capital are reversed on a pro rata basis. When the book value of the treasury stock exceeds the sum of the par value and additional paid-in capital, the difference is charged to capital surplus - treasury stock transactions and to retained earnings for any remaining amount.

Share-based payment arrangements

a. Equity-settled share-based payment arrangements

   Restricted shares for employees are expensed on a straight-line basis over the vesting period, based on the fair value at the grant date and the Company’s best estimate of the number expected to ultimately vest, with a corresponding increase in other equity - unearned employee benefits.

   When restricted shares for employees are issued, other equity - unearned employee benefits is recognized on the grant date, with a corresponding increase in capital surplus - restricted shares for employees. Dividends paid to employees on restricted shares which do not need to be returned if employees resign in the vesting period are recognized as expenses upon the dividend declaration with a corresponding adjustment in retained earnings.

At the end of each reporting period, the Company revises its estimate of the number of restricted shares for employees that are expected to vest. The impact from such revision is recognized in profit or loss so that the cumulative expenses reflect the revised estimate, with a corresponding adjustment to capital surplus - restricted shares for employees.

b. Cash-settled share-based payment arrangements

For cash-settled share-based payments, a liability is recognized for the services acquired, measured at the fair value of the liability incurred. At the end of each reporting period until the liability is settled, and at the date of settlement, the fair value of the liability is remeasured, with any changes in fair value recognized in profit or loss.

Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

Current tax

Income tax on unappropriated earnings is expensed in the year the shareholders approved the appropriation of earnings which is the year subsequent to the year the earnings are generated.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the parent company only financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, net operating loss carryforwards and tax credits for research and development expenses to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered. The deferred tax assets which originally not recognized is also reviewed at the end of each reporting period and recognized to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the year in which the liability is settled or the asset is realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Current and deferred tax for the year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity, respectively.

5. MATERIAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY

In the application of the aforementioned Company's accounting policies, the Company is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimate is revised if the revision affects only that year, or in the year of the revision and future years if the revision affects both current and future years.

Material Accounting Judgments

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied.

Commencement of Depreciation Related to Property, Plant and Equipment Classified as Equipment under Installation and Construction in Progress (EUI/CIP)

As described in Note 4, commencement of depreciation related to EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner.

Judgments on Lease Terms

In determining a lease term, the Company considers all facts and circumstances that create an economic incentive to exercise or not to exercise an option, including any expected changes in facts and circumstances from the commencement date until the exercise date of the option. Main factors considered include contractual terms and conditions covered by the optional periods, and the importance of the underlying asset to the lessee's operations, etc. The lease term is reassessed if a significant change in circumstances that are within the control of the Company occurs.

Key Sources of Estimation and Uncertainty

Estimation of Sales Returns and Allowances

Sales returns and other allowance is estimated and recorded based on historical experience and in consideration of different contractual terms. The amount is deducted from revenue in the same period the related revenue is recorded. The Company periodically reviews the reasonableness of the estimates.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses estimate to determine the net realizable value of inventory at the end of each reporting period.

The Company estimates the net realizable value of inventory for normal waste, obsolescence and unmarketable items at the end of reporting period and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is determined mainly based on assumptions of future demand within a specific time horizon.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible assets, right-of-use assets and intangible assets other than goodwill, the Company determines the independent cash flows, useful lives, expected future revenue and expenses related to the specific asset groups with the consideration of the nature of semiconductor industry. Any change in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Realization of Deferred Income Tax Assets

Deferred tax assets are recognized to the extent that it is probable that future taxable profits will be available against which those deferred tax assets can be utilized. Assessment of the realization of the deferred tax assets requires subjective judgment and estimate, including the future revenue growth and profitability, tax holidays, the amount of tax credits can be utilized and feasible tax planning strategies. Any changes in the global economic environment, the industry trends and relevant laws and regulations could result in significant adjustments to the deferred tax assets.

Determination of Lessees' Incremental Borrowing Rates

In determining a lessee's incremental borrowing rate used in discounting lease payments, the Company mainly takes into account the market risk-free rates, the estimated lessee's credit spreads and secured status in a similar economic environment.

6. CASH AND CASH EQUIVALENTS

	December 31, 2023	December 31, 2022
Cash and deposits in banks	$ 710,158,232	$ 618,449,503
Money market funds	7,438,588	-
Repurchase agreements	1,106,892	859,964
Commercial paper	-	9,566,430
	$ 718,703,712	$ 628,875,897

Deposits in banks consisted of highly liquid time deposits that were readily convertible to known amounts of cash and were subject to an insignificant risk of changes in value.

7. FINANCIAL ASSETS AND LIABILITIES AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31, 2023	December 31, 2022
Financial assets		
Mandatorily measured at FVTPL		
Forward exchange contracts	$ 624,685	$ 552,255
Financial liabilities		
Held for trading		
Forward exchange contracts	$ 25,673	$ 17,468

The Company entered into forward exchange contracts to manage exposures due to fluctuations of foreign exchange rates. These forward exchange contracts did not meet the criteria for hedge accounting. Therefore, the Company did not apply hedge accounting treatment for these forward exchange contracts.

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)	
December 31, 2023			
Sell NT$	January 2024	NT$	26,251,763
Sell US$	January 2024	US$	829,000
December 31, 2022			
Sell NT$	January 2023 to March 2023	NT$	79,610,590

8. FINANCIAL ASSETS AT AMORTIZED COST

	December 31, 2023	December 31, 2022
Commercial paper	$ 18,387,835	$ 48,742,817
Less: Allowance for impairment loss	(16,130)	(10,341)
	$ 18,371,705	$ 48,732,476

Refer to Note 29 for information relating to the credit risk management and expected credit loss for financial assets at amortized cost.

9. HEDGING FINANCIAL INSTRUMENTS

	December 31, 2023
Financial liabilities- current	
Hedges of net investments in foreign operations	
Bank loans	$ 27,290,400

Cash flow hedge

The Company entered into forward exchange contracts to partially hedge foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%. The forward exchange contracts have maturities of 12 months or less.

On the basis of economic relationships, the Company expects that the value of forward exchange contracts and the value of hedged transactions will change in opposite directions in response to movements in foreign exchange rates.

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty's own credit risk on the fair value of forward exchange contracts. No other sources of ineffectiveness emerged from these hedging relationships during the hedging period. For the years ended December 31, 2023, refer to Note 18 (d) for gain or loss arising from changes in the fair value of hedging instruments and the amount transferred to initial carrying amount of hedged items.

The effect of hedging foreign currency risk for the years ended December 31, 2023 is detailed below:

Hedging Instruments/Hedged Items	Change in Value Used for Calculating Hedge Ineffectiveness Years Ended December 31, 2023
Hedging Instruments	
Forward exchange contracts	$ 39,898
Hedged Items	
Forecast transaction	$ (39,898)

Hedges of net investments in foreign operations

The Company has designated the bank loans denominated in foreign currency as a hedge of net investments in foreign operations to manage its foreign currency risk arising from investment in overseas subsidiaries.

The main source of hedge ineffectiveness in these hedging relationships is driven by the material difference between the notional amount of bank loans denominated in foreign currency and the net investment in foreign operations. No other sources of ineffectiveness have emerged from these hedging relationships during the hedging period. For the year ended December 31, 2023, refer to Note 18 (d) for gain or loss arising from changes in the fair value of hedging instruments.

The following tables summarize the information relating to the hedges of net investments in foreign operations.

December 31, 2023

Hedging Instruments	Contract Amount (In Thousands)	Annual Interest Rate	Maturity	Balance in Other Equity (Continuing Hedges)
Bank loans	JPY124,500,000	0%	Due by April 2024	$ 618,180

The effect for the year ended December 31, 2023 is detailed below:

Hedging Instruments/Hedged Items	Change in Value Used for Calculating Hedge Ineffectiveness Year Ended December 31, 2023
Hedging Instruments	
Bank loans	$ 618,180
Hedged Items	
Net investments in foreign operations	$ (618,180)

10. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2023	December 31, 2022
At amortized cost		
Notes and accounts receivable	$ 28,676,101	$ 34,316,916
Less: Loss allowance	(530,139)	(330,686)
	28,145,962	33,986,230
At FVTOCI	5,411,317	7,325,606
	$ 33,557,279	$ 41,311,836

The Company signed a contract with the bank to sell certain accounts receivable without recourse and transaction cost required. These accounts receivable are classified as at FVTOCI because they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets.

In principle, the payment term granted to customers is due 30 days from the invoice date or 15-30 days from the end of the month when the invoice is issued. Aside from recognizing impairment loss for credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels with consideration of factors of historical loss ratios and customers' financial conditions, competitiveness and business outlook. For accounts receivable past due over 90 days without collaterals or guarantees, the Company recognizes loss allowance at full amount.

Aging analysis of notes and accounts receivable

	December 31, 2023	December 31, 2022
Not past due	$ 33,618,149	$ 40,353,856
Past due		
Past due within 30 days	469,269	1,268,778
Past due over 31 days	-	19,888
Less: Loss allowance	(530,139)	(330,686)
	$ 33,557,279	$ 41,311,836

All of the Company's accounts receivable classified as at FVTOCI were not past due.

Movements of the loss allowance for accounts receivable

	Years Ended December 31	
	2023	2022
Balance, beginning of year	$ 330,686	$ 345,905
Provision (Reversal)	199,453	(15,219)
Balance, end of year	$ 530,139	$ 330,686

For the years ended December 31, 2023 and 2022, the changes in loss allowance were mainly due to the variations in the balance of accounts receivable of different risk levels.

11. INVENTORIES

	December 31, 2023	December 31, 2022
Finished goods	$ 33,839,662	$ 52,318,299
Work in process	153,362,168	120,893,772
Raw materials	37,279,545	19,750,618
Supplies and spare parts	13,777,820	15,320,206
	$ 238,259,195	$ 208,282,895

Write-down of inventories to net realizable value and reversal of write-down of inventories resulting from the increase in net realizable value were included in the cost of revenue. The amounts are illustrated below:

	Years Ended December 31	
	2023	2022
Net inventory losses	$ 3,526,480	$ 4,613,077

12. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Investments accounted for using the equity method consisted of the following:

	December 31, 2023	December 31, 2022
Subsidiaries	$1,065,078,454	$ 700,324,717
Associates	29,616,638	27,622,452
	$1,094,695,092	$ 727,947,169

a. Investments in subsidiaries

Subsidiaries consisted of the following:

Subsidiaries	Principal Activities	Place of Incorporation and Operation	Carrying Amount December 31, 2023	Carrying Amount December 31, 2022	Percentage of Ownership December 31, 2023	Percentage of Ownership December 31, 2022
TSMC Global Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	$ 441,225,883	$ 411,992,426	100%	100%
TSMC Arizona Corporation (TSMC Arizona)	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	Phoenix, Arizona, U.S.A.	298,604,975	25,639,079	100%	100%
TSMC China Company Limited (TSMC China)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	95,419,097	87,028,722	100%	100%
TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	87,625,830	67,385,300	100%	100%
TSMC Partners, Ltd. (TSMC Partners)	Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	Tortola, British Virgin Islands	68,143,719	63,697,217	100%	100%
Japan Advanced Semiconductor Manufacturing, Inc. (JASM)	Manufacturing, sales, testing and computer aided design of integrated circuits and other semiconductor devices	Kumamoto, Japan	47,087,140	23,330,125	71%	71%
VisEra Technologies Company Ltd. (VisEra Tech)	Research, design, development, manufacturing, sales, packaging and test of color filter	Hsinchu, Taiwan	11,261,961	11,467,860	67%	68%
TSMC North America	Selling and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	6,278,751	5,449,755	100%	100%
European Semiconductor Manufacturing Company (ESMC) GmbH (ESMC)	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	Dresden, Germany	4,768,013	-	100%	-
Emerging Fund L.P. (Emerging Fund)	Investing in technology start-up companies	Cayman Islands	1,901,742	1,760,885	99.9%	99.9%
TSMC Japan 3DIC R&D Center, Inc. (TSMC 3DIC)	Engineering support activities	Yokohama, Japan	1,224,449	1,172,706	100%	100%
TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	592,499	527,693	100%	100%
TSMC Design Technology Japan, Inc. (TSMC JDC)	Engineering support activities	Yokohama, Japan	394,191	376,176	100%	100%
VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in new start-up technology companies	Cayman Islands	257,540	246,702	98%	98%
TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	130,403	134,560	100%	100%
VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	117,662	71,429	98%	98%
TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	44,599	44,082	100%	100%
			$ 1,065,078,454	$ 700,324,717		

The Company continually increased its investment in TSMC Arizona for the amount of NT$292,649,510 thousand and NT$15,372,500 thousand in both of 2023 and 2022, respectively. Under the terms of the development agreement entered into between TSMC Arizona and the City of Phoenix, the City of Phoenix commits approximately US$205 million toward various public infrastructure projects in the area of the proposed manufacturing facility, conditioned on TSMC Arizona’s achieving a minimum project scale with defined spending and job-creation thresholds.

The Company continually increased its investment in JASM for the amount of NT$28,062,957 thousand and NT$23,150,164 thousand in both of 2023 and 2022, respectively. The Company's shareholding and the proportion of voting rights in JASM are 71% and 81%, respectively. The Company increased its investment in JASM for the amount of NT$11,144,154 thousand in January 2024.

As VisEra employees continue to exercise their employee share options, the Company's ownership in VisEra continues to decline. This transaction was accounted for as an equity transaction since the transaction did not change the Company's control over VisEra.

ESMC was established in June 2023, and the Company continually increased its investment in ESMC for the amount of NT$4,814,293 thousand. The Company sold its 10% shares to Robert Bosch GmbH, Infineon Technologies AG and NXP Semiconductors N.V. in January 2024. After selling shares, The Company's shareholding in ESMC decreased from 100% to 70%. This transaction was accounted for as an equity transaction since the transaction did not change the Company's control over ESMC.

b. Investments in associates

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2023	December 31, 2022	December 31, 2023	December 31, 2022
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	$ 13,590,430	$ 13,492,653	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	9,728,801	8,934,731	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	3,759,701	3,528,417	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	2,537,706	1,666,651	35%	35%
			$ 29,616,638	$ 27,622,452		

As of December 31, 2023 and 2022, no investments in associates are individually material to the Company. Please refer to the parent company only statements of comprehensive income for recognition of share of both profit (loss) and other comprehensive income (loss) of associates that are not individually material.

The market prices of the associates' ownership held by the Company in publicly traded stocks calculated by the closing price are summarized as follows. The closing price represents the quoted price in active markets, the level 1 fair value measurement.

Name of Associate	December 31, 2023	December 31, 2022
GUC	$ 81,236,875	$ 29,926,918
VIS	$ 37,834,215	$ 35,977,321
Xintec	$ 14,188,445	$ 10,716,449

13. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2023	December 31, 2022
Assets used by the Company	$2,453,454,729	$2,432,657,698
Assets subject to operating leases	10,593	17,352
	$2,453,465,322	$2,432,675,050

Assets used by the Company

	Land	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
Balance at January 1, 2023	$ 3,212,000	$ 588,665,721	$ 4,073,634,985	$ 78,940,726	$ 1,157,545,820	$ 5,901,999,252
Additions (deductions)	-	170,726,292	1,092,820,315	17,029,650	(760,754,707)	519,821,550
Disposals or retirements	-	(585,487)	(34,652,800)	(3,268,575)	-	(38,506,862)
Transfers from assets subject to operating leases	-	-	80,370	-	-	80,370
Transfers to assets subject to operating leases	-	-	(71,078)	-	-	(71,078)
Balance at December 31, 2023	$ 3,212,000	$ 758,806,526	$ 5,131,811,792	$ 92,701,801	$ 396,791,113	$ 6,383,323,232
Accumulated depreciation and impairment						
Balance at January 1, 2023	$ -	$ 315,107,562	$ 3,098,295,994	$ 55,147,258	$ 790,740	$ 3,469,341,554
Additions	-	42,097,968	445,570,821	9,840,540	-	497,509,329
Disposals or retirements	-	(582,993)	(33,138,618)	(3,268,575)	-	(36,990,186)
Transfers from assets subject to operating leases	-	-	53,537	-	-	53,537
Transfers to assets subject to operating leases	-	-	(45,731)	-	-	(45,731)
Balance at December 31, 2023	$ -	$ 356,622,537	$ 3,510,736,003	$ 61,719,223	$ 790,740	$ 3,929,868,503
Carrying amounts at December 31, 2023	$ 3,212,000	$ 402,183,989	$ 1,621,075,789	$ 30,982,578	$ 396,000,373	$ 2,453,454,729
Cost						
Balance at January 1, 2022	$ 3,212,000	$ 536,912,374	$ 3,814,331,964	$ 71,312,061	$ 552,647,944	$ 4,978,416,343
Additions	-	51,982,217	289,897,592	9,288,321	604,897,876	956,066,006
Disposals or retirements	-	(228,870)	(30,528,791)	(1,659,656)	-	(32,417,317)
Transfers to assets subject to operating leases	-	-	(65,780)	-	-	(65,780)
Balance at December 31, 2022	$ 3,212,000	$ 588,665,721	$ 4,073,634,985	$ 78,940,726	$ 1,157,545,820	$ 5,901,999,252
Accumulated depreciation and impairment						
Balance at January 1, 2022	$ -	$ 281,421,525	$ 2,758,724,265	$ 48,300,051	$ -	$ 3,088,445,841
Additions	-	33,911,674	368,684,999	8,506,391	-	411,103,064
Disposals or retirements	-	(225,637)	(29,073,004)	(1,659,184)	-	(30,957,825)
Transfers to assets subject to operating leases	-	-	(40,266)	-	-	(40,266)
Impairment	-	-	-	-	790,740	790,740
Balance at December 31, 2022	$ -	$ 315,107,562	$ 3,098,295,994	$ 55,147,258	$ 790,740	$ 3,469,341,554
Carrying amounts at December 31, 2022	$ 3,212,000	$ 273,558,159	$ 975,338,991	$ 23,793,468	$ 1,156,755,080	$ 2,432,657,698

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

In the first quarter of 2022, the Company recognized an impairment loss of NT$790,740 thousand for certain machinery and equipment that were assessed to have no future use, and the recoverable amount of the aforementioned assets were nil. Such impairment loss was recognized in other operating income and expenses.

Information about capitalized interest is set out in Note 21.

14. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31, 2023	December 31, 2022
Carrying amounts		
Land	$ 37,039,145	$ 38,121,835
Buildings	811,037	911,108
Office equipment	22,523	18,484
	$ 37,872,705	$ 39,051,427

	Years Ended December 31	
	2023	2022
Additions to right-of-use assets	$ 1,657,886	$ 11,808,591
Depreciation of right-of-use assets		
Land	$ 2,439,615	$ 2,102,934
Buildings	330,361	365,167
Office equipment	16,193	15,728
	$ 2,786,169	$ 2,483,829

b. Lease liabilities

	December 31, 2023	December 31, 2022
Carrying amounts		
Current portion (classified under accrued expenses and other current liabilities)	$ 2,122,132	$ 2,029,362
Noncurrent portion	26,959,435	27,593,900
	$ 29,081,567	$ 29,623,262

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2023	December 31, 2022
Land	0.39%-2.30%	0.39%-2.30%
Buildings	0.57%-1.76%	0.39%-1.76%
Office equipment	0.28%-1.73%	0.28%-1.73%

c. Material terms of right-of-use assets

The Company leases land and buildings mainly for the use of plants and offices with lease terms of 1 to 22 years. The lease contracts for land located in the R.O.C. specify that lease payments will be adjusted every 2 years on the basis of changes in announced land value prices. The Company does not have purchase options to acquire the leasehold land and buildings at the end of the lease terms.

d. Other lease information

	Years Ended December 31	
	2023	2022
Expenses relating to short-term leases	$ 1,212,080	$ 4,616,518
Total cash outflow for leases	$ 4,128,092	$ 7,037,733

15. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
Cost					
Balance at January 1, 2023	$ 1,567,756	$ 25,706,243	$ 47,821,483	$ 11,668,271	$ 86,763,753
Additions	-	460,032	4,417,438	548,499	5,425,969
Disposals or retirements	-	-	(4,289,185)	-	(4,289,185)
Balance at December 31, 2023	$ 1,567,756	$ 26,166,275	$ 47,949,736	$ 12,216,770	$ 87,900,537
Accumulated amortization and impairment					
Balance at January 1, 2023	$ -	$ 17,643,661	$ 38,255,701	$ 9,408,287	$ 65,307,649
Additions	-	2,792,353	5,244,804	1,160,819	9,197,976
Disposals or retirements	-	-	(4,289,152)	-	(4,289,152)
Balance at December 31, 2023	$ -	$ 20,436,014	$ 39,211,353	$ 10,569,106	$ 70,216,473
Carrying amounts at December 31, 2023	$ 1,567,756	$ 5,730,261	$ 8,738,383	$ 1,647,664	$ 17,684,064
Cost					
Balance at January 1, 2022	$ 1,567,756	$ 23,483,138	$ 43,072,450	$ 11,465,356	$ 79,588,700
Additions	-	2,253,096	4,815,294	202,915	7,271,305
Disposals or retirements	-	(29,991)	(66,261)	-	(96,252)
Balance at December 31, 2022	$ 1,567,756	$ 25,706,243	$ 47,821,483	$ 11,668,271	$ 86,763,753
Accumulated amortization and impairment					
Balance at January 1, 2022	$ -	$ 14,861,472	$ 33,599,582	$ 8,217,246	$ 56,678,300
Additions	-	2,793,540	4,722,380	1,191,041	8,706,961
Disposals or retirements	-	(11,351)	(66,261)	-	(77,612)
Balance at December 31, 2022	$ -	$ 17,643,661	$ 38,255,701	$ 9,408,287	$ 65,307,649
Carrying amounts at December 31, 2022	$ 1,567,756	$ 8,062,582	$ 9,565,782	$ 2,259,984	$ 21,456,104

The Company’s goodwill has been tested for impairment at the end of the annual reporting period and the recoverable amount is determined based on the value in use. The value in use was calculated based on the cash flow forecast from the financial budgets covering the future five-year period, and the Company used annual discount rates of 9.0% and 8.7% in its test of impairment as of December 31, 2023 and 2022, respectively, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2023 and 2022, the Company did not recognize any impairment loss on goodwill.

16. BONDS PAYABLE

	December 31, 2023	December 31, 2022
Domestic unsecured bonds	$ 447,194,000	$ 379,526,000
Less: Discounts on bonds payable	(326,435)	(295,526)
Less: Current portion	(6,997,710)	(18,100,000)
	$ 439,869,855	$ 361,130,474

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
NT$ unsecured bonds					
101-3	-	October 2012 to October 2022	$ 4,400,000	1.53%	Bullet repayment; interest payable annually
101-4	C	January 2013 to January 2023	3,000,000	1.49%	The same as above
102-1	C	February 2013 to February 2023	3,600,000	1.50%	The same as above
102-2	B	July 2013 to July 2023	3,500,000	1.70%	The same as above
102-4	E	September 2013 to March 2023	5,400,000	2.05%	The same as above
	F	September 2013 to September 2023	2,600,000	2.10%	The same as above
109-1	A	March 2020 to March 2025	3,000,000	0.58%	The same as above
	B	March 2020 to March 2027	10,500,000	0.62%	The same as above
	C	March 2020 to March 2030	10,500,000	0.64%	The same as above
109-2	A	April 2020 to April 2025	5,900,000	0.52%	The same as above
	B	April 2020 to April 2027	10,400,000	0.58%	The same as above
	C	April 2020 to April 2030	5,300,000	0.60%	The same as above
109-3	A	May 2020 to May 2025	4,500,000	0.55%	The same as above
	B	May 2020 to May 2027	7,500,000	0.60%	The same as above
	C	May 2020 to May 2030	2,400,000	0.64%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
109-4	A	July 2020 to July 2025	$ 5,700,000	0.58%	Two equal installments in last two years; interest payable annually
	B	July 2020 to July 2027	6,300,000	0.65%	The same as above
	C	July 2020 to July 2030	1,900,000	0.67%	The same as above
109-5	A	September 2020 to September 2025	4,800,000	0.50%	The same as above
	B	September 2020 to September 2027	8,000,000	0.58%	The same as above
	C	September 2020 to September 2030	2,800,000	0.60%	The same as above
109-6 (Green bond)	A	December 2020 to December 2025	1,600,000	0.40%	The same as above
	B	December 2020 to December 2027	5,600,000	0.44%	The same as above
	C	December 2020 to December 2030	4,800,000	0.48%	The same as above
109-7	A	December 2020 to December 2025	1,900,000	0.36%	The same as above
	B	December 2020 to December 2027	10,200,000	0.41%	The same as above
	C	December 2020 to December 2030	6,400,000	0.45%	The same as above
110-1	A	March 2021 to March 2026	4,800,000	0.50%	Bullet repayment; interest payable annually
	B	March 2021 to March 2028	11,400,000	0.55%	The same as above
	C	March 2021 to March 2031	4,900,000	0.60%	The same as above
110-2	A	May 2021 to May 2026	5,200,000	0.50%	The same as above
	B	May 2021 to May 2028	8,400,000	0.58%	The same as above
	C	May 2021 to May 2031	5,600,000	0.65%	The same as above
110-3	A	June 2021 to June 2026	6,900,000	0.52%	The same as above
	B	June 2021 to June 2028	7,900,000	0.58%	The same as above
	C	June 2021 to June 2031	4,900,000	0.65%	The same as above
110-4	A	August 2021 to August 2025	4,000,000	0.485%	The same as above
	B	August 2021 to August 2026	8,000,000	0.50%	The same as above
	C	August 2021 to August 2028	5,400,000	0.55%	The same as above
	D	August 2021 to August 2031	4,200,000	0.62%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
110-6	A	October 2021 to April 2026	$ 3,200,000	0.535%	Bullet repayment; interest payable annually
	B	October 2021 to October 2026	6,900,000	0.54%	The same as above
	C	October 2021 to October 2028	4,600,000	0.60%	The same as above
	D	October 2021 to October 2031	1,600,000	0.62%	The same as above
110-7	A	December 2021 to December 2026	7,700,000	0.65%	The same as above
	B	December 2021 to June 2027	3,500,000	0.675%	The same as above
	C	December 2021 to December 2028	5,500,000	0.72%	The same as above
111-1 (Green bond)	A	January 2022 to January 2027	2,100,000	0.63%	The same as above
	B	January 2022 to January 2029	3,300,000	0.72%	The same as above
111-2	A	March 2022 to September 2026	3,000,000	0.84%	The same as above
	B	March 2022 to March 2027	9,600,000	0.85%	The same as above
	C	March 2022 to March 2029	1,600,000	0.90%	The same as above
111-3 (Green bond)	-	May 2022 to May 2027	6,100,000	1.50%	The same as above
111-4 (Green bond)	A	July 2022 to July 2026	1,200,000	1.60%	The same as above
	B	July 2022 to July 2027	10,100,000	1.70%	The same as above
	C	July 2022 to July 2029	1,200,000	1.75%	The same as above
	D	July 2022 to July 2032	1,400,000	1.95%	The same as above
111-5	A	August 2022 to June 2027	2,000,000	1.65%	The same as above
	B	August 2022 to August 2027	8,900,000	1.65%	The same as above
	C	August 2022 to August 2029	2,200,000	1.65%	The same as above
	D	August 2022 to August 2032	2,500,000	1.82%	The same as above
111-6 (Green bond)	A	October 2022 to October 2027	5,700,000	1.75%	The same as above
	B	October 2022 to October 2029	1,000,000	1.80%	The same as above
	C	October 2022 to October 2032	3,500,000	2.00%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
112-1 (Green bond)	A	March 2023 to March 2028	$ 12,200,000	1.54%	Bullet repayment; interest payable annually
	B	March 2023 to March 2030	2,300,000	1.60%	The same as above
	C	March 2023 to March 2033	4,800,000	1.78%	The same as above
112-2 (Green bond)	A	May 2023 to May 2028	13,100,000	1.60%	The same as above
	B	May 2023 to May 2030	2,300,000	1.65%	The same as above
	C	May 2023 to May 2033	5,300,000	1.82%	The same as above
112-3	A	June 2023 to June 2028	11,400,000	1.60%	The same as above
	B	June 2023 to June 2030	2,600,000	1.65%	The same as above
	C	June 2023 to June 2033	6,000,000	1.80%	The same as above
112-4	A	August 2023 to August 2028	7,300,000	1.60%	The same as above
	B	August 2023 to August 2030	700,000	1.65%	The same as above
	C	August 2023 to August 2033	7,900,000	1.76%	The same as above
112-5	A	October 2023 to October 2028	4,300,000	1.62%	The same as above
	B	October 2023 to October 2033	5,500,000	1.76%	The same as above

(Concluded)

Issuance	Tranche	Issuance Period	Total Amount (US$ in Thousands)	Coupon Rate	Repayment and Interest Payment
US$ unsecured bonds					
109-1	-	September 2020 to September 2060	US$1,000,000	2.70%	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter); interest payable annually
110-5	-	September 2021 to September 2051	1,000,000	3.10%	The same as above

17. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

The plan under the R.O.C. Labor Pension Act (the "Act") is deemed a defined contribution plan. Pursuant to the Act, the Company has made monthly contributions equal to 6% of each employee's monthly salary to employees' pension accounts. Accordingly, the Company recognized expenses of NT$4,154,345 thousand and NT$3,663,757 thousand for the years ended December 31, 2023 and 2022, respectively.

b. Defined benefit plans

The Company has defined benefit plans under the R.O.C. Labor Standards Law that provide benefits based on an employee's length of service and average monthly salary for the six-month period prior to retirement. The Company contributes an amount equal to 2% of salaries paid each month to their respective pension funds (the Funds), which are administered by the Labor Pension Fund Supervisory Committee (the Committee) and deposited in the Committee's name in the Bank of Taiwan. Before the end of each year, the Company assesses the balance in the Funds. If the amount of the balance in the Funds is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company is required to fund the difference in one appropriation that should be made before the end of March of the next year. The Funds are operated and managed by the government's designated authorities; as such, the Company does not have any right to intervene in the investments of the Funds.

Amounts recognized in respect of these defined benefit plans were as follows:

	Years Ended December 31	
	2023	**2022**
Current service cost	$ 139,101	$ 134,376
Net interest expense	142,291	74,265
Components of defined benefit costs recognized in profit or loss	281,392	208,641
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(16,252)	(429,948)
Actuarial loss arising from experience adjustments	68,342	1,413,760
Actuarial (gain) loss arising from changes in financial assumptions	571,266	(160,752)
Components of defined benefit costs recognized in other comprehensive income	623,356	823,060
Total	$ 904,748	$ 1,031,701

The pension costs of the aforementioned defined benefit plans were recognized in profit or loss by the following categories:

	Years Ended December 31	
	2023	**2022**
Cost of revenue	$ 182,333	$ 135,125
Research and development expenses	76,120	55,632
General and administrative expenses	19,248	15,129
Marketing expenses	3,691	2,755
	$ 281,392	$ 208,641

The amounts arising from the defined benefit obligation of the Company were as follows:

	December 31, 2023	December 31, 2022
Present value of defined benefit obligation	$ 17,995,066	$ 17,483,951
Fair value of plan assets	(8,737,842)	(8,162,860)
Net defined benefit liability	$ 9,257,224	$ 9,321,091

Movements in the present value of the defined benefit obligation were as follows:

	Years Ended December 31	
	2023	2022
Balance, beginning of year	$ 17,483,951	$ 16,585,442
Current service cost	139,101	134,376
Interest expense	303,970	120,791
Remeasurement:		
Actuarial loss arising from experience adjustments	68,342	1,413,760
Actuarial (gain) loss arising from changes in financial assumptions	571,266	(160,752)
Benefits paid from plan assets	(556,455)	(585,343)
Benefits paid directly by the Company	(15,109)	(24,323)
Balance, end of year	$ 17,995,066	$ 17,483,951

Movements in the fair value of the plan assets were as follows:

	Years Ended December 31	
	2023	2022
Balance, beginning of year	$ 8,162,860	$ 5,548,563
Interest income	161,679	46,526
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	16,252	429,948
Contributions from employer	953,506	2,723,166
Benefits paid from plan assets	(556,455)	(585,343)
Balance, end of year	$ 8,737,842	$ 8,162,860

The fair value of the plan assets by major categories at the end of reporting period was as follows:

	December 31, 2023	December 31, 2022
Cash	$ 1,351,744	$ 1,337,893
Equity instruments	4,998,919	4,696,909
Debt instruments	2,387,179	2,128,058
	$ 8,737,842	$ 8,162,860

The actuarial valuations of the present value of the defined benefit obligation were carried out by qualified actuaries. The principal assumptions of the actuarial valuation were as follows:

	Measurement Date	
	December 31, 2023	**December 31, 2022**
Discount rate	1.40%	1.80%
Future salary increase rate	4.00%	4.00%

Through the defined benefit plans under the R.O.C. Labor Standards Law, the Company is exposed to the following risks:

1) Investment risk: The pension funds are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the government's designated authorities or under the mandated management. However, under the R.O.C. Labor Standards Law, the rate of return on assets shall not be less than the average interest rate on a two-year time deposit published by the local banks and the government is responsible for any shortfall in the event that the rate of return is less than the required rate of return.

2) Interest risk: A decrease in the government bond interest rate will increase the present value of the defined benefit obligation; however, this will be partially offset by an increase in the return on the debt investments of the plan assets.

   Assuming a hypothetical decrease in interest rate at the end of the reporting period contributed to a decrease of 0.5% (and not below 0.0%) in the discount rate and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$757,663 thousand and NT$766,692 thousand as of December 31, 2023 and 2022, respectively.

3) Salary risk: The present value of the defined benefit obligation is calculated by reference to the future salaries of plan participants. As such, an increase in the salary of the plan participants will increase the present value of the defined benefit obligation.

   Assuming the expected salary rate increases by 0.5% at the end of the reporting period and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$735,167 thousand and NT$746,933 thousand as of December 31, 2023 and 2022, respectively.

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

Furthermore, in presenting the above sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation liability.

The Company expects to make contributions of NT$991,646 thousand to the defined benefit plans in the next year starting from December 31, 2023. The weighted average duration of the defined benefit obligation is 8 years.

18. EQUITY

a. Capital stock

	December 31, 2023	December 31, 2022
Authorized shares (in thousands)	28,050,000	28,050,000
Authorized capital	$ 280,500,000	$ 280,500,000
Issued and paid shares (in thousands)	25,932,071	25,930,380
Issued capital	$ 259,320,710	$ 259,303,805

The par value of issued common shares is NT$10 per share. A holder of common shares has one vote for each common share and is entitled to receive dividends.

The authorized shares include 500,000 thousand shares allocated for the exercise of employee stock options.

On March 1, 2023 and March 1, 2022, the Company issued employee restricted stock awards (RSAs) for its employees in a total of 2,110 thousand shares and 1,387 thousand shares, respectively, with a par value of NT$10 per share. The aforementioned issuance of new shares was approved by the relevant authority and the registration has been completed.

During the first quarter of 2023, the Company reclaimed 419 thousand employee restricted shares that were unvested. On May 9, 2023, the Company's Board of Directors resolved to cancel the aforementioned shares. Subsequently, the Company completed the registration for share cancellation. Refer to Note 25 for information on RSAs.

On May 10, 2022, the Company's Board of Directors resolved to cancel 1,387 thousand treasury shares. Refer to Note 18(e) for information.

As of December 31, 2023, the Company's total issued and outstanding ADSs were 1,063,103 thousand units, representing 5,315,513 thousand common shares.

b. Capital surplus

The categories of uses and the sources of capital surplus based on regulations were as follows:

	December 31, 2023	December 31, 2022
May be used to offset a deficit, distributed as cash dividends, or transferred to share capital		
Additional paid-in capital	$ 24,406,854	$ 24,183,645
From merger	22,803,291	22,803,291
From convertible bonds	8,892,371	8,892,371
From difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal	8,406,282	8,406,282
Donations - donated by shareholders	11,275	11,275

(Continued)

	December 31, 2023	December 31, 2022
May only be used to offset a deficit		
From share of changes in equities of subsidiaries	$ 4,199,936	$ 4,229,892
From share of changes in equities of associates	302,396	311,863
Donations – unclaimed dividend	70,093	53,680
May not be used for any purpose		
Employee restricted shares	783,883	438,029
	$ 69,876,381	$ 69,330,328

(Concluded)

If such capital surplus is distributed as transferred to share capital, it is limited to a certain percentage of the Company's paid-in capital each year.

c. Retained earnings and dividend policy

The Company's Articles of Incorporation provide that, earnings distribution may be made on a quarterly basis after the close of each quarter. Distribution of earnings by way of cash dividends should be approved by the Company's Board of Directors and reported to the Company's shareholders in its meeting. When allocating earnings, the Company shall first estimate and reserve the taxes to be paid, offset its losses, set aside a legal capital reserve at 10% of the remaining earnings (until the accumulated legal capital reserve equals the Company's paid-in capital), then set aside a special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge. Any balance left over shall be allocated according to relevant laws and the Company's Articles of Incorporation.

The Company's Articles of Incorporation also provide that profits of the Company may be distributed by way of cash dividend and/or stock dividend. However, distribution of earnings shall be made preferably by way of cash dividend. Distribution of earnings may also be made by way of stock dividend, provided that the ratio for stock dividend shall not exceed 50% of the total distribution.

The legal capital reserve may be used to offset a deficit, or be distributed as dividends in cash or stocks for the portion in excess of 25% of the paid-in capital if the Company incurs no loss.

Pursuant to existing regulations, the Company is required to set aside an additional special capital reserve equivalent to the net debit balance of the other components of stockholders' equity, such as the accumulated balance of the foreign currency translation reserve, the effectiveness of hedges of net investments in foreign operations, unrealized valuation gain or loss from fair value through other comprehensive income financial assets and gain or loss from changes in fair value of hedging instruments in cash flow hedges, etc. For the subsequent decrease in the deduction amount to stockholders' equity, any special reserve appropriated may be reversed to the extent that the net debit balance reverses.

The appropriations of 2023, 2022 and 2021 quarterly earnings have been approved by the Company's Board of Directors in its meeting, respectively. The appropriations and cash dividends per share were as follows:

Resolution Date of the Company's Board of Directors in its meeting	**Fourth Quarter of 2023**	**Third Quarter of 2023**	**Second Quarter of 2023**	**First Quarter of 2023**
	February 6, 2024	**November 14, 2023**	**August 8, 2023**	**May 9, 2023**
Special capital reserve	$ 28,020,822	$ (17,228,363)	$ (6,365,562)	$ 3,273,452
Cash dividends to shareholders	$ 90,762,248	$ 90,762,248	$ 77,796,213	$ 77,796,213
Cash dividends per share (NT$)	$ 3.50	$ 3.50	$ 3.00	$ 3.00

Resolution Date of the Company's Board of Directors in its meeting	Fourth Quarter of 2022 February 14, 2023	Third Quarter of 2022 November 8, 2022	Second Quarter of 2022 August 9, 2022	First Quarter of 2022 May 10, 2022
Special capital reserve	$ 17,166,163	$ (31,910,353)	$ (12,002,798)	$ (15,541,054)
Cash dividends to shareholders	$ 71,308,546	$ 71,308,547	$ 71,308,546	$ 71,308,546
Cash dividends per share (NT$)	$ 2.75	$ 2.75	$ 2.75	$ 2.75

Resolution Date of the Company's Board of Directors in its meeting	Fourth Quarter of 2021 February 15, 2022	Third Quarter of 2021 November 9, 2021	Second Quarter of 2021 August 10, 2021	First Quarter of 2021 June 9, 2021
Special capital reserve	$ 3,304,303	$ 710,169	$ 10,201,220	$ (6,287,050)
Cash dividends to shareholders	$ 71,308,546	$ 71,308,547	$ 71,308,546	$ 71,308,546
Cash dividends per share (NT$)	$ 2.75	$ 2.75	$ 2.75	$ 2.75

The special capital reserve for 2023 is to be presented for approval in the Company's shareholders' meeting to be held on June 4, 2024 (expected).

The quarterly cash dividends per share is affected by the subsequent number of outstanding ordinary shares, the information of the actual payout is available at the Market Observation Post System website.

d. Others

Changes in others were as follows:

	Year Ended December 31, 2023				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ (11,743,301)	$ (10,056,353)	$ 1,479,181	$ (185,153)	$ (20,505,626)
Exchange differences arising on translation of foreign operations	(14,264,009)	-	-	-	(14,264,009)
Gain (Loss) on hedging instruments designated as hedges of net investments in foreign operations	618,180	-	-	-	618,180
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	(53,665)	-	-	(53,665)
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(151,944)	-	-	(151,944)
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	39,898	-	39,898
Transferred to initial carrying amount of hedged items	-	-	(45,181)	-	(45,181)
Issuance of shares	-	-	-	(585,968)	(585,968)
Share-based payment expenses recognized	-	-	-	477,687	477,687
Share of other comprehensive income (loss) of subsidiaries and associates	72,361	6,162,059	(78,023)	-	6,156,397
Income tax effect	-	(25)	-	-	(25)
Balance, end of year	$ (25,316,769)	$ (4,099,928)	$ 1,395,875	$ (293,434)	$ (28,314,256)

	Year Ended December 31, 2022				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)
Exchange differences arising on translation of foreign operations	51,030,928	-	-	-	51,030,928
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	18,979	-	-	18,979
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(303,242)	-	-	(303,242)
Transferred to initial carrying amount of hedged items	-	-	(52,929)	-	(52,929)
Issuance of shares	-	-	-	(451,899)	(451,899)
Share-based payment expenses recognized	-	-	-	266,746	266,746
Share of other comprehensive income (loss) of subsidiaries and associates	529,132	(10,346,321)	1,405,538	-	(8,411,651)
Income tax effect	-	(79)	6,036	-	5,957
Balance, end of year	$ (11,743,301)	$ (10,056,353)	$ 1,479,181	$ (185,153)	$ (20,505,626)

The aforementioned other equity includes the changes in other equities of the Company and the Company's share of its subsidiaries and associates.

e. Treasury stock

For the Company's shareholders' interests, the Company's Board of Directors approved a share buyback program on February 15, 2022 to repurchase 1,387 thousand shares. The Company has completed the aforementioned share buyback program during the first quarter of 2022. On May 10, 2022, the Company's Board of Directors resolved to cancel the 1,387 thousand shares. Subsequently, TSMC completed the registration for share cancellation.

19. NET REVENUE

a. Disaggregation of revenue from contracts with customers

	Years Ended December 31	
Product	**2023**	**2022**
Wafer	$1,881,677,167	$1,989,174,117
Others	271,607,928	263,146,444
	$2,153,285,095	$2,252,320,561

	Years Ended December 31	
Geography	**2023**	**2022**
Taiwan	$ 149,777,343	$ 210,470,783
United States	1,404,615,395	1,488,848,778
China	267,154,140	245,168,746
Japan	132,072,000	119,099,336
Europe, the Middle East and Africa	117,348,237	123,767,140
Others	82,317,980	64,965,778
	$2,153,285,095	$2,252,320,561

The Company categorized the net revenue mainly based on the countries where the customers are headquartered.

Platform	Years Ended December 31 2023	Years Ended December 31 2022
High Performance Computing	$ 931,334,614	$ 927,459,536
Smartphone	810,053,991	884,505,210
Internet of Things	161,685,797	194,878,453
Automotive	133,741,115	115,678,391
Digital Consumer Electronics	46,994,528	56,317,962
Others	69,475,050	73,481,009
	$2,153,285,095	$2,252,320,561

Resolution	Years Ended December 31 2023	Years Ended December 31 2022
3-nanometer	$ 106,434,419	$ -
5-nanometer	628,017,081	503,914,841
7-nanometer	357,624,994	536,730,486
10-nanometer	28,577	24,775
16-nanometer	191,789,213	258,793,242
20-nanometer	10,379,144	8,848,885
28-nanometer	187,423,174	206,578,337
40/45-nanometer	115,017,630	145,748,015
65-nanometer	107,582,277	93,292,327
90-nanometer	25,772,497	40,280,729
0.11/0.13 micron	47,043,623	57,915,290
0.15/0.18 micron	86,716,114	110,631,548
0.25 micron and above	17,848,424	26,415,642
Wafer revenue	$1,881,677,167	$1,989,174,117

b. Contract balances

	December 31, 2023	December 31, 2022	January 1, 2022
Contract liabilities (classified under accrued expenses and other current liabilities)	$ 47,760,098	$ 62,380,554	$ 33,951,838

The changes in the contract liability balances primarily result from the timing difference between the satisfaction of performance obligation and the customer's payment.

The Company recognized revenue from the beginning balance of contract liability, which amounted to NT$61,349,317 thousand and NT$33,365,181 thousand for the years ended December 31, 2023 and 2022, respectively.

c. Temporary receipts from customers

	December 31, 2023	December 31, 2022
Current portion (classified under accrued expenses and other current liabilities)	$ 114,639,514	$ 107,723,580
Noncurrent portion (classified under other noncurrent liabilities)	163,655,128	168,399,207
	$ 278,294,642	$ 276,122,787

The Company's temporary receipts from customer are payments made by customers to the Company to retain the Company's capacity. When the terms and conditions set forth in the agreements are subsequently satisfied, the treatment of temporary receipts, either by refund or by accounts receivable offsetting, will be determined by mutual consent.

d. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms. As of December 31, 2023 and 2022, the aforementioned refund liabilities amounted to NT$36,144,370 thousand and NT$50,980,669 thousand (classified under accrued expenses and other current liabilities), respectively.

20. INTEREST INCOME

	Years Ended December 31	
	2023	2022
Interest income		
Cash and cash equivalents	$ 17,414,490	$ 5,644,170
Financial assets at amortized cost	411,061	313,694
	$ 17,825,551	$ 5,957,864

21. FINANCE COSTS

	Years Ended December 31	
	2023	2022
Interest expense		
Corporate bonds	$ 5,019,826	$ 3,888,669
Lease liabilities	334,971	231,037
Bank loans	262	279
Others	2,103	1,228
Less: Capitalized interest under property, plant and equipment	(756,369)	(880,807)
	$ 4,600,793	$ 3,240,406

Information about capitalized interest is as follows:

	Years Ended December 31	
	2023	2022
Capitalization rate	1.08%-1.20%	0.72%-1.20%

22. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2023	2022
Gain on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	$ 7,243,770	$ 2,518,506
The accrual of expected credit loss of financial assets		
Financial assets at amortized cost	(5,789)	(10,341)
Other gains, net	356,151	545,116
	$ 7,594,132	$ 3,053,281

23. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2023	2022
Current income tax expense		
Current tax expense recognized in the current year	$ 134,436,152	$ 144,561,484
Income tax adjustments on prior years	34,145	(489,638)
Other income tax adjustments	234,902	205,529
	134,705,199	144,277,375
Deferred income tax expense (benefit)		
The origination and reversal of temporary differences	3,623,335	(24,810,515)
Investment tax credits	945,038	4,676,707
	4,568,373	(20,133,808)
Income tax expense recognized in profit or loss	$ 139,273,572	$ 124,143,567

A reconciliation of income before income tax and income tax expense recognized in profit or loss was as follows:

	Years Ended December 31	
	2023	2022
Income before tax	$ 977,771,236	$1,140,673,816
Income tax expense at the statutory rate	$ 195,554,247	$ 228,134,763
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	(7,861,524)	12,804,635
Tax-exempt income	-	(157,955,934)
Additional income tax under the Alternative Minimum Tax Act	-	61,578,020
Additional income tax on unappropriated earnings	9,468,943	-
The origination and reversal of temporary differences	3,623,335	(24,810,515)
Income tax credits	(61,780,476)	4,676,707
	139,004,525	124,427,676
Income tax adjustments on prior years	34,145	(489,638)
Other income tax adjustments	234,902	205,529
Income tax expense recognized in profit or loss	$ 139,273,572	$ 124,143,567

For the years ended December 31, 2023 and 2022, the Company applied a tax rate of 20% subject to the R.O.C. Income Tax Law.

b. Deferred income tax balance

The analysis of deferred income tax assets and liabilities was as follows:

	December 31, 2023	December 31, 2022
Deferred income tax assets		
Temporary differences		
Depreciation	$ 40,726,261	$ 44,989,153
Refund liability	9,348,138	12,002,094
Unrealized exchange losses	7,096,229	5,779,739
Unrealized loss on inventories	2,702,288	2,260,011
Net defined benefit liability	1,729,672	1,722,005
Investment tax credits	-	945,038
Others	753,473	10,021
	$ 62,356,061	$ 67,708,061
Deferred income tax liabilities		
Temporary differences		
Others	$ -	$ (908,273)

	Year Ended December 31, 2023			
		Recognized in		
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Balance, End of Year
Deferred income tax assets				
Temporary differences				
Depreciation	$ 44,989,153	$ (4,262,892)	$ -	$ 40,726,261
Refund liability	12,002,094	(2,653,956)	-	9,348,138
Unrealized exchange losses	5,779,739	1,316,490	-	7,096,229
Unrealized loss on inventories	2,260,011	442,277	-	2,702,288
Net defined benefit liability	1,722,005	(117,004)	124,671	1,729,672
Investment tax credits	945,038	(945,038)	-	-
Others	10,021	743,477	(25)	753,473
	$ 67,708,061	$ (5,476,646)	$ 124,646	$ 62,356,061
Deferred income tax liabilities				
Temporary differences				
Others	$ (908,273)	$ 908,273	$ -	$ -

	Year Ended December 31, 2022			
		Recognized in		
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Balance, End of Year
Deferred income tax assets				
Temporary differences				
Depreciation	$ 34,146,437	$ 10,842,716	$ -	$ 44,989,153
Refund liability	5,903,698	6,098,396	-	12,002,094
Unrealized exchange losses	-	5,779,739	-	5,779,739
Unrealized loss on inventories	861,924	1,398,087	-	2,260,011
Net defined benefit liability	1,237,086	(249,116)	734,035	1,722,005
Investment tax credits	5,621,745	(4,676,707)	-	945,038
Others	10,100	-	(79)	10,021
	$ 47,780,990	$ 19,193,115	$ 733,956	$ 67,708,061
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	$ (706,311)	$ 706,311	$ -	$ -
Others	(1,142,655)	234,382	-	(908,273)
	$ (1,848,966)	$ 940,693	$ -	$ (908,273)

c. The deductible temporary differences for which no deferred income tax assets have been recognized

As of December 31, 2023 and 2022, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT$52,686,244 thousand and NT$26,790,935 thousand, respectively.

d. Unused tax-exemption information

As of December 31,2022, the profits generated from the following project of the Company are exempt from income tax for a five-year period:

	Tax-exemption Period
Construction and expansion of 2009	2018 to 2022

e. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2023 and 2022, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT$254,182,901 thousand and NT$222,682,649 thousand, respectively.

f. Income tax examination

The tax authorities have examined income tax returns of the Company through 2021. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

24. EARNINGS PER SHARE

	Years Ended December 31	
	2023	2022
Basic EPS	$ 32.34	$ 39.20
Diluted EPS	$ 32.34	$ 39.20

EPS is computed as follows:

	Years Ended December 31	
	2023	2022
Basic EPS		
Net income available to common shareholders	$ 838,497,664	$1,016,530,249
Weighted average number of common shares outstanding used in the computation of basic EPS (in thousands)	25,929,223	25,929,190
Basic EPS (in dollars)	$ 32.34	$ 39.20
Diluted EPS		
Net income available to common shareholders	$ 838,497,664	$1,016,530,249
Weighted average number of common shares outstanding used in the computation of basic EPS (in thousands)	25,929,223	25,929,190
Effects of all dilutive potential common shares (in thousands)	44	193
Weighted average number of common shares used in the computation of diluted EPS (in thousands)	25,929,267	25,929,383
Diluted EPS (in dollars)	$ 32.34	$ 39.20

25. SHARE-BASED PAYMENT ARRANGEMENTS

a. Equity-settled share-based payment- RSAs

The RSAs in each year are as follows:

	2023 RSAs	2022 RSAs	2021 RSAs
Resolution Date of the Company's shareholders in its meeting	June 6, 2023	June 8, 2022	July 26, 2021
Resolution Date of the Company's Board of Directors in its meeting	February 6, 2024	February 14, 2023	February 15, 2022
Issuance of stocks (in thousands)	2,960	2,110	1,387
Eligible employees	Executive officers	Executive officers	Executive officers
Grant date/Issuance date	March 1, 2024	March 1, 2023	March 1, 2022

Vesting conditions of the aforementioned arrangement are as follow:

1) The RSAs granted to eligible employees can only be vested if

- the employee remains employed by the Company or the subsidiaries on the last date of each vesting period;
- during the vesting period, the employee may not breach any agreement with the Company or the subsidiaries or violate the Company's work rules; and
- certain employee performance metrics and the Company's or the subsidiaries' business performance metrics are met.

2) The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of the Company's business performance metrics.

3) For eligible executive officers of the Company: The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on the Company's relative Total Shareholder Return ("TSR", including capital gains and dividends) achievement to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation and People Development Committee evaluation of the Company's Environmental, Social, and Governance ("ESG") achievements. The number of shares so calculated should be rounded down to the nearest integral.

The Company's TSR relative to the TSR of S&P 500 IT Index	Ratio of Shares to be Vested
Above the Index by X percentage points	50% + X * 2.5%, with the maximum of 100%
Equal to the Index	50%
Below the Index by X percentage points	50% - X * 2.5%, with the minimum of 0%

4) Restrictions imposed on the employees' rights in the RSAs before the vesting conditions are fulfilled:

- During each vesting period, no employee granted RSAs, except for inheritance, may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs.

- Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and etc. shall be exercised by the engaged trustee/custodian on the employee's behalf. Any other shareholder rights including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of the Company.

5) Details of granted RSAs in each year are as follows:

	2022 RSAs Number of Shares (In Thousands)	2021 RSAs Number of Shares (In Thousands)
Balance, beginning of year	-	1,387
Issuance of stocks	2,110	-
Vested shares	-	(274)
Canceled shares	-	(419)
Balance, end of year	2,110	694
Weighted-average fair value of RSAs (in dollars)	$ 277.71	$ 325.81

The RSAs in each year are measured at fair value at grant date by using the binominal tree approach. Relevant information is as follows:

	2022 RSAs March 1, 2023	2021 RSAs March 1, 2022
Stock price at measurement date (in dollars)	$ 511	$ 604
Expected price volatility	29.34%-32.11%	25.34%-28.28%
Expected life	1-3 years	1-3 years
Risk-free interest rate	1.06%	0.57%

Refer to Note 26 for the compensation costs of the RSAs recognized by the Company.

On February 6, 2024, the Company's Board of Directors approved the issuance of RSAs for year 2024 of no more than 4,185 thousand common shares. The grants will be made free of charge. The actual number of shares to be issued will be resolved by the Board of Directors after the RSAs is approved at the shareholders' meeting and by the competent authority.

b. Cash-settled share-based payment arrangements

The cash-settled share-based payment arrangements in each year are as follows:

	2023 Plan	2022 Plan	2021 Plan
Resolution Date of the Company's Board of Directors in its meeting	February 6, 2024	February 14, 2023	February 15, 2022
Issuance of units (in thousands) (Note)	550	400	236
Grant date	March 1, 2024	March 1, 2023	March 1, 2022

Note: One unit of the right represents a right to the market value of one the Company's common share when vested.

The vesting conditions and the ratio of units to be vested for key management personnel of the plan are the same as the aforementioned RSAs.

The fair value of compensation costs for the cash-settled share-based payment was measured by using binominal tree approach and will be measured at each reporting period until settlement. Relevant information is as follows:

	Years Ended December 31		
	2023		2022
	2022 Plan	2021 Plan	2021 Plan
Stock price at measurement date (in dollars)	$ 593	$ 593	$ 451
Expected price volatility	24.76%-29.05%	24.76%-29.05%	28.80%-32.19%
Residual life	1-3 years	1-2 years	1-3 years
Risk-free interest rate	1.15%	1.14%	1.09%

Refer to Note 26 for the compensation costs of the cash-settled share-based payment recognized by the Company. As of December 31, 2023 and 2022, the liabilities under cash-settled share-based payment arrangement amounted to NT$62,695 thousand and NT$30,757 thousand, respectively.

26. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2023	2022
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	$ 471,343,567	$ 385,647,215
Recognized in operating expenses	28,951,931	27,939,678
Recognized in other operating income and expenses	5,273	8,189
	$ 500,300,771	$ 413,595,082

	Years Ended December 31	
	2023	2022
b. Amortization of intangible assets		
Recognized in cost of revenue	$ 6,515,540	$ 6,069,729
Recognized in operating expenses	2,682,436	2,637,232
	$ 9,197,976	$ 8,706,961
c. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	$ 4,154,345	$ 3,663,757
Defined benefit plans	281,392	208,641
	4,435,737	3,872,398
Share-based payments		
Equity-settled	482,302	266,746
Cash-settled	61,329	32,704
	543,631	299,450
Other employee benefits	195,611,221	209,410,863
	$ 200,590,589	$ 213,582,711
Employee benefits expense summarized by function		
Recognized in cost of revenue	$ 122,143,462	$ 128,714,551
Recognized in operating expenses	78,447,127	84,868,160
	$ 200,590,589	$ 213,582,711

According to the Company's Articles of Incorporation, the Company shall allocate compensation to directors and profit sharing bonus to employees of the Company not more than 0.3% and not less than 1% of annual profits during the period, respectively.

The Company accrued profit sharing bonus to employees based on a percentage of net income before income tax, profit sharing bonus to employees and compensation to directors during the period; compensation to directors was expensed based on estimated amount payable. If there is a change in the proposed amounts after the annual parent company only financial statements are authorized for issue, the differences are recorded as a change in accounting estimate. Accrued profit sharing bonus to employees is illustrated below:

	Years Ended December 31	
	2023	2022
Profit sharing bonus to employees	$ 50,090,533	$ 60,702,047

The Company's profit sharing bonus to employees and compensation to directors for 2023, 2022 and 2021 had been approved by the Board of Directors of the Company, as illustrated below:

	Years Ended December 31		
	2023	2022	2021
Resolution Date of the Company's Board of Directors in its meeting	**February 6, 2024**	**February 14, 2023**	**February 15, 2022**
Profit sharing bonus to employees	$ 50,090,533	$ 60,702,047	$ 35,601,449
Compensation to directors	$ 551,955	$ 690,128	$ 487,537

There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2023, 2022 and 2021, respectively.

The information about the appropriations of the Company's profit sharing bonus to employees and compensation to directors is available at the Market Observation Post System website.

27. CASH FLOW INFORMATION

a. Non-cash transactions

	Years Ended December 31 2023	Years Ended December 31 2022
Additions of property, plant and equipment	$ 519,821,550	$ 956,066,006
Exchange of assets	(78,036)	(275,564)
Changes in payables to contractors and equipment suppliers	115,944,500	(57,334,833)
Transferred to initial carrying amount of hedged items	39,898	-
Capitalized interests	(756,369)	(880,807)
Payments for acquisition of property, plant and equipment	$ 634,971,543	$ 897,574,802

b. Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2023	Financing Cash Flow	Non-cash Changes: Foreign Exchange Movement	Non-cash Changes: Leases Modifications	Non-cash Changes: Other Changes (Note)	Balance as of December 31, 2023
Hedging financial liabilities-bank loans	$ -	$ 27,908,580	$ (618,180)	$ -	$ -	$ 27,290,400
Bonds payable	379,230,474	67,511,319	67,916	-	57,856	437,067,565
Lease liabilities	29,623,262	(2,429,250)	-	1,552,584	334,971	29,081,567
Total	$ 408,853,736	$ 92,990,649	$ (550,264)	$ 1,552,584	$ 392,827	$ 503,239,532

	Balance as of January 1, 2022	Financing Cash Flow	Non-cash Changes: Foreign Exchange Movement	Non-cash Changes: Leases Modifications	Non-cash Changes: Other Changes (Note)	Balance as of December 31, 2022
Short-term loans	$ 114,921,333	$ (111,959,992)	$ (2,372,053)	$ -	$ (589,288)	$ -
Bonds payable	312,183,409	60,930,472	6,071,821	-	44,772	379,230,474
Lease liabilities	20,333,476	(2,076,495)	-	11,135,244	231,037	29,623,262
Total	$ 447,438,218	$ (53,106,015)	$ 3,699,768	$ 11,135,244	$ (313,479)	$ 408,853,736

Note: Other changes include discounts on short-term loans, amortization of bonds payable and financial cost of lease liabilities.

28. CAPITAL MANAGEMENT

The objective of the Company's capital management is to maintain a capital structure that ensures liquidity and supports a solid investment grade credit rating. The capital structure includes both debt and equity. The Company adjusts its capital structure mainly through changes in the level of debt and adjustments of dividend payout to shareholders.

The Company's capital management policy remained unchanged in 2023. The Company's current credit ratings are AA- from Standard & Poor's and Aa3 from Moody's, same as those as of December 31, 2022.

29. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2023	December 31, 2022
Financial assets		
FVTPL (Note 1)	$ 624,685	$ 552,255
FVTOCI (Note 2)	6,372,267	8,340,347
Amortized cost (Note 3)	944,953,016	903,070,406
	$ 951,949,968	$ 911,963,008
Financial liabilities		
FVTPL (Note 4)	$ 25,673	$ 17,468
Hedging financial liabilities	27,290,400	-
Amortized cost (Note 5)	1,124,627,242	1,161,623,982
	$1,151,943,315	$1,161,641,450

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable (net) and equity investments.

Note 3: Including cash and cash equivalents, financial assets at amortized cost, notes and accounts receivable (including related parties), other receivables, refundable deposits, and temporary payments (including those classified under other current assets and other noncurrent assets).

Note 4: Held for trading.

Note 5: Including accounts payable (including related parties), payables to contractors and equipment suppliers, cash dividends payable, accrued expenses and other current liabilities, bonds payable, guarantee deposits and other noncurrent liabilities.

b. Financial risk management objectives

The Company manages its exposure to foreign currency risk, interest rate risk, equity price risk, credit risk and liquidity risk with the objective to reduce the potentially adverse effects the market uncertainties may have on its financial performance.

The plans for material treasury activities are reviewed by the Audit and Risk Committee and/or Board of Directors in accordance with procedures required by relevant regulations or internal controls. During the implementation of such plans, the Company must comply with certain treasury procedures that provide guiding principles for overall financial risk management and segregation of duties.

c. Market risk

The Company is exposed to the financial market risks, primarily changes in foreign currency exchange rates, interest rates and equity investment prices. A portion of these risks is hedged.

Foreign currency risk

Substantially all the Company's sales are denominated in U.S. dollars and over half of its capital expenditures and equity investments are denominated in currencies other than NT dollars, primarily in U.S. dollars, Japanese yen and Euros. As a result, any significant fluctuations to its disadvantage in the exchanges rate of NT dollar against such currencies, in particular a weakening of U.S. dollar against NT dollars, would have an adverse impact on the revenue and operating profit as expressed in NT dollar. The Company uses foreign currency derivative contracts and non-derivative financial instruments, such as currency forwards, currency swaps and bank loans denominated in foreign currency, to protect against currency exchange rate risks associated with non-NT dollar-denominated assets and liabilities, certain forecasted transactions, and net investments in foreign operations. These hedges reduce, but do not entirely eliminate, the effect of foreign currency exchange rate movements on the assets and liabilities.

Based on a sensitivity analysis performed on the Company's total monetary assets and liabilities for the years ended December 31, 2023 and 2022, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT$726,145 thousand and NT$1,649,664 thousand, respectively, after taking into account hedges and offsetting positions.

Interest rate risk

The Company is exposed to interest rate risks primarily in relation to its bank deposits and bank loans. Changes in interest rates affect the interest earned on the Company's bank deposits, as well as the interest paid on its bank loans. Because all of the Company's bonds issued are fixed-rate and measured at amortized cost, changes in interest rates would not affect the future cash flows or the carrying amount.

Other price risk

The Company is exposed to equity price risk arising from financial assets at FVTOCI.

Assuming a hypothetical decrease of 10% in prices of the equity investments at the end of the reporting period for the years ended December 31, 2023 and 2022, the other comprehensive income would have decreased by NT$76,876 thousand and NT$89,297 thousand, respectively.

d. Credit risk management

Credit risk refers to the risk that a counterparty may default on its contractual obligations resulting in financial losses to the Company. The Company is exposed to credit risks from operating activities, primarily accounts receivable, and from investing activities, primarily deposits, fixed-income investments and other financial instruments with banks. Credit risk is managed separately for business related and financial related exposures. As of the end of the reporting period, the Company's maximum credit risk exposure is equal to the carrying amount of financial assets.

Business related credit risk

The Company's accounts receivable are from its customers worldwide. The majority of the Company's outstanding accounts receivable are not covered by collaterals or guarantees. While the Company has procedures to monitor and manage credit risk exposure on accounts receivable, there is no assurance such procedures will effectively eliminate losses resulting from its credit risk. This risk is heightened during periods when economic conditions worsen.

As of December 31, 2023 and 2022, the Company's ten largest customers accounted for 85% and 69% of accounts receivable, respectively. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

The Company mitigates its financial credit risk by selecting counterparties with investment grade credit ratings and by limiting the exposure to any individual counterparty. The Company regularly monitors and reviews the limit applied to counterparties and adjusts the limit according to market conditions and the credit standing of the counterparties.

The Company assesses the 12-month expected credit loss and lifetime expected credit loss based on the probability of default and loss given default provided by external credit rating agencies. The current credit risk assessment policies are as follows:

Category	Description	Basis for Recognizing Expected Credit Loss	Expected Credit Loss Ratio
Performing	Credit rating is investment grade on valuation date	12 months expected credit loss	0-0.1%
Doubtful	Credit rating is non-investment grade on valuation date	Lifetime expected credit loss-not credit impaired	-
In default	Credit rating is CC or below on valuation date	Lifetime expected credit loss-credit impaired	-
Write-off	There is evidence indicating that the debtor is in severe financial difficulty and the Company has no realistic prospect of recovery	Amount is written off	-

For the years ended December 31, 2023 and 2022, the expected credit loss increased NT$5,789 thousand and NT$10,341 thousand, respectively. The changes were mainly due to increased investment amount and adjusted investment portfolio.

e. Liquidity risk management

The objective of liquidity risk management is to ensure the Company has sufficient liquidity to fund its business operations over the next 12 months. The Company manages its liquidity risk by maintaining adequate cash and cash equivalents, financial assets at amortized cost-current and sufficient cost-efficient funding.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments, including principal and interest.

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
December 31, 2023					
Non-derivative financial liabilities					
Hedging financial liabilities-bank loans	$ 27,290,400	$ -	$ -	$ -	$ 27,290,400
Accounts payable (including related parties)	57,763,188	-	-	-	57,763,188
Payables to contractors and equipment suppliers	84,146,173	-	-	-	84,146,173
Accrued expenses and other current liabilities	191,976,278	-	-	-	191,976,278
Bonds payable	12,455,260	96,892,557	190,937,676	222,606,055	522,891,548
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	2,457,570	4,475,101	4,203,205	21,136,670	32,272,546
Others	-	165,188,432	6,303,135	2,908,666	174,400,233
	376,088,869	266,556,090	201,444,016	246,651,391	1,090,740,366
Derivative financial instruments					
Forward exchange contracts					
Outflows	51,741,026	-	-	-	51,741,026
Inflows	(52,317,678)	-	-	-	(52,317,678)
	(576,652)	-	-	-	(576,652)
	$ 375,512,217	$ 266,556,090	$ 201,444,016	$ 246,651,391	$ 1,090,163,714

(Continued)

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
December 31, 2022					
Non-derivative financial liabilities					
Accounts payable (including related parties)	$ 58,783,586	$ -	$ -	$ -	$ 58,783,586
Payables to contractors and equipment suppliers	200,046,018	-	-	-	200,046,018
Accrued expenses and other current liabilities	202,361,596	-	-	-	202,361,596
Bonds payable	22,247,420	39,372,048	160,243,071	228,241,509	450,104,048
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	2,356,314	4,358,739	4,163,558	21,795,680	32,674,291
Others	-	166,266,719	10,518,481	783,181	177,568,381
	485,794,934	209,997,506	174,925,110	250,820,370	1,121,537,920
Derivative financial instruments					
Forward exchange contracts					
Outflows	74,107,091	-	-	-	74,107,091
Inflows	(74,837,641)	-	-	-	(74,837,641)
	(730,550)	-	-	-	(730,550)
	$ 485,064,384	$ 209,997,506	$ 174,925,110	$ 250,820,370	$ 1,120,807,370

(Concluded)

Note: Information about the maturity analysis for lease liabilities more than 5 years:

	5-10 Years	10-15 Years	15-20 Years	More Than 20 Years	Total
December 31, 2023					
Lease liabilities	$ 9,629,306	$ 7,088,110	$ 4,101,046	$ 318,208	$ 21,136,670
December 31, 2022					
Lease liabilities	$ 9,497,599	$ 7,291,192	$ 4,222,404	$ 784,485	$ 21,795,680

f. Fair value of financial instruments

1) Fair value measurements recognized in the parent company only balance sheets

Fair value measurements are grouped into Levels 1 to 3 based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;

- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and

- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

2) Fair value of financial instruments that are measured at fair value on a recurring basis

Fair value hierarchy

The following table presents the Company's financial assets and liabilities measured at fair value on a recurring basis:

	December 31, 2023		
	Level 2	Level 3	Total
Financial assets at FVTPL			
Mandatorily measured at FVTPL			
Forward exchange contracts	$ 624,685	$ -	$ 624,685
Financial assets at FVTOCI			
Investments in equity instruments			
Non-publicly traded equity investments	$ -	$ 960,950	$ 960,950
Notes and accounts receivable, net	5,411,317	-	5,411,317
	$ 5,411,317	$ 960,950	$ 6,372,267
Financial liabilities at FVTPL			
Held for trading			
Forward exchange contracts	$ 25,673	$ -	$ 25,673

	December 31, 2022		
	Level 2	Level 3	Total
Financial assets at FVTPL			
Mandatorily measured at FVTPL			
Forward exchange contracts	$ 552,255	$ -	$ 552,255
Financial assets at FVTOCI			
Investments in equity instruments			
Non-publicly traded equity investments	$ -	$ 1,014,741	$ 1,014,741
Notes and accounts receivable, net	7,325,606	-	7,325,606
	$ 7,325,606	$ 1,014,741	$ 8,340,347
Financial liabilities at FVTPL			
Held for trading			
Forward exchange contracts	$ 17,468	$ -	$ 17,468

Reconciliation of Level 3 fair value measurements of financial assets

The financial assets measured at Level 3 fair value were equity investments classified as financial assets at FVTOCI. Reconciliations for the years ended December 31, 2023 and 2022 were as follows:

	Years Ended December 31	
	2023	**2022**
Balance, beginning of year	$ 1,014,741	$ 998,400
Recognized in other comprehensive income	(53,666)	18,979
Disposals and proceeds from return of capital of investments	(125)	(2,638)
Balance, end of year	$ 960,950	$ 1,014,741

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of financial assets and financial liabilities are determined as follows:

- Forward exchange contracts are measured using forward exchange rates and discount rates derived from quoted market prices.
- The fair value of accounts receivable classified as at FVTOCI is determined by the present value of future cash flows based on the discount rate that reflects the credit risk of counterparties.

Valuation techniques and assumptions used in Level 3 fair value measurement

The fair values of non-publicly traded equity investments are mainly determined by using the asset approach and market approach.

The asset approach takes into account the net asset value measured at the fair value by independent parties.

The market approach is used to arrive at their fair values, for which the recent financing activities of investees, the market transaction prices of the similar companies and market conditions are considered.

3) Fair value of financial instruments that are not measured at fair value

Except as detailed in the following table, the Company considers that the carrying amounts of financial instruments in the parent company only financial statements that are not measured at fair value approximate their fair values.

Fair value hierarchy

The table below sets out the fair value hierarchy for the Company's financial assets and liabilities which are not required to be measured at fair value:

	December 31, 2023	
	Carrying Amount	**Level 2 Fair Value**
Financial assets		
Financial assets at amortized costs		
Commercial paper	$ 18,371,705	$ 18,385,329

(Continued)

	December 31, 2023	
	Carrying Amount	Level 2 Fair Value
Financial liabilities		
Financial liabilities at amortized costs		
Bonds payable	$ 446,867,565	$ 418,841,652

(Concluded)

	December 31, 2022	
	Carrying Amount	Level 2 Fair Value
Financial assets		
Financial assets at amortized costs		
Commercial paper	$ 48,732,476	$ 48,882,028
Financial liabilities		
Financial liabilities at amortized costs		
Bonds payable	$ 379,230,474	$ 349,956,767

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair value of the Company's bonds payable is determined by quoted market prices provided by third party pricing services.

The fair value of commercial paper is determined by the present value of future cash flows based on the discounted curves that are derived from the quoted market prices.

30. RELATED PARTY TRANSACTIONS

The significant transactions between the Company and its related parties, other than those disclosed in other notes, are summarized as follows:

a. Related party name and categories

Related Party Name	Related Party Categories
TSMC China	Subsidiaries
TSMC Nanjing	Subsidiaries
TSMC Arizona	Subsidiaries
VisEra Tech	Subsidiaries
TSMC North America	Subsidiaries
TSMC Europe	Subsidiaries
TSMC JDC	Subsidiaries
TSMC 3DIC	Subsidiaries
JASM	Subsidiaries
TSMC Japan	Subsidiaries
TSMC Korea	Subsidiaries
TSMC Design Technology Canada Inc. (TSMC Canada)	Indirect Subsidiaries

(Continued)

Related Party Name	Related Party Categories
TSMC Technology, Inc. (TSMC Technology)	Indirect Subsidiaries
TSMC Washington, LLC (TSMC Washington) (Note)	Indirect Subsidiaries
GUC	Associates
VIS	Associates
SSMC	Associates
Xintec	Associates

(Concluded)

Note: WaferTech, LLC was renamed to TSMC Washington, LLC in December 2023.

b. Net revenue

		Years Ended December 31	
		2023	2022
Item	Related Party Name/Categories		
Net revenue from sale of goods	TSMC North America	$1,459,559,406	$1,538,849,403
	Associates	8,903,425	11,356,410
	Other subsidiaries	579,810	187,169
		$1,469,042,641	$1,550,392,982

c. Purchases

	Years Ended December 31	
	2023	2022
Related Party Categories		
Subsidiaries	$ 96,198,620	$ 81,923,311
Associates	4,562,206	6,422,831
	$ 100,760,826	$ 88,346,142

d. Receivables from related parties

Item	Related Party Name/Categories	December 31, 2023	December 31, 2022
Receivables from related parties	TSMC North America	$ 154,789,324	$ 171,738,863
	Associates	471,728	1,300,302
	Other subsidiaries	825	5,647
		$ 155,261,877	$ 173,044,812
Other receivables from related parties	TSMC North America	$ 3,747,684	$ 6,184,798
	Other subsidiaries	540,767	104,640
	Associates	71,871	68,487
		$ 4,360,322	$ 6,357,925

e. Other noncurrent assets

Item	Related Party Name	December 31, 2023	December 31, 2022
Temporary payments	JASM	$ 12,132,766	$ 6,925,782

f. Payables to related parties

Item	Related Party Name/Categories	December 31, 2023	December 31, 2022
Payables to related parties	TSMC Nanjing	$ 5,064,282	$ 4,105,919
	TSMC China	2,312,769	2,296,083
	Xintec	1,020,153	1,047,374
	Other subsidiaries	1,176,420	2,006,484
	Other associates	546,071	595,184
		$ 10,119,695	$ 10,051,044

g. Accrued expenses and other current liabilities

Item	Related Party Name/Categories	December 31, 2023	December 31, 2022
Other payables and other current liabilities	Subsidiaries	$ 1,150,882	$ 961,365
	Associates	1,666,113	111,834
		$ 2,816,995	$ 1,073,199
Temporary receipts	TSMC North America	$ 99,904,122	$ 97,634,360
	Associates	153,735	-
		$ 100,057,857	$ 97,634,360

h. Other noncurrent liabilities

Item	Related Party Name	December 31, 2023	December 31, 2022
Temporary receipts	TSMC North America	$ 134,052,101	$ 142,132,113
	Associates	153,735	-
		$ 134,205,836	$ 142,132,113

i. Others

Item	Related Party Categories	Years Ended December 31 2023	2022
Manufacturing expenses	Associates	$ 5,032,445	$ 5,997,687
	Subsidiaries	11,504	21,662
		$ 5,043,949	$ 6,019,349
Research and development expenses	Subsidiaries	$ 5,865,252	$ 5,264,358
	Associates	305,073	258,008
		$ 6,170,325	$ 5,522,366

The sales prices and payment terms to related parties were not significantly different from those of sales to third parties. For other related party transactions, price and terms were determined in accordance with mutual agreements.

The Company leased factory and office from associates. The lease terms and prices were both determined in accordance with mutual agreements. The rental expenses were paid to associates monthly; the related expenses were both classified under manufacturing expenses.

The Company deferred the disposal gain or loss derived from sales of property, plant and equipment to related parties using equity method, and then recognized such gain or loss over the depreciable lives of the disposed assets.

j. Compensation of key management personnel

The compensation to directors and other key management personnel were as follows:

	Years Ended December 31 2023	2022
Short-term employee benefits	$ 3,271,057	$ 4,221,962
Post-employment benefits	3,208	2,618
Share-based payments	525,808	286,227
	$ 3,800,073	$ 4,510,807

The compensation to directors and other key management personnel were determined by the Compensation and People Development Committee of the Company in accordance with the individual performance and market trends.

31. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

Significant contingent liabilities and unrecognized commitments of the Company as of the end of the reporting period, excluding those disclosed in other notes, were as follows:

a. Under a technical cooperation agreement with Industrial Technology Research Institute, the R.O.C. Government or its designee approved by the Company can use up to 35% of the Company’s capacity provided the Company’s outstanding commitments to its customers are not prejudiced. The term of this agreement is for five years beginning from January 1, 1987 and is automatically renewed for successive periods of five years unless otherwise terminated by either party with one year prior notice. As of the end of reporting period, the R.O.C. Government did not invoke such right.

b. Under a Shareholders Agreement entered into with Philips and EDB Investments Pte Ltd. on March 30, 1999, the parties formed a joint venture company, SSMC, which is an integrated circuit foundry in Singapore. The Company's equity interest in SSMC was 32%. Nevertheless, in September 2006, Philips spun-off its semiconductor subsidiary which was renamed as NXP B.V. Further, the Company and NXP B.V. purchased all the SSMC shares owned by EDB Investments Pte Ltd. pro rata according to the Shareholders Agreement on November 15, 2006. After the purchase, the Company and NXP B.V. currently own approximately 39% and 61% of the SSMC shares, respectively. The Company and NXP B.V. are required, in the aggregate, to purchase at least 70% of SSMC's capacity, but the Company alone is not required to purchase more than 28% of the capacity. If any party defaults on the commitment and the capacity utilization of SSMC falls below a specific percentage of its capacity, the defaulting party is required to compensate SSMC for all related unavoidable costs. There was no default from the aforementioned commitment as of the end of reporting period.

c. In September 2022, Daedalus Prime LLC ("Daedalus") filed complaints in the U.S. International Trade Commission ("ITC") and the U.S. District Court for the Eastern District of Texas alleging that the Company, TSMC North America, and other companies infringe four U.S. patents. The ITC instituted an investigation in October 2022. In June 2023, Daedalus dropped two of the asserted patents in the ITC. Also in June 2023, Daedalus filed another complaint in the Eastern District of Texas alleging that the Company infringes five U.S. patents. In September 2023, the ITC granted the parties' joint motion to suspend the procedural schedule while the parties finalize the settlement agreement and then request termination of the ITC Investigation and related litigations. In October 2023, the parties jointly requested the ITC to terminate the investigation and Eastern District of Texas to dismiss the related litigations. In November 2023, the ITC investigation was terminated and the related litigations in the Eastern District of Texas were dismissed.

d. The Company entered into long-term purchase agreements of materials and supplies and agreements of waste disposal with multiple suppliers. The relative minimum fulfillment quantity and price are specified in the agreements.

e. The Company entered into a long-term purchase agreement of equipment. The relative fulfillment quantity and price are specified in the agreement.

f. The Company entered into long-term energy purchase agreements with multiple suppliers. The relative fulfillment period, quantity and price are specified in the agreements.

g. As of the end of reporting period, the Company provided endorsement guarantees of NT$2,558,559 thousand to its subsidiary, TSMC North America, in respect of providing endorsement guarantees for office leasing contract.

h. As of the end of reporting period, the Company provided a NT$230,602,500 thousand endorsement guarantee for its subsidiary, TSMC Global, in respect of its issuance of US dollar-denominated senior unsecured corporate bonds.

i. As of the end of reporting period, the Company provided a NT$369,960,818 thousand endorsement guarantee for its subsidiary, TSMC Arizona, in respect of its issuance of US dollar-denominated senior unsecured corporate bonds and operation needs.

j. The Company entrusted financial institutions to provide performance guarantees mainly for import and export of goods, lease agreement and energy purchase agreement. As of December 31, 2023 and 2022, the aforementioned guarantee amounted to NT$8,012,973 thousand and NT$7,623,262 thousand, respectively.

32. EXCHANGE RATE INFORMATION OF FOREIGN-CURRENCY FINANCIAL ASSETS AND LIABILITIES

The following information was summarized according to the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousands)	Exchange Rate (Note)	Carrying Amount (In Thousands)
December 31, 2023			
Financial assets			
Monetary items			
USD	$ 13,930,953	30.747	$ 428,335,022
EUR	408,480	34.175	13,959,812
JPY	7,683,178	0.2192	1,684,153
Financial liabilities			
Monetary items			
USD	13,381,760	30.747	411,448,963
EUR	778,452	34.175	26,603,608
JPY	194,498,358	0.2192	42,634,040
December 31, 2022			
Financial assets			
Monetary items			
USD	13,953,942	30.713	428,567,422
EUR	7,863	32.838	258,211
JPY	124,526,582	0.2331	29,027,146
Financial liabilities			
Monetary items			
USD	14,450,017	30.713	443,803,373
EUR	2,352,220	32.838	77,242,213
JPY	125,984,842	0.2331	29,367,067

Note: Exchange rate represents the number of NT dollar for which one foreign currency could be exchanged.

Please refer to the parent company only statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss for the years ended December 31, 2023 and 2022, respectively. Since there were varieties of foreign currency transactions of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

33. ADDITIONAL DISCLOSURES

Following are the additional disclosures required by the Securities and Futures Bureau for the Company:

a. Financings provided: See Table 1 attached;

b. Endorsement/guarantee provided: See Table 2 attached;

c. Marketable securities held (excluding investments in subsidiaries and associates): See Table 3 attached;

d. Marketable securities acquired and disposed of at costs or prices of at least NT$300 million or 20% of the paid-in capital: See Table 4 attached;

e. Acquisition of individual real estate properties at costs of at least NT$300 million or 20% of the paid-in capital: See Table 5 attached;

f. Disposal of individual real estate properties at prices of at least NT$300 million or 20% of the paid-in capital: None;

g. Total purchases from or sales to related parties of at least NT$100 million or 20% of the paid-in capital: See Table 6 attached;

h. Receivables from related parties amounting to at least NT$100 million or 20% of the paid-in capital: See Table 7 attached;

i. Information about the derivative financial instruments transaction: See Notes 7 and 9;

j. Names, locations, and related information of investees over which the Company exercises significant influence (excluding information on investment in mainland China): See Table 8 attached;

k. Information on investment in mainland China

    1) The name of the investee in mainland China, the main businesses and products, its issued capital, method of investment, information on inflow or outflow of capital, percentage of ownership, income (losses) of the investee, share of profits/losses of investee, ending balance, amount received as dividends from the investee, and the limitation on investee: See Table 9 attached.

    2) Significant direct or indirect transactions with the investee, its prices and terms of payment, unrealized gain or loss, and other related information which is helpful to understand the impact of investment in mainland China on financial reports: See Note 30.

l. Information of major shareholder

    List of all shareholders with ownership of 5 percent or greater showing the names and the number of shares and percentage of ownership held by each shareholder: See Table 10 attached.

34. OPERATING SEGMENTS INFORMATION

The Company has provided the operating segments disclosure in the consolidated financial statements.

TABLE 1

Taiwan Semiconductor Manufacturing Company Limited and Investees

FINANCINGS PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Financing Company	Counterparty	Financial Statement Account	Related Party	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Interest Rate	Nature for Financing	Transaction Amounts	Reason for Financing	Allowance for Bad Debt	Collateral		Financing Limits for Each Borrowing Company (Notes 1 and 2)	Financing Company's Total Financing Amount Limits (Notes 1 and 2)
													Item	Value		
0	TSMC	TSMC Arizona	Other receivables from related parties	Yes	$ 92,241,000 (US$ 3,000,000)	$ 92,241,000 (US$ 3,000,000)	$ -	-	The need for short-term financing	$ -	Capacity installation and working capital	$ -	-	$ -	$ 345,891,363	$ 691,782,725
1	TSMC China	TSMC Nanjing	Other receivables from related parties	Yes	73,510,570 (RMB 8,800,000)& (US$ 1,150,000)	51,987,670 (RMB 8,800,000)& (US$ 450,000)	38,151,520 (RMB 8,800,000)	1.30%-1.50%	The need for short-term and long-term financing	-	Operating capital	-	-	-	95,757,396	95,757,396

Note 1: The amount available for lending to TSMC Arizona from TSMC shall not exceed ten percent (10%) of the net worth of TSMC, and the total amount available for lending from TSMC to borrowers shall not exceed twenty percent (20%) of the net worth of TSMC.

Note 2: The aggregate amount available for lending to TSMC Nanjing from TSMC China shall not exceed the net worth of TSMC China.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

TABLE 2

Taiwan Semiconductor Manufacturing Company Limited and Investees

ENDORSEMENTS/GUARANTEES PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Endorsement/ Guarantee Provider	Guaranteed Party		Limits on Endorsement/ Guarantee Amount Provided to Each Guaranteed Party (Notes 1 and 2)	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (US$ in Thousands)	Amount of Endorsement/ Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Notes 1 and 2)	Guarantee Provided by Parent Company	Guarantee Provided by A Subsidiary	Guarantee Provided to Subsidiaries in Mainland China
		Name	Nature of Relationship										
0	TSMC	TSMC North America	Subsidiary	$ 1,383,565,451	$ 2,558,559 (US$ 83,213)	$ 2,558,559 (US$ 83,213)	$ 2,558,559 (US$ 83,213)	$ -	0.07%	$ 1,383,565,451	Yes	No	No
		TSMC Global	Subsidiary	1,383,565,451	230,602,500 (US$ 7,500,000)	230,602,500 (US$ 7,500,000)	230,602,500 (US$ 7,500,000)	-	6.67%	1,383,565,451	Yes	No	No
		TSMC Arizona	Subsidiary	1,383,565,451	369,960,818 (US$12,032,420)	369,960,818 (US$12,032,420)	246,972,818 (US$ 8,032,420)	-	10.70%	1,383,565,451	Yes	No	No
		TSMC Development	Subsidiary	1,383,565,451	13,307,302 (US$ 432,800)	-	-	-	-	1,383,565,451	Yes	No	No
1	TSMC Japan	TSMC JDC	The same parent company	326,007	289,344 (JPY 1,320,000)	289,344 (JPY 1,320,000)	289,344 (JPY 1,320,000)	-	0.01%	326,007	No	No	No

Note 1: The total amount of the endorsement/guarantee provided by TSMC to TSMC North America, TSMC Global, TSMC Arizona and TSMC Development shall not exceed forty percent (40%) of TSMC's net worth.

Note 2: The total amount of the endorsement/guarantee provided by TSMC Japan to TSMC JDC shall not exceed two hundred and fifty percent (250%) of TSMC Japan's net worth.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

TABLE 3

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES HELD
December 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC	Non-publicly traded equity investments							
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	Financial assets at fair value through other comprehensive income	10,500	$ 430,500	7	$ 430,500	
	United Industrial Gases Co., Ltd.	-	〃	21,230	421,211	10	421,211	
	Global Investment Holding Inc.	-	〃	10,442	109,239	6	109,239	
	Crimson Asia Capital	-	〃	-	-	1	-	
	Commercial paper							
	Cathay Financial Holding Co., Ltd.	-	Financial assets at amortized cost	697	6,924,665	N/A	6,929,220	
	Nan Ya Plastics Corporation	-	〃	600	5,976,677	N/A	5,982,726	
	China Steel Corporation	-	〃	200	1,985,094	N/A	1,986,400	
	Formosa Plastics Corporation	-	〃	100	996,260	N/A	997,268	
	CPC Corporation, Taiwan	-	〃	100	995,553	N/A	995,420	
	Formosa Chemicals & Fibre Corporation	-	〃	100	994,540	N/A	995,374	
	Taiwan Power Company	-	〃	50	498,916	N/A	498,921	
TSMC Partners	Fund							
	Matter Venture Partners Fund I, L.P.	-	Financial assets at fair value through Profit or Loss	-	US$ 3,587	7	US$ 3,587	
	Non-publicly traded equity investments							
	Shanghai Walden Venture Capital Enterprise	-	Financial assets at fair value through other comprehensive income	-	US$ 28,969	6	US$ 28,969	
	Walden Technology Ventures Investments II, L.P.	-	〃	-	US$ 18,187	9	US$ 18,187	
	Walden Technology Ventures Investments III, L.P.	-	〃	-	US$ 13,458	4	US$ 13,458	
	Tela Innovations	-	〃	6,942	-	22	-	
	Publicly traded stocks							
	ARM Holdings plc	-	Financial assets at fair value through other comprehensive income	1,961	US$ 147,353	-	US$ 147,353	
	Movella Holdings Inc.	-	〃	3,095	US$ 1,873	6	US$ 1,873	
TSMC Global	Corporate bond							
	Bank of America Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 86,588	N/A	US$ 86,588	
	Morgan Stanley	-	〃	-	US$ 76,777	N/A	US$ 76,777	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 58,554	N/A	US$ 58,554	
	Wells Fargo & Company	-	〃	-	US$ 58,351	N/A	US$ 58,351	
	JPMorgan Chase & Co.	-	〃	-	US$ 58,153	N/A	US$ 58,153	
	Citigroup Inc.	-	〃	-	US$ 50,436	N/A	US$ 50,436	
	Sumitomo Mitsui Financial Group, Inc.	-	〃	-	US$ 45,172	N/A	US$ 45,172	
	Mitsubishi UFJ Financial Group, Inc.	-	〃	-	US$ 36,903	N/A	US$ 36,903	
	Barclays PLC	-	〃	-	US$ 35,277	N/A	US$ 35,277	
	HSBC Holdings plc	-	〃	-	US$ 30,124	N/A	US$ 30,124	
	Banco Santander, S.A.	-	〃	-	US$ 29,015	N/A	US$ 29,015	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	AbbVie Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 26,895	N/A	US$ 26,895	
	Royal Bank of Canada	-	〃	-	US$ 25,469	N/A	US$ 25,469	
	CVS Health Corporation	-	〃	-	US$ 24,591	N/A	US$ 24,591	
	Lloyds Banking Group plc	-	〃	-	US$ 24,131	N/A	US$ 24,131	
	BPCE SA	-	〃	-	US$ 23,875	N/A	US$ 23,875	
	Oracle Corporation	-	〃	-	US$ 23,751	N/A	US$ 23,751	
	The Toronto-Dominion Bank	-	〃	-	US$ 22,568	N/A	US$ 22,568	
	Capital One Financial Corporation	-	〃	-	US$ 21,572	N/A	US$ 21,572	
	Credit Agricole SA London Branch	-	〃	-	US$ 20,395	N/A	US$ 20,395	
	BNP Paribas SA	-	〃	-	US$ 20,345	N/A	US$ 20,345	
	Athene Global Funding	-	〃	-	US$ 20,297	N/A	US$ 20,297	
	Fédération des caisses Desjardins du Québec	-	〃	-	US$ 19,320	N/A	US$ 19,320	
	Equitable Financial Life Global Funding	-	〃	-	US$ 18,910	N/A	US$ 18,910	
	National Securities Clearing Corporation	-	〃	-	US$ 18,429	N/A	US$ 18,429	
	AIG Global Funding	-	〃	-	US$ 18,428	N/A	US$ 18,428	
	Metropolitan Life Global Funding I	-	〃	-	US$ 18,299	N/A	US$ 18,299	
	ABN AMRO Bank N.V.	-	〃	-	US$ 18,247	N/A	US$ 18,247	
	Principal Life Global Funding II	-	〃	-	US$ 17,932	N/A	US$ 17,932	
	Nationwide Building Society	-	〃	-	US$ 17,760	N/A	US$ 17,760	
	Sumitomo Mitsui Trust Bank, Limited	-	〃	-	US$ 17,286	N/A	US$ 17,286	
	Guardian Life Global Funding	-	〃	-	US$ 17,140	N/A	US$ 17,140	
	U.S. Bancorp.	-	〃	-	US$ 16,962	N/A	US$ 16,962	
	Danske Bank A/S	-	〃	-	US$ 16,698	N/A	US$ 16,698	
	Société Générale Société anonyme	-	〃	-	US$ 16,589	N/A	US$ 16,589	
	The Bank of Nova Scotia	-	〃	-	US$ 16,474	N/A	US$ 16,474	
	Volkswagen Group of America Finance, LLC	-	〃	-	US$ 16,251	N/A	US$ 16,251	
	The Bank of New York Mellon Corporation	-	〃	-	US$ 16,064	N/A	US$ 16,064	
	Nomura Holdings, Inc.	-	〃	-	US$ 15,719	N/A	US$ 15,719	
	Banque Fédérative du Crédit Mutuel	-	〃	-	US$ 14,439	N/A	US$ 14,439	
	UBS Group AG	-	〃	-	US$ 14,328	N/A	US$ 14,328	
	Standard Chartered PLC	-	〃	-	US$ 14,304	N/A	US$ 14,304	
	Protective Life Global Funding	-	〃	-	US$ 14,155	N/A	US$ 14,155	
	American Express Company	-	〃	-	US$ 13,685	N/A	US$ 13,685	
	UnitedHealth Group Incorporated	-	〃	-	US$ 13,673	N/A	US$ 13,673	
	Hyundai Capital America	-	〃	-	US$ 13,567	N/A	US$ 13,567	
	NTT Finance Corporation	-	〃	-	US$ 13,544	N/A	US$ 13,544	
	Amgen Inc.	-	〃	-	US$ 13,330	N/A	US$ 13,330	
	AerCap Ireland Capital Designated Activity Company	-	〃	-	US$ 13,278	N/A	US$ 13,278	
	Enel Finance International N.V.	-	〃	-	US$ 13,139	N/A	US$ 13,139	
	Penske Truck Leasing Co., L.P.	-	〃	-	US$ 13,095	N/A	US$ 13,095	
	Intuit Inc.	-	〃	-	US$ 12,686	N/A	US$ 12,686	
	Pfizer Investment Enterprises Pte. Ltd.	-	〃	-	US$ 12,590	N/A	US$ 12,590	
	Apple Inc.	-	〃	-	US$ 12,489	N/A	US$ 12,489	
	Coöperatieve Rabobank U.A.	-	〃	-	US$ 12,434	N/A	US$ 12,434	
	New York Life Global Funding	-	〃	-	US$ 12,343	N/A	US$ 12,343	
	Santander UK Group Holdings plc	-	〃	-	US$ 12,277	N/A	US$ 12,277	
	NatWest Markets Plc	-	〃	-	US$ 11,873	N/A	US$ 11,873	
	ING Groep N.V.	-	〃	-	US$ 11,773	N/A	US$ 11,773	
	Nordea Bank Abp	-	〃	-	US$ 11,677	N/A	US$ 11,677	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Mizuho Financial Group, Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 11,665	N/A	US$ 11,665	
	ASB Bank Limited	-	〃	-	US$ 11,504	N/A	US$ 11,504	
	Northwestern Mutual Global Funding	-	〃	-	US$ 11,332	N/A	US$ 11,332	
	Amazon.com, Inc.	-	〃	-	US$ 11,317	N/A	US$ 11,317	
	ONEOK, Inc.	-	〃	-	US$ 11,048	N/A	US$ 11,048	
	Bank of Montreal	-	〃	-	US$ 11,032	N/A	US$ 11,032	
	NextEra Energy Capital Holdings, Inc.	-	〃	-	US$ 10,970	N/A	US$ 10,970	
	Southern California Edison Company	-	〃	-	US$ 10,796	N/A	US$ 10,796	
	Ryder System, Inc.	-	〃	-	US$ 10,588	N/A	US$ 10,588	
	Verizon Communications Inc.	-	〃	-	US$ 10,584	N/A	US$ 10,584	
	S&P Global Inc.	-	〃	-	US$ 10,556	N/A	US$ 10,556	
	Deutsche Bank AG - New York Branch	-	〃	-	US$ 10,454	N/A	US$ 10,454	
	Equifax Inc.	-	〃	-	US$ 10,338	N/A	US$ 10,338	
	Macquarie Group Limited	-	〃	-	US$ 10,206	N/A	US$ 10,206	
	AT&T Inc.	-	〃	-	US$ 9,879	N/A	US$ 9,879	
	Svenska Handelsbanken AB (publ)	-	〃	-	US$ 9,866	N/A	US$ 9,866	
	John Deere Capital Corporation	-	〃	-	US$ 9,776	N/A	US$ 9,776	
	Truist Financial Corporation	-	〃	-	US$ 9,513	N/A	US$ 9,513	
	Haleon US Capital LLC	-	〃	-	US$ 9,332	N/A	US$ 9,332	
	Roper Technologies, Inc.	-	〃	-	US$ 9,177	N/A	US$ 9,177	
	Exelon Corporation	-	〃	-	US$ 9,100	N/A	US$ 9,100	
	Thermo Fisher Scientific Inc.	-	〃	-	US$ 9,049	N/A	US$ 9,049	
	Florida Power & Light Company	-	〃	-	US$ 9,042	N/A	US$ 9,042	
	RGA Global Funding	-	〃	-	US$ 8,977	N/A	US$ 8,977	
	Merck & Co., Inc.	-	〃	-	US$ 8,951	N/A	US$ 8,951	
	Equinor ASA	-	〃	-	US$ 8,866	N/A	US$ 8,866	
	Honeywell International Inc.	-	〃	-	US$ 8,759	N/A	US$ 8,759	
	The PNC Financial Services Group, Inc.	-	〃	-	US$ 8,451	N/A	US$ 8,451	
	Macquarie Bank Limited	-	〃	-	US$ 8,390	N/A	US$ 8,390	
	Rabobank Nederland - New York Branch	-	〃	-	US$ 8,173	N/A	US$ 8,173	
	Lowe's Companies, Inc.	-	〃	-	US$ 8,065	N/A	US$ 8,065	
	Cox Communications, Inc.	-	〃	-	US$ 7,964	N/A	US$ 7,964	
	TORONTO-DOMINION BANK/THE	-	〃	-	US$ 7,955	N/A	US$ 7,955	
	Constellation Energy Generation, LLC	-	〃	-	US$ 7,903	N/A	US$ 7,903	
	Lockheed Martin Corporation	-	〃	-	US$ 7,863	N/A	US$ 7,863	
	KfW	-	〃	-	US$ 7,860	N/A	US$ 7,860	
	Intel Corporation	-	〃	-	US$ 7,820	N/A	US$ 7,820	
	International Bank for Reconstruction and Development	-	〃	-	US$ 7,770	N/A	US$ 7,770	
	Great-West Lifeco U.S. Finance 2020, Lp	-	〃	-	US$ 7,631	N/A	US$ 7,631	
	RTX Corporation	-	〃	-	US$ 7,603	N/A	US$ 7,603	
	Inter-American Development Bank	-	〃	-	US$ 7,511	N/A	US$ 7,511	
	Suncorp-Metway Limited	-	〃	-	US$ 7,453	N/A	US$ 7,453	
	AstraZeneca Finance LLC	-	〃	-	US$ 7,185	N/A	US$ 7,185	
	Chevron Corporation	-	〃	-	US$ 7,032	N/A	US$ 7,032	
	Daimler Trucks Finance North America LLC	-	〃	-	US$ 7,013	N/A	US$ 7,013	
	The East Ohio Gas Company	-	〃	-	US$ 6,978	N/A	US$ 6,978	
	Philip Morris International Inc.	-	〃	-	US$ 6,807	N/A	US$ 6,807	
	AstraZeneca PLC	-	〃	-	US$ 6,798	N/A	US$ 6,798	
	Fiserv, Inc.	-	〃	-	US$ 6,745	N/A	US$ 6,745	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Pacific Life Global Funding II	-	Financial assets at fair value through other comprehensive income	-	US$ 6,726	N/A	US$ 6,726	
	UBS AG, London Branch	-	〃	-	US$ 6,595	N/A	US$ 6,595	
	WEC Energy Group, Inc.	-	〃	-	US$ 6,555	N/A	US$ 6,555	
	Met Tower Global Funding	-	〃	-	US$ 6,550	N/A	US$ 6,550	
	Roche Holdings, Inc.	-	〃	-	US$ 6,539	N/A	US$ 6,539	
	MPLX LP	-	〃	-	US$ 6,514	N/A	US$ 6,514	
	Fidelity National Information Services, Inc.	-	〃	-	US$ 6,498	N/A	US$ 6,498	
	The Charles Schwab Corporation	-	〃	-	US$ 6,437	N/A	US$ 6,437	
	NatWest Group plc	-	〃	-	US$ 6,360	N/A	US$ 6,360	
	Ameren Corporation	-	〃	-	US$ 6,304	N/A	US$ 6,304	
	Take-Two Interactive Software, Inc.	-	〃	-	US$ 6,237	N/A	US$ 6,237	
	Eaton Corporation	-	〃	-	US$ 6,218	N/A	US$ 6,218	
	Georgia Power Company	-	〃	-	US$ 6,090	N/A	US$ 6,090	
	Huntington Bancshares Incorporated	-	〃	-	US$ 5,985	N/A	US$ 5,985	
	Elevance Health, Inc.	-	〃	-	US$ 5,914	N/A	US$ 5,914	
	Intercontinental Exchange, Inc.	-	〃	-	US$ 5,906	N/A	US$ 5,906	
	Ameriprise Financial, Inc.	-	〃	-	US$ 5,837	N/A	US$ 5,837	
	National Bank of Canada	-	〃	-	US$ 5,783	N/A	US$ 5,783	
	Fifth Third Bancorp	-	〃	-	US$ 5,777	N/A	US$ 5,777	
	ERAC USA Finance LLC	-	〃	-	US$ 5,722	N/A	US$ 5,722	
	Scentre Group Trust 1	-	〃	-	US$ 5,685	N/A	US$ 5,685	
	Stryker Corporation	-	〃	-	US$ 5,630	N/A	US$ 5,630	
	Medtronic Global Holdings S.C.A.	-	〃	-	US$ 5,572	N/A	US$ 5,572	
	NBN Co Limited	-	〃	-	US$ 5,537	N/A	US$ 5,537	
	WPP Finance 2010	-	〃	-	US$ 5,537	N/A	US$ 5,537	
	Discover Bank (New Castle, Delaware)	-	〃	-	US$ 5,440	N/A	US$ 5,440	
	DNB Bank ASA	-	〃	-	US$ 5,421	N/A	US$ 5,421	
	Comcast Corporation	-	〃	-	US$ 5,369	N/A	US$ 5,369	
	Exxon Mobil Corporation	-	〃	-	US$ 5,369	N/A	US$ 5,369	
	Alabama Power Company	-	〃	-	US$ 5,348	N/A	US$ 5,348	
	Fox Corporation	-	〃	-	US$ 5,320	N/A	US$ 5,320	
	McKesson Corporation	-	〃	-	US$ 5,316	N/A	US$ 5,316	
	Sydney Airport Finance Company Pty Ltd	-	〃	-	US$ 5,160	N/A	US$ 5,160	
	Virginia Electric and Power Company	-	〃	-	US$ 5,075	N/A	US$ 5,075	
	Siemens Financieringsmaatschappij N.V.	-	〃	-	US$ 5,063	N/A	US$ 5,063	
	Southwest Airlines Co.	-	〃	-	US$ 5,021	N/A	US$ 5,021	
	Ventas Realty, Limited Partnership	-	〃	-	US$ 5,010	N/A	US$ 5,010	
	NiSource Inc.	-	〃	-	US$ 4,918	N/A	US$ 4,918	
	CGI Inc.	-	〃	-	US$ 4,842	N/A	US$ 4,842	
	Brookfield Finance Inc.	-	〃	-	US$ 4,812	N/A	US$ 4,812	
	HEICO Corporation	-	〃	-	US$ 4,786	N/A	US$ 4,786	
	ANZ New Zealand (Int'l) Limited	-	〃	-	US$ 4,689	N/A	US$ 4,689	
	Bristol-Myers Squibb Company	-	〃	-	US$ 4,604	N/A	US$ 4,604	
	HP Inc.	-	〃	-	US$ 4,603	N/A	US$ 4,603	
	Nutrien Ltd.	-	〃	-	US$ 4,564	N/A	US$ 4,564	
	Enbridge Inc.	-	〃	-	US$ 4,535	N/A	US$ 4,535	
	CenterPoint Energy, Inc.	-	〃	-	US$ 4,505	N/A	US$ 4,505	
	W. P. Carey Inc.	-	〃	-	US$ 4,457	N/A	US$ 4,457	
	Pioneer Natural Resources Company	-	〃	-	US$ 4,455	N/A	US$ 4,455	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Otis Worldwide Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 4,442	N/A	US$ 4,442	
	ITC Holdings Corp.	-	〃	-	US$ 4,411	N/A	US$ 4,411	
	Citizens Bank, National Association	-	〃	-	US$ 4,363	N/A	US$ 4,363	
	Skandinaviska Enskilda Banken AB (publ)	-	〃	-	US$ 4,343	N/A	US$ 4,343	
	State Street Corporation	-	〃	-	US$ 4,313	N/A	US$ 4,313	
	Toyota Motor Credit Corporation	-	〃	-	US$ 4,261	N/A	US$ 4,261	
	Dollar General Corporation	-	〃	-	US$ 4,188	N/A	US$ 4,188	
	Brighthouse Financial Global Funding	-	〃	-	US$ 4,132	N/A	US$ 4,132	
	F&G Global Funding	-	〃	-	US$ 4,120	N/A	US$ 4,120	
	JPMORGAN CHASE & CO	-	〃	-	US$ 4,114	N/A	US$ 4,114	
	Public Service Enterprise Group Incorporated	-	〃	-	US$ 4,044	N/A	US$ 4,044	
	Korea Electric Power Corporation	-	〃	-	US$ 4,036	N/A	US$ 4,036	
	Schlumberger Investment SA	-	〃	-	US$ 4,028	N/A	US$ 4,028	
	AvalonBay Communities, Inc.	-	〃	-	US$ 4,006	N/A	US$ 4,006	
	Element Fleet Management Corp.	-	〃	-	US$ 4,004	N/A	US$ 4,004	
	CNO Global Funding	-	〃	-	US$ 3,967	N/A	US$ 3,967	
	Lincoln National Corporation	-	〃	-	US$ 3,948	N/A	US$ 3,948	
	Monongahela Power Company	-	〃	-	US$ 3,946	N/A	US$ 3,946	
	Public Storage	-	〃	-	US$ 3,934	N/A	US$ 3,934	
	Walmart Inc.	-	〃	-	US$ 3,875	N/A	US$ 3,875	
	Citibank, N.A.	-	〃	-	US$ 3,858	N/A	US$ 3,858	
	Anheuser-Busch Companies, LLC	-	〃	-	US$ 3,857	N/A	US$ 3,857	
	B.A.T. International Finance p.l.c.	-	〃	-	US$ 3,792	N/A	US$ 3,792	
	Fortinet, Inc.	-	〃	-	US$ 3,667	N/A	US$ 3,667	
	Norsk Hydro ASA	-	〃	-	US$ 3,666	N/A	US$ 3,666	
	Appalachian Power Company	-	〃	-	US$ 3,661	N/A	US$ 3,661	
	AutoZone, Inc.	-	〃	-	US$ 3,646	N/A	US$ 3,646	
	Eversource Energy	-	〃	-	US$ 3,568	N/A	US$ 3,568	
	Parker-Hannifin Corporation	-	〃	-	US$ 3,565	N/A	US$ 3,565	
	Jackson National Life Global Funding	-	〃	-	US$ 3,563	N/A	US$ 3,563	
	The Israel Electric Corporation Ltd	-	〃	-	US$ 3,554	N/A	US$ 3,554	
	GA Global Funding Trust	-	〃	-	US$ 3,552	N/A	US$ 3,552	
	CenterPoint Energy Resources Corp.	-	〃	-	US$ 3,539	N/A	US$ 3,539	
	Baxter International Inc.	-	〃	-	US$ 3,486	N/A	US$ 3,486	
	Kimco Realty Corporation	-	〃	-	US$ 3,468	N/A	US$ 3,468	
	Advocate Health & Hospitals Corporation	-	〃	-	US$ 3,444	N/A	US$ 3,444	
	Meta Platforms, Inc.	-	〃	-	US$ 3,430	N/A	US$ 3,430	
	Sempra	-	〃	-	US$ 3,429	N/A	US$ 3,429	
	BorgWarner Inc.	-	〃	-	US$ 3,426	N/A	US$ 3,426	
	Morgan Stanley Bank, N.A.	-	〃	-	US$ 3,416	N/A	US$ 3,416	
	B.A.T Capital Corporation	-	〃	-	US$ 3,325	N/A	US$ 3,325	
	Highmark Inc.	-	〃	-	US$ 3,283	N/A	US$ 3,283	
	Pfizer Inc.	-	〃	-	US$ 3,281	N/A	US$ 3,281	
	Realty Income Corporation	-	〃	-	US$ 3,271	N/A	US$ 3,271	
	Ross Stores, Inc.	-	〃	-	US$ 3,267	N/A	US$ 3,267	
	Republic Services, Inc.	-	〃	-	US$ 3,212	N/A	US$ 3,212	
	Verisk Analytics, Inc.	-	〃	-	US$ 3,191	N/A	US$ 3,191	
	Truist Bank	-	〃	-	US$ 3,173	N/A	US$ 3,173	
	Corebridge Financial, Inc.	-	〃	-	US$ 3,120	N/A	US$ 3,120	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Lundin Energy Finance BV	-	Financial assets at fair value through other comprehensive income	-	US$ 3,099	N/A	US$ 3,099	
	Wells Fargo Bank, National Association	-	〃	-	US$ 3,098	N/A	US$ 3,098	
	Atmos Energy Corporation	-	〃	-	US$ 3,068	N/A	US$ 3,068	
	EIDP, Inc.	-	〃	-	US$ 3,059	N/A	US$ 3,059	
	Mutual Of Omaha Companies Global Funding	-	〃	-	US$ 3,057	N/A	US$ 3,057	
	Nestlé Holdings, Inc.	-	〃	-	US$ 3,040	N/A	US$ 3,040	
	CMS Energy Corporation	-	〃	-	US$ 3,017	N/A	US$ 3,017	
	Johnson & Johnson	-	〃	-	US$ 3,015	N/A	US$ 3,015	
	CNA Financial Corporation	-	〃	-	US$ 2,978	N/A	US$ 2,978	
	Prologis, L.P.	-	〃	-	US$ 2,974	N/A	US$ 2,974	
	Southern California Gas Company	-	〃	-	US$ 2,929	N/A	US$ 2,929	
	Rio Tinto Finance (USA) Limited	-	〃	-	US$ 2,900	N/A	US$ 2,900	
	Xcel Energy Inc.	-	〃	-	US$ 2,894	N/A	US$ 2,894	
	Canadian Imperial Bank of Commerce	-	〃	-	US$ 2,891	N/A	US$ 2,891	
	BHP Billiton Finance (USA) Limited	-	〃	-	US$ 2,865	N/A	US$ 2,865	
	Diageo Capital plc	-	〃	-	US$ 2,847	N/A	US$ 2,847	
	Novartis Capital Corporation	-	〃	-	US$ 2,810	N/A	US$ 2,810	
	Baxalta Incorporated	-	〃	-	US$ 2,750	N/A	US$ 2,750	
	Dominion Energy, Inc.	-	〃	-	US$ 2,746	N/A	US$ 2,746	
	7-Eleven, Inc.	-	〃	-	US$ 2,737	N/A	US$ 2,737	
	Oncor Electric Delivery Company LLC	-	〃	-	US$ 2,716	N/A	US$ 2,716	
	Simon Property Group, L.P.	-	〃	-	US$ 2,692	N/A	US$ 2,692	
	Weyerhaeuser Company	-	〃	-	US$ 2,687	N/A	US$ 2,687	
	National Australia Bank Limited, New York Branch	-	〃	-	US$ 2,647	N/A	US$ 2,647	
	Eastern Energy Gas Holdings, LLC	-	〃	-	US$ 2,643	N/A	US$ 2,643	
	Chevron Phillips Chemical Company LLC	-	〃	-	US$ 2,636	N/A	US$ 2,636	
	O'Reilly Automotive, Inc.	-	〃	-	US$ 2,610	N/A	US$ 2,610	
	The Estée Lauder Companies Inc.	-	〃	-	US$ 2,609	N/A	US$ 2,609	
	Masco Corporation	-	〃	-	US$ 2,601	N/A	US$ 2,601	
	The Southern Company	-	〃	-	US$ 2,575	N/A	US$ 2,575	
	Avangrid, Inc.	-	〃	-	US$ 2,574	N/A	US$ 2,574	
	Bank of New Zealand	-	〃	-	US$ 2,563	N/A	US$ 2,563	
	Air Products and Chemicals, Inc.	-	〃	-	US$ 2,531	N/A	US$ 2,531	
	Nuveen Finance, LLC	-	〃	-	US$ 2,460	N/A	US$ 2,460	
	Coca-Cola Europacific Partners PLC	-	〃	-	US$ 2,433	N/A	US$ 2,433	
	American Electric Power Company, Inc.	-	〃	-	US$ 2,431	N/A	US$ 2,431	
	Entergy Texas, Inc.	-	〃	-	US$ 2,427	N/A	US$ 2,427	
	Workday, Inc.	-	〃	-	US$ 2,406	N/A	US$ 2,406	
	CRH America, Inc.	-	〃	-	US$ 2,400	N/A	US$ 2,400	
	Swedbank AB (publ)	-	〃	-	US$ 2,399	N/A	US$ 2,399	
	Air Lease Corporation	-	〃	-	US$ 2,360	N/A	US$ 2,360	
	Chevron U.S.A. Inc.	-	〃	-	US$ 2,349	N/A	US$ 2,349	
	Westpac Banking Corporation	-	〃	-	US$ 2,346	N/A	US$ 2,346	
	Texas Instruments Incorporated	-	〃	-	US$ 2,344	N/A	US$ 2,344	
	Yara International ASA	-	〃	-	US$ 2,316	N/A	US$ 2,316	
	Magellan Midstream Partners, L.P.	-	〃	-	US$ 2,314	N/A	US$ 2,314	
	GE HealthCare Technologies Inc.	-	〃	-	US$ 2,277	N/A	US$ 2,277	
	Empower Finance 2020, LP	-	〃	-	US$ 2,268	N/A	US$ 2,268	
	Cardinal Health, Inc.	-	〃	-	US$ 2,266	N/A	US$ 2,266	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	ONE Gas, Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 2,265	N/A	US$ 2,265	
	Mitsubishi HC Capital Inc.	-	〃	-	US$ 2,249	N/A	US$ 2,249	
	Alliant Energy Finance, LLC	-	〃	-	US$ 2,230	N/A	US$ 2,230	
	The Western Union Company	-	〃	-	US$ 2,187	N/A	US$ 2,187	
	Georgia-Pacific LLC	-	〃	-	US$ 2,160	N/A	US$ 2,160	
	Health Care Service Corporation, a Mutual Legal Reserve Company	-	〃	-	US$ 2,130	N/A	US$ 2,130	
	American Honda Finance Corporation	-	〃	-	US$ 2,087	N/A	US$ 2,087	
	Phillips 66	-	〃	-	US$ 2,057	N/A	US$ 2,057	
	Bank of America, National Association	-	〃	-	US$ 2,036	N/A	US$ 2,036	
	Pricoa Global Funding I	-	〃	-	US$ 2,019	N/A	US$ 2,019	
	KODIT Global 2023-1 Co., Ltd.	-	〃	-	US$ 1,996	N/A	US$ 1,996	
	Public Service Electric and Gas Company	-	〃	-	US$ 1,986	N/A	US$ 1,986	
	Mead Johnson Nutrition Company	-	〃	-	US$ 1,973	N/A	US$ 1,973	
	Magna International Inc.	-	〃	-	US$ 1,967	N/A	US$ 1,967	
	UBS Group Funding (Jersey) Ltd.	-	〃	-	US$ 1,951	N/A	US$ 1,951	
	Tucson Electric Power Company	-	〃	-	US$ 1,948	N/A	US$ 1,948	
	Olympus Corporation	-	〃	-	US$ 1,943	N/A	US$ 1,943	
	Welltower Inc.	-	〃	-	US$ 1,930	N/A	US$ 1,930	
	Gulf Power Company	-	〃	-	US$ 1,916	N/A	US$ 1,916	
	CSX Corporation	-	〃	-	US$ 1,911	N/A	US$ 1,911	
	Shinhan Financial Group Co., Ltd.	-	〃	-	US$ 1,856	N/A	US$ 1,856	
	Mitsubishi Corporation	-	〃	-	US$ 1,823	N/A	US$ 1,823	
	Sprint Spectrum Co Llc	-	〃	-	US$ 1,812	N/A	US$ 1,812	
	NBK SPC Limited	-	〃	-	US$ 1,809	N/A	US$ 1,809	
	Berkshire Hathaway Energy Company	-	〃	-	US$ 1,792	N/A	US$ 1,792	
	CenterPoint Energy Houston Electric, LLC	-	〃	-	US$ 1,785	N/A	US$ 1,785	
	Mondelez International, Inc.	-	〃	-	US$ 1,759	N/A	US$ 1,759	
	Kentucky Utilities Company	-	〃	-	US$ 1,750	N/A	US$ 1,750	
	SMBC Aviation Capital Finance DAC	-	〃	-	US$ 1,747	N/A	US$ 1,747	
	USAA Capital Corp.	-	〃	-	US$ 1,747	N/A	US$ 1,747	
	Evergy Kansas Central, Inc.	-	〃	-	US$ 1,692	N/A	US$ 1,692	
	DTE Energy Company	-	〃	-	US$ 1,685	N/A	US$ 1,685	
	University of California	-	〃	-	US$ 1,631	N/A	US$ 1,631	
	CSL Finance plc	-	〃	-	US$ 1,601	N/A	US$ 1,601	
	Gulfstream Natural Gas System, L.L.C.	-	〃	-	US$ 1,598	N/A	US$ 1,598	
	eBay Inc.	-	〃	-	US$ 1,594	N/A	US$ 1,594	
	Emerson Electric Co.	-	〃	-	US$ 1,576	N/A	US$ 1,576	
	International Business Machines Corporation	-	〃	-	US$ 1,570	N/A	US$ 1,570	
	Burlington Northern Santa Fe, LLC	-	〃	-	US$ 1,566	N/A	US$ 1,566	
	Glencore Funding LLC	-	〃	-	US$ 1,556	N/A	US$ 1,556	
	Jefferies Financial Group Inc.	-	〃	-	US$ 1,543	N/A	US$ 1,543	
	Duke Energy Corporation	-	〃	-	US$ 1,538	N/A	US$ 1,538	
	T-Mobile USA, Inc.	-	〃	-	US$ 1,526	N/A	US$ 1,526	
	Zoetis Inc.	-	〃	-	US$ 1,517	N/A	US$ 1,517	
	APA Infrastructure Limited	-	〃	-	US$ 1,511	N/A	US$ 1,511	
	Kinder Morgan, Inc.	-	〃	-	US$ 1,510	N/A	US$ 1,510	
	Phillips 66 Company	-	〃	-	US$ 1,495	N/A	US$ 1,495	
	American International Group, Inc.	-	〃	-	US$ 1,479	N/A	US$ 1,479	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Essex Portfolio, L.P.	-	Financial assets at fair value through other comprehensive income	-	US$ 1,477	N/A	US$ 1,477	
	Microchip Technology Incorporated	-	〃	-	US$ 1,477	N/A	US$ 1,477	
	Amcor Flexibles North America Inc.	-	〃	-	US$ 1,473	N/A	US$ 1,473	
	Wipro IT Services LLC	-	〃	-	US$ 1,471	N/A	US$ 1,471	
	NSTAR Electric Company	-	〃	-	US$ 1,455	N/A	US$ 1,455	
	Duke Energy Florida, LLC	-	〃	-	US$ 1,448	N/A	US$ 1,448	
	National Rural Utilities Cooperative Finance Corporation	-	〃	-	US$ 1,445	N/A	US$ 1,445	
	Alimentation Couche-Tard Inc.	-	〃	-	US$ 1,442	N/A	US$ 1,442	
	The Cigna Group	-	〃	-	US$ 1,340	N/A	US$ 1,340	
	Eastern Gas Transmission and Storage, Inc.	-	〃	-	US$ 1,319	N/A	US$ 1,319	
	Caterpillar Financial Services Corporation	-	〃	-	US$ 1,300	N/A	US$ 1,300	
	The Williams Companies, Inc.	-	〃	-	US$ 1,259	N/A	US$ 1,259	
	Andrew W. Mellon Foundation, The	-	〃	-	US$ 1,247	N/A	US$ 1,247	
	Union Pacific Corporation	-	〃	-	US$ 1,227	N/A	US$ 1,227	
	Ecolab Inc.	-	〃	-	US$ 1,205	N/A	US$ 1,205	
	Sysco Corporation	-	〃	-	US$ 1,198	N/A	US$ 1,198	
	Mondelez International Holdings Netherlands B.V.	-	〃	-	US$ 1,115	N/A	US$ 1,115	
	Ferguson Finance PLC	-	〃	-	US$ 1,113	N/A	US$ 1,113	
	Reliance Standard Life Global Funding II	-	〃	-	US$ 1,112	N/A	US$ 1,112	
	Nucor Corporation	-	〃	-	US$ 1,072	N/A	US$ 1,072	
	AIB Group plc	-	〃	-	US$ 1,065	N/A	US$ 1,065	
	Enterprise Products Operating LLC	-	〃	-	US$ 1,034	N/A	US$ 1,034	
	Lennox International Inc.	-	〃	-	US$ 1,026	N/A	US$ 1,026	
	New York State Electric & Gas Corporation	-	〃	-	US$ 1,026	N/A	US$ 1,026	
	Sabine Pass Liquefaction, LLC	-	〃	-	US$ 1,018	N/A	US$ 1,018	
	Scottish Power Limited	-	〃	-	US$ 1,004	N/A	US$ 1,004	
	Suntory Holdings Limited	-	〃	-	US$ 973	N/A	US$ 973	
	Canadian Pacific Railway Company	-	〃	-	US$ 959	N/A	US$ 959	
	AIA Group Limited	-	〃	-	US$ 956	N/A	US$ 956	
	LYB Finance Company B.V.	-	〃	-	US$ 942	N/A	US$ 942	
	Piedmont Natural Gas Company, Inc.	-	〃	-	US$ 932	N/A	US$ 932	
	Juniper Networks, Inc.	-	〃	-	US$ 926	N/A	US$ 926	
	Lennar Corporation	-	〃	-	US$ 923	N/A	US$ 923	
	Amcor Finance (USA), Inc.	-	〃	-	US$ 917	N/A	US$ 917	
	BAE Systems Finance Inc.	-	〃	-	US$ 917	N/A	US$ 917	
	The Interpublic Group of Companies, Inc.	-	〃	-	US$ 916	N/A	US$ 916	
	AEP Texas Inc.	-	〃	-	US$ 914	N/A	US$ 914	
	Assurant, Inc.	-	〃	-	US$ 914	N/A	US$ 914	
	Unilever Capital Corporation	-	〃	-	US$ 890	N/A	US$ 890	
	Reynolds American Inc.	-	〃	-	US$ 889	N/A	US$ 889	
	County of Palm Beach, Florida	-	〃	-	US$ 825	N/A	US$ 825	
	TransCanada PipeLines Limited	-	〃	-	US$ 819	N/A	US$ 819	
	CubeSmart, L.P.	-	〃	-	US$ 784	N/A	US$ 784	
	Southwest Gas Corporation	-	〃	-	US$ 771	N/A	US$ 771	
	Zimmer Biomet Holdings, Inc.	-	〃	-	US$ 771	N/A	US$ 771	
	BP Capital Markets America, Inc.	-	〃	-	US$ 770	N/A	US$ 770	
	Niagara Mohawk Power Corporation	-	〃	-	US$ 761	N/A	US$ 761	
	Veralto Corporation	-	〃	-	US$ 759	N/A	US$ 759	
	The Brooklyn Union Gas Company	-	〃	-	US$ 755	N/A	US$ 755	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Mars, Incorporated	-	Financial assets at fair value through other comprehensive income	-	US$ 754	N/A	US$ 754	
	Manufacturers and Traders Trust Company	-	〃	-	US$ 751	N/A	US$ 751	
	Consolidated Edison Company of New York, Inc.	-	〃	-	US$ 750	N/A	US$ 750	
	Oklahoma Gas and Electric Company	-	〃	-	US$ 749	N/A	US$ 749	
	Voya Financial, Inc.	-	〃	-	US$ 749	N/A	US$ 749	
	Marsh & McLennan Companies, Inc.	-	〃	-	US$ 747	N/A	US$ 747	
	TELUS Corporation	-	〃	-	US$ 745	N/A	US$ 745	
	Waste Management, Inc.	-	〃	-	US$ 744	N/A	US$ 744	
	Visa Inc.	-	〃	-	US$ 739	N/A	US$ 739	
	PACCAR Financial Corp.	-	〃	-	US$ 738	N/A	US$ 738	
	Sky Limited	-	〃	-	US$ 691	N/A	US$ 691	
	Hyundai Capital Services, Inc.	-	〃	-	US$ 689	N/A	US$ 689	
	The Allstate Corporation	-	〃	-	US$ 675	N/A	US$ 675	
	QNB Finance Ltd.	-	〃	-	US$ 673	N/A	US$ 673	
	Sodexo, Inc.	-	〃	-	US$ 672	N/A	US$ 672	
	Automatic Data Processing, Inc.	-	〃	-	US$ 649	N/A	US$ 649	
	L3Harris Technologies, Inc.	-	〃	-	US$ 617	N/A	US$ 617	
	Southern Power Company	-	〃	-	US$ 612	N/A	US$ 612	
	Burlington Resources Inc.	-	〃	-	US$ 600	N/A	US$ 600	
	Starbucks Corporation	-	〃	-	US$ 594	N/A	US$ 594	
	Florida Hurricane Catastrophe Fund Finance Corporation	-	〃	-	US$ 593	N/A	US$ 593	
	Infor, Inc.	-	〃	-	US$ 589	N/A	US$ 589	
	Columbia Pipelines Holding Company, LLC	-	〃	-	US$ 566	N/A	US$ 566	
	American Water Capital Corp.	-	〃	-	US$ 562	N/A	US$ 562	
	Columbia Pipelines Operating Co. LLC	-	〃	-	US$ 538	N/A	US$ 538	
	Shell International Finance B.V.	-	〃	-	US$ 536	N/A	US$ 536	
	Arizona Public Service Company	-	〃	-	US$ 520	N/A	US$ 520	
	State of Hawaii	-	〃	-	US$ 515	N/A	US$ 515	
	Intesa Sanpaolo S.p.A.	-	〃	-	US$ 512	N/A	US$ 512	
	ConocoPhillips Company	-	〃	-	US$ 510	N/A	US$ 510	
	Mississippi Power Company	-	〃	-	US$ 510	N/A	US$ 510	
	MassMutual Global Funding II	-	〃	-	US$ 506	N/A	US$ 506	
	Westpac New Zealand Limited	-	〃	-	US$ 499	N/A	US$ 499	
	Deutsche Telekom International Finance B.V.	-	〃	-	US$ 496	N/A	US$ 496	
	Haleon UK Capital plc	-	〃	-	US$ 488	N/A	US$ 488	
	Commonwealth Bank of Australia	-	〃	-	US$ 487	N/A	US$ 487	
	Trane Technologies Luxembourg Finance S.A.	-	〃	-	US$ 486	N/A	US$ 486	
	Genuine Parts Company	-	〃	-	US$ 480	N/A	US$ 480	
	Altria Group, Inc.	-	〃	-	US$ 477	N/A	US$ 477	
	McCormick & Company, Incorporated	-	〃	-	US$ 477	N/A	US$ 477	
	DENSO Corporation	-	〃	-	US$ 453	N/A	US$ 453	
	Brazos Higher Education Authority Inc	-	〃	-	US$ 444	N/A	US$ 444	
	Pernod Ricard International Finance LLC	-	〃	-	US$ 435	N/A	US$ 435	
	Aker BP ASA	-	〃	-	US$ 433	N/A	US$ 433	
	The Home Depot, Inc.	-	〃	-	US$ 416	N/A	US$ 416	
	Target Corporation	-	〃	-	US$ 412	N/A	US$ 412	
	National Australia Bank Limited	-	〃	-	US$ 410	N/A	US$ 410	
	Entergy Corporation	-	〃	-	US$ 395	N/A	US$ 395	
	GlaxoSmithKline Capital Inc.	-	〃	-	US$ 394	N/A	US$ 394	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Aflac Incorporated	-	Financial assets at fair value through other comprehensive income	-	US$ 392	N/A	US$ 392	
	Gilead Sciences, Inc.	-	〃	-	US$ 391	N/A	US$ 391	
	University of Massachusetts Building Authority	-	〃	-	US$ 388	N/A	US$ 388	
	Banco del Estado de Chile	-	〃	-	US$ 386	N/A	US$ 386	
	Sierra Pacific Power Company	-	〃	-	US$ 381	N/A	US$ 381	
	PepsiCo, Inc.	-	〃	-	US$ 364	N/A	US$ 364	
	The Norinchukin Bank	-	〃	-	US$ 362	N/A	US$ 362	
	Cargill, Incorporated	-	〃	-	US$ 359	N/A	US$ 359	
	Mid-America Apartments, L.P.	-	〃	-	US$ 308	N/A	US$ 308	
	Electricité de France S.A.	-	〃	-	US$ 304	N/A	US$ 304	
	Consumers Energy Company	-	〃	-	US$ 302	N/A	US$ 302	
	Aptiv PLC	-	〃	-	US$ 290	N/A	US$ 290	
	National Grid plc	-	〃	-	US$ 289	N/A	US$ 289	
	Nordson Corporation	-	〃	-	US$ 286	N/A	US$ 286	
	QatarEnergy	-	〃	-	US$ 275	N/A	US$ 275	
	Marriott International, Inc.	-	〃	-	US$ 271	N/A	US$ 271	
	KBC Group NV	-	〃	-	US$ 239	N/A	US$ 239	
	Pennsylvania Electric Company	-	〃	-	US$ 235	N/A	US$ 235	
	Humana Inc.	-	〃	-	US$ 214	N/A	US$ 214	
	Hoover Alabama Board Of Education	-	〃	-	US$ 104	N/A	US$ 104	
	Beth Israel Deaconess Medical Center, Inc.	-	〃	-	US$ 88	N/A	US$ 88	
	Metropolitan Edison Company	-	〃	-	US$ 81	N/A	US$ 81	
	County of Pima, Arizona	-	〃	-	US$ 79	N/A	US$ 79	
	State of Wisconsin	-	〃	-	US$ 64	N/A	US$ 64	
	Aon Corporation	-	〃	-	US$ 52	N/A	US$ 52	
	County of Nueces, Texas	-	〃	-	US$ 25	N/A	US$ 25	
	Bank of America Corporation	-	Financial assets at amortized cost	-	US$ 799,449	N/A	US$ 800,590	
	Wells Fargo & Company	-	〃	-	US$ 619,830	N/A	US$ 626,602	
	Morgan Stanley	-	〃	-	US$ 566,880	N/A	US$ 570,092	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 432,811	N/A	US$ 418,343	
	JPMorgan Chase & Co.	-	〃	-	US$ 391,868	N/A	US$ 394,331	
	Citigroup Inc.	-	〃	-	US$ 251,481	N/A	US$ 252,491	
	Citigroup Global Markets Inc.	-	〃	-	US$ 149,951	N/A	US$ 149,628	
	Citigroup Global Markets Holdings Inc.	-	〃	-	US$ 99,968	N/A	US$ 99,424	
	Goldman Sachs Finance Corp International Ltd	-	〃	-	US$ 99,905	N/A	US$ 99,281	
	Citigroup	-	〃	-	US$ 19,981	N/A	US$ 20,156	
	Nationwide Building Society	-	〃	-	US$ 10,338	N/A	US$ 10,153	
	Daimler Trucks Finance North America LLC	-	〃	-	US$ 9,685	N/A	US$ 9,633	
	Great-West Lifeco U.S. Finance 2020, Lp	-	〃	-	US$ 9,550	N/A	US$ 9,419	
	Mizuho Financial Group, Inc.	-	〃	-	US$ 9,446	N/A	US$ 9,562	
	BNP Paribas SA	-	〃	-	US$ 9,265	N/A	US$ 9,233	
	Fédération des caisses Desjardins du Québec	-	〃	-	US$ 9,185	N/A	US$ 9,088	
	UBS Group AG	-	〃	-	US$ 9,172	N/A	US$ 9,095	
	Nomura Holdings, Inc.	-	〃	-	US$ 9,155	N/A	US$ 9,031	
	NongHyup Bank	-	〃	-	US$ 8,839	N/A	US$ 8,799	
	Banque Fédérative du Crédit Mutuel	-	〃	-	US$ 8,435	N/A	US$ 8,442	
	Canadian Imperial Bank of Commerce	-	〃	-	US$ 8,417	N/A	US$ 8,360	
	Banco Santander, S.A.	-	〃	-	US$ 8,301	N/A	US$ 8,251	
	Ventas Realty, Limited Partnership	-	〃	-	US$ 8,279	N/A	US$ 8,206	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Enel Finance International N.V.	-	Financial assets at amortized cost	-	US$ 8,250	N/A	US$ 8,188	
	Protective Life Global Funding	-	〃	-	US$ 7,983	N/A	US$ 7,896	
	CRH America, Inc.	-	〃	-	US$ 7,954	N/A	US$ 7,849	
	Mercedes-Benz Finance North America LLC	-	〃	-	US$ 7,916	N/A	US$ 7,894	
	BPCE SA	-	〃	-	US$ 7,874	N/A	US$ 7,794	
	Sydney Airport Finance Company Pty Ltd	-	〃	-	US$ 7,727	N/A	US$ 7,672	
	Sumitomo Mitsui Financial Group, Inc.	-	〃	-	US$ 7,538	N/A	US$ 7,515	
	AIG Global Funding	-	〃	-	US$ 7,480	N/A	US$ 7,421	
	Banco Bilbao Vizcaya Argentaria, S.A.	-	〃	-	US$ 7,042	N/A	US$ 7,006	
	Southern California Edison Company	-	〃	-	US$ 5,913	N/A	US$ 5,924	
	NatWest Markets Plc	-	〃	-	US$ 5,515	N/A	US$ 5,483	
	F&G Global Funding	-	〃	-	US$ 5,511	N/A	US$ 5,440	
	ING Groep N.V.	-	〃	-	US$ 5,244	N/A	US$ 5,307	
	Athene Global Funding	-	〃	-	US$ 5,122	N/A	US$ 5,032	
	Hyundai Capital Services, Inc.	-	〃	-	US$ 5,007	N/A	US$ 4,964	
	Svenska Handelsbanken AB (publ)	-	〃	-	US$ 4,723	N/A	US$ 4,755	
	QNB Finance Ltd.	-	〃	-	US$ 4,421	N/A	US$ 4,423	
	Sumitomo Mitsui Trust Bank, Limited	-	〃	-	US$ 4,165	N/A	US$ 4,120	
	Lloyds Banking Group plc	-	〃	-	US$ 3,979	N/A	US$ 3,949	
	Deutsche Bank AG - New York Branch	-	〃	-	US$ 3,974	N/A	US$ 3,944	
	Volkswagen Group of America Finance, LLC	-	〃	-	US$ 3,853	N/A	US$ 3,803	
	Mitsubishi UFJ Financial Group, Inc.	-	〃	-	US$ 3,747	N/A	US$ 3,725	
	Jackson National Life Global Funding	-	〃	-	US$ 3,345	N/A	US$ 3,276	
	ANZ New Zealand (Int'l) Limited	-	〃	-	US$ 3,251	N/A	US$ 3,216	
	Scottish Power Limited	-	〃	-	US$ 3,188	N/A	US$ 3,197	
	Spectra Energy Partners, LP	-	〃	-	US$ 2,851	N/A	US$ 2,812	
	National Bank of Canada	-	〃	-	US$ 2,091	N/A	US$ 2,088	
	Georgia-Pacific LLC	-	〃	-	US$ 1,254	N/A	US$ 1,253	
	GA Global Funding Trust	-	〃	-	US$ 1,174	N/A	US$ 1,175	
	Reliance Standard Life Global Funding II	-	〃	-	US$ 1,083	N/A	US$ 1,075	
	Barclays Bank PLC	-	〃	-	US$ 745	N/A	US$ 744	
	AIA Group Limited	-	〃	-	US$ 585	N/A	US$ 587	
	Agency mortgage-backed securities							
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	-	Financial assets at fair value through other comprehensive income	-	US$ 658,944	N/A	US$ 658,944	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 350,328	N/A	US$ 350,328	
	Government National Mortgage Association	-	〃	-	US$ 225,310	N/A	US$ 225,310	
	Government bond/Agency bonds							
	United States Department of The Treasury	-	Financial assets at fair value through other comprehensive income	-	US$ 718,479	N/A	US$ 718,479	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 6,995	N/A	US$ 6,995	
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	-	〃	-	US$ 1,065	N/A	US$ 1,065	
	Federal Home Loan Banks	-	Financial assets at amortized cost	-	US$ 225,000	N/A	US$ 224,645	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 135,000	N/A	US$ 134,845	
	United States Department of The Treasury	-	〃	-	US$ 88,940	N/A	US$ 89,501	
	Asset-backed securities							
	Wells Fargo Commercial Mortgage Trust 2016-Bnk1	-	Financial assets at fair value through other comprehensive income	-	US$ 9,941	N/A	US$ 9,941	
	JPMBB Commercial Mortgage Securities Trust 2014-C24	-	〃	-	US$ 9,818	N/A	US$ 9,818	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Toyota Auto Receivables 2022-B Owner Trust	-	Financial assets at fair value through other comprehensive income	-	US$ 9,665	N/A	US$ 9,665	
	Gm Financial Consumer Automobile Receivables Trust 2023-3	-	〃	-	US$ 9,033	N/A	US$ 9,033	
	Ford Credit Auto Owner Trust 2021-Rev2	-	〃	-	US$ 7,674	N/A	US$ 7,674	
	Hyundai Auto Receivables Trust 2021-C	-	〃	-	US$ 7,388	N/A	US$ 7,388	
	Toyota Auto Loan Extended Note Trust 2023-1	-	〃	-	US$ 7,351	N/A	US$ 7,351	
	Citigroup Commercial Mortgage Trust 2015-GC33	-	〃	-	US$ 7,069	N/A	US$ 7,069	
	Ford Credit Auto Owner Trust 2020-REV2	-	〃	-	US$ 6,861	N/A	US$ 6,861	
	Hyundai Auto Receivables Trust 2023-B	-	〃	-	US$ 6,280	N/A	US$ 6,280	
	BBCMS Mortgage Trust 2020-C8	-	〃	-	US$ 6,135	N/A	US$ 6,135	
	Morgan Stanley Bank America Merrill Lynch Trust 2016-C30	-	〃	-	US$ 6,131	N/A	US$ 6,131	
	Honda Auto Receivables 2023-2 Owner Trust	-	〃	-	US$ 6,028	N/A	US$ 6,028	
	Morgan Stanley Capital I Trust 2021-L6	-	〃	-	US$ 5,902	N/A	US$ 5,902	
	Bank 2020-BNK26	-	〃	-	US$ 5,840	N/A	US$ 5,840	
	Hudson Yards 2016-10HY Mortgage Trust	-	〃	-	US$ 5,805	N/A	US$ 5,805	
	Benchmark 2019-B11 Mortgage Trust	-	〃	-	US$ 5,699	N/A	US$ 5,699	
	Citigroup Commercial Mortgage Trust 2021-PRM2	-	〃	-	US$ 5,502	N/A	US$ 5,502	
	Bank 2021-bnk33	-	〃	-	US$ 5,496	N/A	US$ 5,496	
	Benchmark 2019-B12 Mortgage Trust	-	〃	-	US$ 5,351	N/A	US$ 5,351	
	Bank 2023-BNK46	-	〃	-	US$ 5,244	N/A	US$ 5,244	
	Benchmark 2023-B39 Mortgage Trust	-	〃	-	US$ 5,208	N/A	US$ 5,208	
	MSWF Commercial Mortgage Trust 2023-1	-	〃	-	US$ 5,172	N/A	US$ 5,172	
	BBCMS 2018-Tall Mortgage Trust	-	〃	-	US$ 5,101	N/A	US$ 5,101	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	〃	-	US$ 5,027	N/A	US$ 5,027	
	Wells Fargo Commercial Mortgage Trust 2021-C59	-	〃	-	US$ 4,815	N/A	US$ 4,815	
	CSAIL 2018-CX11	-	〃	-	US$ 4,777	N/A	US$ 4,777	
	Bank 2017-Bnk6	-	〃	-	US$ 4,772	N/A	US$ 4,772	
	Morgan Stanley Capital I Trust 2016 - BNK2 Fund	-	〃	-	US$ 4,676	N/A	US$ 4,676	
	GM Financial Revolving Receivables Trust 2021-1	-	〃	-	US$ 4,526	N/A	US$ 4,526	
	Bank 2017-BNK9	-	〃	-	US$ 4,162	N/A	US$ 4,162	
	Benchmark 2023-V3 Mortgage Trust	-	〃	-	US$ 4,119	N/A	US$ 4,119	
	Bank 2017 - BNK7	-	〃	-	US$ 4,063	N/A	US$ 4,063	
	MRCD 2019-Prkc Mortgage Trust	-	〃	-	US$ 4,025	N/A	US$ 4,025	
	Msbam 2016-C29	-	〃	-	US$ 4,010	N/A	US$ 4,010	
	Five 2023-V1 Mortgage Trust	-	〃	-	US$ 4,002	N/A	US$ 4,002	
	Citigroup Commercial Mortgage Trust 2014-GC21	-	〃	-	US$ 3,779	N/A	US$ 3,779	
	JPMCC 2017-JP7	-	〃	-	US$ 3,738	N/A	US$ 3,738	
	Bmw Vehicle Owner Trust 2023-A	-	〃	-	US$ 3,636	N/A	US$ 3,636	
	Citigroup Commercial Mortgage Trust 2019-Gc43	-	〃	-	US$ 3,214	N/A	US$ 3,214	
	BANK 2017-BNK5	-	〃	-	US$ 3,132	N/A	US$ 3,132	
	Honda Auto Receivables 2021 - 4 Owner Trust	-	〃	-	US$ 3,081	N/A	US$ 3,081	
	Bank 2019-Bnk22	-	〃	-	US$ 3,057	N/A	US$ 3,057	
	Msbam 2016-C31	-	〃	-	US$ 3,023	N/A	US$ 3,023	
	Commerce 2015-CCRE24 Mortgage Trust	-	〃	-	US$ 2,991	N/A	US$ 2,991	
	WFRBS Commercial Mortgage Trust 2014-C25	-	〃	-	US$ 2,932	N/A	US$ 2,932	
	Bmo 2023-C5 Mortgage Trust	-	〃	-	US$ 2,806	N/A	US$ 2,806	
	Sreit Commercial Mortgage Trust 2021-Mfp	-	〃	-	US$ 2,729	N/A	US$ 2,729	
	Benchmark 2019-B15 Mortgage Trust	-	〃	-	US$ 2,574	N/A	US$ 2,574	
	DCENT_23-2	-	〃	-	US$ 2,521	N/A	US$ 2,521	
	Toyota Auto Receivables 2023-C Owner Trust	-	〃	-	US$ 2,519	N/A	US$ 2,519	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	Benchmark 2018-B3 Commercial Mortgage Trust	-	Financial assets at fair value through other comprehensive income	-	US$ 2,462	N/A	US$ 2,462	
	Ford Credit Auto Owner Trust 2020-Rev1	-	〃	-	US$ 2,415	N/A	US$ 2,415	
	JPMDB 2017-C7	-	〃	-	US$ 2,415	N/A	US$ 2,415	
	GS Mortgage Securities Trust 2015-GC32	-	〃	-	US$ 2,368	N/A	US$ 2,368	
	Citigroup Commercial Mortgage Trust 2016-C1	-	〃	-	US$ 2,304	N/A	US$ 2,304	
	Citigroup Commercial Mortgage Trust 2015-P1	-	〃	-	US$ 2,174	N/A	US$ 2,174	
	Wells Fargo Commercial Mortgage Trust 2020-C55	-	〃	-	US$ 2,110	N/A	US$ 2,110	
	Citigroup Commercial Mortgage Trust 2015-GC27	-	〃	-	US$ 2,107	N/A	US$ 2,107	
	Mhc Commercial Mortgage Trust 2021-Mhc	-	〃	-	US$ 2,090	N/A	US$ 2,090	
	Ford Credit Auto Owner Trust 2023-A	-	〃	-	US$ 1,992	N/A	US$ 1,992	
	Benchmark 2018-B4 Mortgage Trust	-	〃	-	US$ 1,930	N/A	US$ 1,930	
	Morgan Stanley Capital I Trust	-	〃	-	US$ 1,844	N/A	US$ 1,844	
	Dolp Trust 2021-NYC	-	〃	-	US$ 1,821	N/A	US$ 1,821	
	CGCMT 2017-P8 Mortgage Trust	-	〃	-	US$ 1,630	N/A	US$ 1,630	
	Wells Fargo Commercial Mortgage Trust 2015-C30	-	〃	-	US$ 1,574	N/A	US$ 1,574	
	JPMBB Commercial Mortgage Securities Trust 2015-C27	-	〃	-	US$ 1,527	N/A	US$ 1,527	
	Hyundai Auto Receivables Trust 2022-A	-	〃	-	US$ 1,524	N/A	US$ 1,524	
	Honda Auto Receivables 2023-1 Owner Trust	-	〃	-	US$ 1,518	N/A	US$ 1,518	
	UBS Commercial Mortgage Trust 2018-C11	-	〃	-	US$ 1,495	N/A	US$ 1,495	
	COMM 2020-CBM Mortgage Trust	-	〃	-	US$ 1,476	N/A	US$ 1,476	
	Morgan Stanley Capital I Trust 2021-L5	-	〃	-	US$ 1,369	N/A	US$ 1,369	
	Wells Fargo Commercial Mortgage Trust 2018-C44	-	〃	-	US$ 1,305	N/A	US$ 1,305	
	Wells Fargo Commercial Mortgage Trust 2015-C29	-	〃	-	US$ 1,243	N/A	US$ 1,243	
	Ford Credit Auto Owner Trust 2022-C	-	〃	-	US$ 1,242	N/A	US$ 1,242	
	Bank 2019-Bnk17	-	〃	-	US$ 1,237	N/A	US$ 1,237	
	GM Financial Consumer Automobile Receivables Trust 2023-1	-	〃	-	US$ 1,219	N/A	US$ 1,219	
	FORD CREDIT AUTO OWNER TRUST 2023-REV2	-	〃	-	US$ 1,124	N/A	US$ 1,124	
	American Express Credit Account Master Trust	-	〃	-	US$ 1,016	N/A	US$ 1,016	
	Morgan Stanley Capital I Trust 2015 - UBS8	-	〃	-	US$ 962	N/A	US$ 962	
	Wells Fargo Commercial Mortgage Trust 2016-LC24	-	〃	-	US$ 939	N/A	US$ 939	
	Ford Credit Auto Owner Trust 2022-A	-	〃	-	US$ 887	N/A	US$ 887	
	Bank 2023-Bnk45	-	〃	-	US$ 865	N/A	US$ 865	
	Nissan Auto Receivables 2023-A Owner Trust	-	〃	-	US$ 829	N/A	US$ 829	
	Toyota Auto Receivables 2021-D Owner Trust	-	〃	-	US$ 824	N/A	US$ 824	
	Benchmark 2021-B24 Mortgage Trust	-	〃	-	US$ 818	N/A	US$ 818	
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	〃	-	US$ 791	N/A	US$ 791	
	COMM Mortgage Trust Series 2015-LC19	-	〃	-	US$ 778	N/A	US$ 778	
	Honda Auto Receivables 2022-2 Owner Trust	-	〃	-	US$ 733	N/A	US$ 733	
	Citigroup Commercial Mortgage Trust 2015-GC35	-	〃	-	US$ 685	N/A	US$ 685	
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	〃	-	US$ 642	N/A	US$ 642	
	JPMCC Commercial Mortgage Securities Trust 2016 - JP3	-	〃	-	US$ 581	N/A	US$ 581	
	JPMBB Commercial Mortgage Securities Trust 2016-C1	-	〃	-	US$ 574	N/A	US$ 574	
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	〃	-	US$ 529	N/A	US$ 529	
	Ford Credit Auto Owner Trust 2022-B	-	〃	-	US$ 444	N/A	US$ 444	
	Honda Auto Receivables 2021-2 Owner Trust	-	〃	-	US$ 427	N/A	US$ 427	
	Citigroup Commercial Mortgage Trust 2018-C5	-	〃	-	US$ 425	N/A	US$ 425	
	Toyota Auto Receivables 2021-C Owner Trust	-	〃	-	US$ 387	N/A	US$ 387	
	Wells Fargo Commercial Mortgage Trust 2015-NXS3	-	〃	-	US$ 255	N/A	US$ 255	
	Benchmark 2019-B14 Mortgage Trust	-	〃	-	US$ 239	N/A	US$ 239	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023 Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	Note
TSMC Global	JPMCC 2015 - JP1	-	Financial assets at fair value through other comprehensive income	-	US$ 176	N/A	US$ 176	
	COMM 2015-CCRE22 Mortgage Trust	-	〃	-	US$ 151	N/A	US$ 151	
	GS Mortgage Securities Trust 2014-GC24	-	〃	-	US$ 149	N/A	US$ 149	
	Morgan Stanley Capital I Trust 2019-H6	-	〃	-	US$ 133	N/A	US$ 133	
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	〃	-	US$ 124	N/A	US$ 124	
	Morgan Stanley Capital I Trust 2019-H7	-	〃	-	US$ 120	N/A	US$ 120	
	JPMDB Commercial Mortgage Securities Trust 2019-COR6	-	〃	-	US$ 114	N/A	US$ 114	
	Morgan Stanley Capital I Trust 2018-H3	-	〃	-	US$ 104	N/A	US$ 104	
	Bank 2019-BNK23	-	〃	-	US$ 97	N/A	US$ 97	
	Citigroup Commercial Mortgage Trust 2014-GC23	-	〃	-	US$ 83	N/A	US$ 83	
	GS Mortgage Securities Trust 2014-GC26	-	〃	-	US$ 64	N/A	US$ 64	
	CF 2019-CF1 Mortgage Trust	-	〃	-	US$ 50	N/A	US$ 50	
	BBCMS Mortgage Trust 2020-C7	-	〃	-	US$ 37	N/A	US$ 37	
	Non-publicly traded equity investments							
	Primavera Capital Fund II L.P.	-	Financial assets at fair value through other comprehensive income	-	US$ 86,515	4	US$ 86,515	
VTAF II	Non-publicly traded equity investments							
	5V Technologies, Inc.	-	Financial assets at fair value through other comprehensive income	1	-	-	-	
	Aether Systems, Inc.	-	〃	1,085	-	20	-	
	Publicly traded stocks							
	Sentelic Corporation	-	Financial assets at fair value through other comprehensive income	913	US$ 2,757	3	US$ 2,757	
VTAF III	Non-publicly traded equity investments							
	LiquidLeds Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US$ 800	14	US$ 800	
	Mutual-Pak	-	〃	1,701	US$ 337	17	US$ 337	
	Neoconix, Inc.	-	〃	4,147	US$ 174	-	US$ 174	
Emerging Fund	Convertible bonds							
	Movandi Corporation	-	Financial assets at fair value through Profit or Loss	-	US$ 4,168	N/A	US$ 4,168	
	Encharge AI, Inc.	-	〃	-	US$ 3,099	N/A	US$ 3,099	
	Non-publicly traded equity investments							
	Astera Labs, Inc.	-	Financial assets at fair value through other comprehensive income	1,487	US$ 9,680	-	US$ 9,680	
	Ayar Labs, Inc.	-	〃	345	US$ 5,000	1	US$ 5,000	
	Ethernovia Inc.	-	〃	1,021	US$ 5,000	3	US$ 5,000	
	Empower Semiconductor, Inc.	-	〃	868	US$ 5,000	3	US$ 5,000	
	Lyte AI, Inc.	-	〃	1,128	US$ 5,000	4	US$ 5,000	
	EdgeQ, Inc.	-	〃	1,176	US$ 4,771	2	US$ 4,771	
	SiMa Technologies, Inc.	-	〃	564	US$ 4,000	1	US$ 4,000	
	NeuReality Ltd.	-	〃	122	US$ 3,194	2	US$ 3,194	
	Kinara, Inc.	-	〃	2,015	US$ 3,000	2	US$ 3,000	
	xMEMS Labs, Inc.	-	〃	3,000	US$ 3,000	3	US$ 3,000	
	RiVos, Inc.	-	〃	1,455	US$ 2,833	1	US$ 2,833	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2023				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Development	Convertible preferred stocks							
	IMS Nanofabrication Global, LLC	-	Financial assets at fair value through Profit or Loss	-	US$ 432,795	10	US$ 432,795	
Growth Fund	Non-publicly traded equity investments							
	Astera Labs, Inc.	-	Financial assets at fair value through other comprehensive income	637	US$ 4,146	-	US$ 4,146	
	CNEX Labs, Inc.	-	〃	33	US$ 133	-	US$ 133	
	Publicly traded stocks							
	Marvell Technology Group Ltd.	-	Financial assets at fair value through other comprehensive income	30	US$ 1,786	-	US$ 1,786	

(Concluded)

TABLE 4

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES ACQUIRED AND DISPOSED OF AT COSTS OR PRICES OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC	Non-publicly traded equity investments													
	TSMC Arizona	Investments accounted for using equity method	-	-	1,270	$ 25,639,079	9,230	$ 292,649,510	-	$ -	$ -	$ -	10,500	$ 298,604,975
	JASM	〃	-	-	1,020	23,330,125	1,249	28,062,957	-	-	-	-	2,269	47,087,140
	ESMC	〃	-	-	-	-	100	4,814,293 (Note 2)	-	-	-	-	100	4,768,013
	Emerging Fund	〃	-	-	-	1,760,885	-	641,536	-	-	(244,376)	-	-	1,901,742
	Commercial paper													
	Cathay Financial Holding Co., Ltd.	Financial assets at amortized cost	-	-	-	-	1,687	16,771,708	990	9,900,000	9,900,000	-	697	6,924,665
	Nan Ya Plastics Corporation	〃	-	-	450	4,476,301	1,850	18,413,604	1,700	17,000,000	17,000,000	-	600	5,976,677
	China Steel Corporation	〃	-	-	-	-	200	1,985,566	-	-	-	-	200	1,985,094
	Formosa Plastics Corporation	〃	-	-	200	1,990,459	100	994,402	200	2,000,000	2,000,000	-	100	996,260
	CPC Corporation, Taiwan	〃	-	-	750	7,458,936	150	1,491,352	800	8,000,000	8,000,000	-	100	995,553
	Formosa Chemicals & Fibre Corporation	〃	-	-	250	2,485,666	600	5,969,662	750	7,500,000	7,500,000	-	100	994,540
	Taiwan Power Company	〃	-	-	2,950	29,335,729	550	5,473,392	3,450	34,500,000	34,500,000	-	50	498,916
	Formosa Petrochemical Corporation	〃	-	-	300	2,985,385	-	-	300	3,000,000	3,000,000	-	-	-
TSMC Partners	Fund													
	Matter Venture Partners Fund I, L.P. (Note 3)	Financial assets at fair value through Profit or Loss	-	-	-	US$ -	-	US$ 4,200	-	US$ -	US$ -	US$ -	-	US$ 3,587
	Publicly traded stocks													
	ARM Holdings plc	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	1,961	US$ 100,000	-	US$ -	US$ -	US$ -	1,961	US$ 147,353
TSMC Global	Corporate bond													
	Bank of America Corporation	Financial assets at fair value through other comprehensive income	-	-	-	US$ 76,626	-	US$ 32,499	-	US$ 25,548	US$ 25,685	US$ (137)	-	US$ 86,588
	Morgan Stanley	〃	-	-	-	US$ 83,242	-	US$ 19,579	-	US$ 28,500	US$ 28,612	US$ (112)	-	US$ 76,777
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 51,439	-	US$ 19,457	-	US$ 14,080	US$ 14,166	US$ (86)	-	US$ 58,554
	Wells Fargo & Company	〃	-	-	-	US$ 59,735	-	US$ 11,895	-	US$ 14,783	US$ 14,824	US$ (41)	-	US$ 58,351
	JPMorgan Chase & Co.	〃	-	-	-	US$ 50,629	-	US$ 24,942	-	US$ 19,193	US$ 19,343	US$ (150)	-	US$ 58,153
	Citigroup Inc.	〃	-	-	-	US$ 61,493	-	US$ 18,408	-	US$ 31,203	US$ 31,317	US$ (114)	-	US$ 50,436
	Sumitomo Mitsui Financial Group, Inc.	〃	-	-	-	US$ 27,658	-	US$ 22,091	-	US$ 5,907	US$ 6,079	US$ (172)	-	US$ 45,172

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance: Shares/Units (In Thousands)	Beginning Balance: Amount (Foreign Currencies in Thousands)	Acquisition: Shares/Units (In Thousands)	Acquisition: Amount (Foreign Currencies in Thousands)	Disposal: Shares/Units (In Thousands)	Disposal: Amount (Foreign Currencies in Thousands)	Disposal: Carrying Value (Foreign Currencies in Thousands)	Disposal: Gain/Loss on Disposal (Foreign Currencies in Thousands)	Ending Balance (Note 1): Shares/Units (In Thousands)	Ending Balance (Note 1): Amount (Foreign Currencies in Thousands)
TSMC Global	Mitsubishi UFJ Financial Group, Inc.	Financial assets at fair value through other comprehensive income	-	-	-	US$ 32,949	-	US$ 14,983	-	US$ 12,237	US$ 12,291	US$ (54)	-	US$ 36,903
	Barclays PLC	〃	-	-	-	US$ 11,263	-	US$ 26,220	-	US$ 3,124	US$ 3,150	US$ (26)	-	US$ 35,277
	HSBC Holdings plc	〃	-	-	-	US$ 32,402	-	US$ 7,361	-	US$ 10,731	US$ 10,586	US$ 145	-	US$ 30,124
	CVS Health Corporation	〃	-	-	-	US$ 4,750	-	US$ 26,311	-	US$ 7,017	US$ 7,086	US$ (69)	-	US$ 24,591
	Lloyds Banking Group plc	〃	-	-	-	US$ 10,533	-	US$ 13,842	-	US$ 717	US$ 729	US$ (12)	-	US$ 24,131
	BPCE SA	〃	-	-	-	US$ 14,691	-	US$ 14,478	-	US$ 5,840	US$ 5,850	US$ (10)	-	US$ 23,875
	Oracle Corporation	〃	-	-	-	US$ 21,865	-	US$ 15,752	-	US$ 14,576	US$ 14,653	US$ (77)	-	US$ 23,751
	Capital One Financial Corporation	〃	-	-	-	US$ 14,125	-	US$ 11,035	-	US$ 4,232	US$ 4,259	US$ (27)	-	US$ 21,572
	Credit Agricole SA London Branch	〃	-	-	-	US$ 11,611	-	US$ 10,744	-	US$ 2,624	US$ 2,627	US$ (3)	-	US$ 20,395
	AIG Global Funding	〃	-	-	-	US$ 8,209	-	US$ 12,370	-	US$ 2,660	US$ 2,699	US$ (39)	-	US$ 18,428
	Metropolitan Life Global Funding I	〃	-	-	-	US$ 24,408	-	US$ 4,577	-	US$ 11,143	US$ 11,199	US$ (56)	-	US$ 18,299
	ABN AMRO Bank N.V.	〃	-	-	-	US$ -	-	US$ 17,900	-	US$ -	US$ -	US$ -	-	US$ 18,247
	Danske Bank A/S	〃	-	-	-	US$ 6,149	-	US$ 17,235	-	US$ 7,452	US$ 7,260	US$ 192	-	US$ 16,698
	The Bank of New York Mellon Corporation	〃	-	-	-	US$ 11,282	-	US$ 9,795	-	US$ 5,326	US$ 5,250	US$ 76	-	US$ 16,064
	Amgen Inc.	〃	-	-	-	US$ 310	-	US$ 18,377	-	US$ 5,611	US$ 5,568	US$ 43	-	US$ 13,330
	AerCap Ireland Capital Designated Activity Company	〃	-	-	-	US$ -	-	US$ 12,899	-	US$ -	US$ -	US$ -	-	US$ 13,278
	Pfizer Investment Enterprises Pte. Ltd.	〃	-	-	-	US$ -	-	US$ 12,584	-	US$ -	US$ -	US$ -	-	US$ 12,590
	ONEOK, Inc.	〃	-	-	-	US$ -	-	US$ 10,733	-	US$ -	US$ -	US$ -	-	US$ 11,048
	Credit Suisse AG, New York Branch	〃	-	-	-	US$ 12,688	-	US$ -	-	US$ 12,569	US$ 14,369	US$ (1,800)	-	US$ -
	Bank of America Corporation	Financial assets at amortized cost	-	-	-	US$ 324,757	-	US$ 669,940	-	US$ 202,000	US$ 201,456	US$ 544		US$ 799,449
	Wells Fargo & Company	〃	-	-	-	US$ 274,713	-	US$ 499,184	-	US$ 159,000	US$ 158,626	US$ 374		US$ 619,830
	Morgan Stanley	〃	-	-	-	US$ 60,207	-	US$ 502,595	-	US$ -	US$ -	US$ -		US$ 566,880
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 440,655	-	US$ 261,083	-	US$ 270,500	US$ 270,500	US$ -		US$ 432,811
	JPMorgan Chase & Co.	〃	-	-	-	US$ 280,213	-	US$ 426,264	-	US$ 322,000	US$ 321,685	US$ 315		US$ 391,868
	Citigroup Inc.	〃	-	-	-	US$ 174,540	-	US$ 232,386	-	US$ 159,000	US$ 158,612	US$ 388		US$ 251,481
	Citigroup Global Markets Inc.	〃	-	-	-	US$ 349,886	-	US$ -	-	US$ 200,000	US$ 200,000	US$ -		US$ 149,951
	Citigroup Global Markets Holdings Inc.	〃	-	-	-	US$ 149,951	-	US$ -	-	US$ 50,000	US$ 50,000	US$ -		US$ 99,968
	Goldman Sachs Finance Corp International Ltd	〃	-	-	-	US$ 149,870	-	US$ -	-	US$ 50,000	US$ 50,000	US$ -		US$ 99,905
	Citigroup	〃	-	-	-	US$ -	-	US$ 20,000	-	US$ -	US$ -	US$ -		US$ 19,981
	Jpmorgan LLC	〃	-	-	-	US$ 49,984	-	US$ -	-	US$ 50,000	US$ 50,000	US$ -		US$ -
	Agency mortgage-backed securities													
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	Financial assets at fair value through other comprehensive income	-	-	-	US$ 463,645	-	US$ 258,497	-	US$ 71,635	US$ 72,541	US$ (906)	-	US$ 658,944
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ 284,933	-	US$ 121,863	-	US$ 60,277	US$ 60,692	US$ (415)	-	US$ 350,328
	Government National Mortgage Association	〃	-	-	-	US$ 175,067	-	US$ 70,079	-	US$ 23,182	US$ 23,871	US$ (689)	-	US$ 225,310

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	Government bond/Agency bonds													
	United States Department of The Treasury	Financial assets at fair value through other comprehensive income	-	-	-	US$ 613,603	-	US$ 263,657	-	US$ 177,248	US$ 181,715	US$ (4,467)	-	US$ 718,479
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 9,993	-	US$ 2,994	US$ 3,000	US$ (6)	-	US$ 6,995
	Federal Home Loan Banks	Financial assets at amortized cost	-	-	-	US$ -	-	US$ 225,000	-	US$ -	US$ -	US$ -		US$ 225,000
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 160,000	-	US$ 25,000	US$ 25,000	US$ -		US$ 135,000
	United States Department of The Treasury	〃	-	-	-	US$ -	-	US$ 88,826	-	US$ -	US$ -	US$ -		US$ 88,940
	Asset-backed securities													
	BX Trust 2022-LBA6	Financial assets at fair value through other comprehensive income	-	-	-	US$ 9,655	-	US$ -	-	US$ 9,794	US$ 10,000	US$ (206)	-	US$ -
TSMC Development	Convertible preferred stocks													
	IMS Nanofabrication Global, LLC	Financial assets at fair value through Profit or Loss	-	-	-	US$ -	-	US$ 432,795	-	US$ -	US$ -	US$ -	-	US$ 432,795

Note 1: The ending balance includes the realized gain/loss on equity investment, the amortization of premium/discount on bonds investments and other related adjustment.

Note 2: Includes a prepayment for investment of EUR 139,930 thousand.

Note 3: TSMC Partners expects to invest US$ 20,000 thousand in Matter Venture Partners Fund I based on the resolution of the board of directors. As of the end of this quarter, US$ 4,200 thousand has been remitted.

(Concluded)

TABLE 5

Taiwan Semiconductor Manufacturing Company Limited and Investees

ACQUISITION OF INDIVIDUAL REAL ESTATE PROPERTIES AT COSTS OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate	February 14, 2023 (Note)	US$ 1,881,000 (Note)	Based on the terms in the purchase order	65 counterparties(Note), including: ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Desiccant Technology Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate	May 9, 2023 (Note)	US$ 366,000 (Note)	Based on the terms in the purchase order	65 counterparties(Note), including: ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Desiccant Technology Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc.								
	Real estate	August 8, 2023 (Note)	US$4,363,000 (Note)	Based on the terms in the purchase order	90 counterparties(Note), including: ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. All-Bau AG + Co. Gewerbepark KG	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Areal Holding Gesellschaft mbH, Dresden Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chang Chun Petrochemical Co., Ltd. Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. F6 Cigarettenfabrik GmbH & Co. KG Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kedge Construction Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Li Jin Engineering Co., Ltd Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation TASA Construction Corporation								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Taiwan Puritic Corp. Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Wei Shung Technology Corporation Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.								
	Real estate	November 14, 2023 (Note)	US$ 464,000 (Note)	Based on the terms in the purchase order	27 counterparties(Note), including: Hsinchu Science Park Bureau, Ministry of Science and Technology Southern Taiwan Science Park Bureau, Ministry of Science and Technology	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

Note: The disclosures are expected information based on the capital appropriation approved by the Board of Directors (Right-of-use assets are included). The actual information shall be subject to the final purchase order of TSMC.

(Concluded)

TABLE 6

Taiwan Semiconductor Manufacturing Company Limited and Investees

TOTAL PURCHASES FROM OR SALES TO RELATED PARTIES OF AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Transaction Details				Abnormal Transaction		Notes/Accounts Payable or Receivable		Note
			Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)	% to Total	
TSMC	TSMC North America	Subsidiary	Sales	$ 1,459,559,406	66	Net 30 days from invoice date (Note)	-	-	$ 154,789,324	82	
	JASM	Subsidiary	Sales	356,150	-	Net 30 days from the end of the month of when invoice is issued	-	-	-	-	
	TSMC Arizona	Subsidiary	Sales	145,150	-	Net 30 days from the end of the month of when invoice is issued	-	-	-	-	
	GUC	Associate	Sales	8,898,237	-	Net 30 days from invoice date	-	-	471,728	-	
	TSMC Nanjing	Subsidiary	Purchases	62,252,516	35	Net 30 days from the end of the month of when invoice is issued	-	-	(5,064,282)	9	
	TSMC China	Subsidiary	Purchases	25,643,202	14	Net 30 days from the end of the month of when invoice is issued	-	-	(2,312,769)	4	
	TSMC Washington	Indirect subsidiary	Purchases	8,302,902	5	Net 30 days from the end of the month of when invoice is issued	-	-	(199,158)	-	
	SSMC	Associate	Purchases	3,493,671	2	Net 30 days from the end of the month of when invoice is issued	-	-	(457,348)	1	
	VIS	Associate	Purchases	1,068,535	1	Net 30 days from the end of the month of when invoice is issued	-	-	(66,653)	-	
TSMC North America	GUC	Associate of TSMC	Sales	3,859,301 (US$ 124,986)	-	Net 30 days from invoice date	-	-	43,091 (US$ 1,401)	-	
VisEra Tech	Xintec	Associate of TSMC	Sales	642,113	9	Net 60 days from the end of the month of when invoice is issued	-	-	109,632	12	

Note: The tenor is determined by the payment terms granted to its clients by TSMC North America.

TABLE 7

Taiwan Semiconductor Manufacturing Company Limited and Investees

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
December 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue		Amounts Received in Subsequent Period	Allowance for Bad Debts
					Amount	Action Taken		
TSMC	TSMC North America	Subsidiary	$ 158,537,008	41	$ 114,137	-	$ 81,336,750	$ -
	JASM	Subsidiary	416,139	Note 2	-	-	-	-
	GUC	Associate	471,728	36	-	-	-	-
TSMC North America	TSMC	Parent company	116,051 (US$ 3,774)	Note 2	-	-	-	-
TSMC JDC	TSMC	Parent company	142,303 (JPY 649,192)	Note 2	-	-	-	-
TSMC China	TSMC	Parent company	2,312,769 (RMB 533,456)	33	-	-	-	-
	TSMC Nanjing	The same parent company	38,395,507 (RMB 8,856,278)	Note 2	-	-	-	-
TSMC Nanjing	TSMC	Parent company	5,064,282 (RMB 1,168,110)	27	-	-	-	-
VisEra Tech	Xintec	Associate of TSMC	109,632	63	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	483,851 (US$ 15,737)	Note 2	-	-	-	-
TSMC Washington	TSMC	The ultimate parent of the Company	199,158 (US$ 6,477)	23	-	-	-	-
	TSMC Development	Parent company	342,004 (US$ 11,123)	Note 2	-	-	-	-

Note 1: The calculation of turnover days excludes other receivables from related parties.

Note 2: The ending balance is primarily consisted of other receivables, which is not applicable for the calculation of turnover days.

TABLE 8

Taiwan Semiconductor Manufacturing Company Limited and Investees

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEES OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
FOR THE YEAR ENDED DECEMBER 31, 2023
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2023			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2023 (Foreign Currencies in Thousands)	December 31, 2022 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC	TSMC Global	Tortola, British Virgin Islands	Investment activities	$ 355,162,309	$ 355,162,309	11	100	$ 441,225,883	$ 24,922,961	$ 24,922,961	Subsidiary
	TSMC Arizona	Phoenix, Arizona, U.S.A.	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	329,665,310	37,015,800	10,500	100	298,604,975	(10,924,639)	(10,924,639)	Subsidiary
	TSMC Partners	Tortola, British Virgin Islands	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities	31,456,130	31,456,130	988,268	100	68,143,719	2,776,792	2,776,792	Subsidiary
	JASM	Kumamoto, Japan	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	52,630,042	24,567,085	2,269	71	47,087,140	(2,965,675)	(2,120,037)	Subsidiary
	VIS	Hsin-Chu, Taiwan	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	10,180,677	464,223	28	13,590,430	7,370,074	2,082,598	Associate
	VisEra Tech	Hsin-Chu, Taiwan	Research, design, development, manufacturing, sales, packaging and test of color filter	4,224,082	4,224,082	213,619	67	11,261,961	356,080	240,749	Subsidiary
	SSMC	Singapore	Manufacturing and sales of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	9,728,801	2,040,560	791,533	Associate
	TSMC North America	San Jose, California, U.S.A	Sales and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	6,278,751	836,066	836,066	Subsidiary
	ESMC	Dresden, Germany	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	4,814,293 (Note 4)	-	100	100	4,768,013	(17,570)	(17,570)	Subsidiary
	Xintec	Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	3,759,701	1,375,774	564,191	Associate
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	2,537,706	3,507,885	1,222,121	Associate
	Emerging Fund	Cayman Islands	Investing in technology start-up companies	1,666,585	1,269,425	-	99.9	1,901,742	20,313	20,293	Subsidiary
	TSMC 3DIC	Yokohama, Japan	Engineering support activities	1,144,356	1,144,356	49	100	1,224,449	122,786	122,786	Subsidiary
	TSMC Europe	Amsterdam, the Netherlands	Customer service and supporting activities	15,749	15,749	-	100	592,499	42,865	42,865	Subsidiary
	TSMC JDC	Yokohama, Japan	Engineering support activities	410,680	410,680	15	100	394,191	40,787	40,787	Subsidiary
	VTAF III	Cayman Islands	Investing in technology start-up companies	1,242,679	1,239,621	-	98	257,540	6,619	6,487	Subsidiary
	TSMC Japan	Yokohama, Japan	Customer service and supporting activities	83,760	83,760	6	100	130,403	4,084	4,084	Subsidiary
	VTAF II	Cayman Islands	Investing in technology start-up companies	260,300	260,300	-	98	117,662	429	421	Subsidiary
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	80	100	44,599	1,792	1,792	Subsidiary
TSMC Partners	TSMC Development	Delaware, U.S.A	Investing in companies involved in semiconductor manufacturing	18,046,607 (US$ 586,939)	18,046,607 (US$ 586,939)	-	100	37,841,815 (US$1,230,748)	1,191,778 (US$ 38,760)	Note 2	Subsidiary
	TSMC Technology	Delaware, U.S.A	Engineering support activities	439,129 (US$ 14,282)	439,129 (US$ 14,282)	-	100	1,126,524 (US$ 36,638)	130,938 (US$ 4,284)	Note 2	Subsidiary
	TSMC Canada	Ontario, Canada	Engineering support activities	70,718 (US$ 2,300)	70,718 (US$ 2,300)	2,300	100	378,925 (US$ 12,324)	49,846 (US$ 1,596)	Note 2	Subsidiary

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2023			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2023 (Foreign Currencies in Thousands)	December 31, 2022 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
VTAF III	Growth Fund	Cayman Islands	Investing in technology start-up companies	$ 70,578 (US$ 2,295)	$ 67,504 (US$ 2,195)	-	100	$ 188,990 (US$ 6,147)	$ (996) (US$ (32))	Note 2	Subsidiary
	Mutual-Pak	New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	Note 3	48,991 (US$ 1,593)	Note 3	Note 3	Note 3	Note 3	Note 2	Note 3
TSMC Development	TSMC Washington	Washington, U.S.A	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	-	-	293,637	100	5,829,197 (US$ 189,586)	171,187 (US$ 6,053)	Note 2	Subsidiary

Note 1: The share of profits/losses of investee includes the effect of unrealized gross profit on intercompany transactions.

Note 2: The share of profits/losses of the investee company is not reflected herein as such amount is already included in the share of profits/losses of the investor company.

Note 3: Due to the decrease in shareholding to 17%, the Company consequently ceased to have significant influence over Mutual-Pak. Therefore, the investment in Mutual-Pak was classified as financial assets at FVTOCI starting November 2023.

Note 4: Includes a prepayment for investment of EUR 139,930 thousand.

(Concluded)

TABLE 9

Taiwan Semiconductor Manufacturing Company Limited and Investees

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR YEAR ENDED DECEMBER 31, 2023

(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investee Company	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Accumulated Outflow of Investment from Taiwan as of January 1, 2023 (US$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2023 (US$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of Balance as of December 31, 2023	Accumulated Inward Remittance of Earnings as of December 31, 2023
					Outflow (US$ in Thousands)	Inflow						
TSMC China	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	$ 18,939,667 (RMB 4,502,080)	Note 1	$ 18,939,667 (US$ 596,000)	$ -	$ -	$ 18,939,667 (US$ 596,000)	$ 10,118,593	100%	$ 10,210,745 (Note 2)	$ 95,419,097	$ -
TSMC Nanjing	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	30,521,412 (RMB 6,650,119)	Note 1	30,521,412 (US$ 1,000,000)	-	-	30,521,412 (US$ 1,000,000)	21,755,071	100%	21,762,378 (Note 2)	87,625,830	-

Accumulated Investment in Mainland China as of December 31, 2023 (US$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US$ in Thousands)	Upper Limit on Investment
$ 49,461,079 (US$ 1,596,000)	$ 119,412,667 (US$ 3,596,000)	$ 2,089,957,708 (Note 3)

Note 1: TSMC directly invested US$596,000 thousand in TSMC China and US$1,000,000 thousands in TSMC Nanjing.

Note 2: Amount was recognized based on the audited financial statements.

Note 3: The upper limit on investment in mainland China is determined by sixty percent (60%) of the Company's consolidated net worth.

TABLE 10

Taiwan Semiconductor Manufacturing Company Limited

INFORMATION ON MAJOR SHAREHOLDERS
DECEMBER 31, 2023

Shareholders (Note 1)	Shares	
	Total Shares Owned	Ownership Percentage (Note 2)
ADR-Taiwan Semiconductor Manufacturing Company Ltd.	5,315,513,063	20.50%
National Development Fund, Executive Yuan	1,653,709,980	6.38%

Note 1: Major shareholders shows the list of all shareholders with ownership of 5 percent or greater.

Note 2: The calculation of ownership percentage is rounded to two decimal places.

THE CONTENTS OF STATEMENTS OF MAJOR ACCOUNTING ITEMS

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CASH AND CASH EQUIVALENTS
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Item	Description	Amount
Cash		
Petty cash		$ 400
Cash in banks		
Checking accounts and demand deposits		4,044,596
Foreign currency deposits	Including US$1,572,022 thousand @30.747, JPY7,103,748 thousand @0.2192 and EUR7,299 thousand @34.175	50,141,558
Time deposits	From 2023.08.02 to 2024.05.31, interest rates at 0.84%-5.99%, including NT$483,710,492 thousand, US$5,157,940 thousand @30.747 and EUR400,000 thousand @34.175	655,971,678
Cash equivalents		
Money market funds		7,438,588
Repurchase agreements	Expired by 2024.01.29, interest rates at 5.95%	1,106,892
Total		$ 718,703,712

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NOTES AND ACCOUNTS RECEIVABLE, NET
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Client Name	Amount
Client A	$ 13,304,349
Client B	5,770,773
Client C	2,393,706
Client D	2,271,656
Others (Note)	10,346,934
	34,087,418
Less: Allowance for doubtful accounts	(530,139)
Total	$ 33,557,279

Note: The amount of individual client included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF RECEIVABLES FROM RELATED PARTIES
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Client Name	Amount
TSMC North America	$ 154,789,324
Others (Note)	472,553
Total	$ 155,261,877

Note: The amount of individual client included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF INVENTORIES
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Item	Amount	
	Cost	Net Realizable Value
Finished goods	$ 33,839,662	$ 98,436,995
Work in process	153,362,168	592,888,207
Raw materials	37,279,545	37,279,545
Supplies and spare parts	13,777,820	13,777,820
Total	$ 238,259,195	$ 742,382,567

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGES IN INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD
FOR THE YEAR ENDED DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

	Balance, January 1, 2023		Additions in Investment		Decrease in Investment		Increase (Decrease) in Using the Equity Method	Balance, December 31, 2023			Market Value or Net Assets Value		
Investees	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Amount (Note 2)	Shares (In Thousands)	%	Amount	Unit Price (NT$)	Total Amount	Collateral
Stocks													
TSMC Global	11	$ 411,992,426	-	$ -	-	$ -	$ 29,233,457	11	100	$ 441,225,883	$ -	$ 441,225,883	Nil
TSMC Arizona	1,270	25,639,079	9,230	292,649,510	-	-	(19,683,614)	10,500	100	298,604,975	-	298,642,301	Nil
TSMC Partners	988,268	63,697,217	-	-	-	-	4,446,502	988,268	100	68,143,719	-	68,199,776	Nil
JASM	1,020	23,330,125	1,249	28,062,957	-	-	(4,305,942)	2,269	71	47,087,140	-	47,211,905	Nil
VIS	464,223	13,492,653	-	-	-	-	97,777	464,223	28	13,590,430	82 (Note 1)	37,834,215	Nil
VisEra Tech	213,619	11,467,860	-	-	-	-	(205,899)	213,619	67	11,261,961	277 (Note 1)	59,065,654	Nil
SSMC	314	8,934,731	-	-	-	-	794,070	314	39	9,728,801	-	9,514,817	Nil
TSMC North America	11,000	5,449,755	-	-	-	-	828,996	11,000	100	6,278,751	-	6,278,751	Nil
ESMC	-	-	100	4,814,293 (Note 3)	-	-	(46,280)	100	100	4,768,013	-	4,768,013	Nil
Xintec	111,282	3,528,417	-	-	-	-	231,284	111,282	41	3,759,701	128 (Note 1)	14,188,445	Nil
GUC	46,688	1,666,651	-	-	-	-	871,055	46,688	35	2,537,706	1,740 (Note 1)	81,236,875	Nil
TSMC 3DIC	49	1,172,706	-	-	-	-	51,743	49	100	1,224,449	-	1,224,449	Nil
TSMC Europe	-	527,693	-	-	-	-	64,806	-	100	592,499	-	592,499	Nil
TSMC JDC	15	376,176	-	-	-	-	18,015	15	100	394,191	-	394,191	Nil
TSMC Japan	6	134,560	-	-	-	-	(4,157)	6	100	130,403	-	130,403	Nil
TSMC Korea	80	44,082	-	-	-	-	517	80	100	44,599	-	44,599	Nil
Subtotal		571,454,131		325,526,760		-	12,392,330			909,373,221		1,070,552,776	
Capital													
TSMC China	-	87,028,722	-	-	-	-	8,390,375	-	100	95,419,097	-	95,757,396	Nil
TSMC Nanjing	-	67,385,300	-	-	-	-	20,240,530	-	100	87,625,830	-	87,656,880	Nil
Emerging Fund	-	1,760,885	-	641,536	-	(244,376)	(256,303)	-	99.9	1,901,742	-	1,901,742	Nil
VTAF III	-	246,702	-	3,058	-	-	7,780	-	98	257,540	-	234,205	Nil
VTAF II	-	71,429	-	-	-	-	46,233	-	98	117,662	-	111,416	Nil
Subtotal		156,493,038		644,594		(244,376)	28,428,615			185,321,871		185,661,639	
Total		$ 727,947,169		$ 326,171,354		$ (244,376)	$ 40,820,945			$ 1,094,695,092		$ 1,256,214,415	

Note 1: The unit price is calculated by closing price of the Taipei Exchange or the TWSE as of December 29,2023.

Note 2: Mainly including share of profit or loss of subsidiaries and associates, share of other comprehensive income of subsidiaries and associates, cash dividends received from subsidiaries and associates, etc.

Note 3: Includes a prepayment for investment of EUR 139,930 thousand.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF RIGHT-OF-USE ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Item	Land	Buildings	Office Equipment	Total
Cost				
Balance at January 1, 2023	$ 44,197,961	$ 1,716,590	$ 51,851	$ 45,966,402
Additions	1,391,105	246,426	20,355	1,657,886
Deductions	(34,180)	(149,481)	(14,023)	(197,684)
Balance at December 31, 2023	$ 45,554,886	$ 1,813,535	$ 58,183	$ 47,426,604
Accumulated depreciation				
Balance at January 1, 2023	$ 6,076,126	$ 805,482	$ 33,367	$ 6,914,975
Additions	2,439,615	330,361	16,193	2,786,169
Deductions	-	(133,345)	(13,900)	(147,245)
Balance at December 31, 2023	$ 8,515,741	$ 1,002,498	$ 35,660	$ 9,553,899
Carrying amounts at December 31, 2023	$ 37,039,145	$ 811,037	$ 22,523	$ 37,872,705

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCOUNTS PAYABLES
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
Vendor A	$ 2,483,914
Others (Note)	45,159,579
Total	$ 47,643,493

Note: The amount of individual vendor included in others does not exceed 5% of the account balance

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF PAYABLES TO RELATED PARTIES
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
TSMC Nanjing	$ 5,064,282
TSMC China	2,312,769
Xintec	1,020,153
Others (Note)	1,722,491
Total	$ 10,119,695

Note: The amount of individual vendor in others does not exceed 5% of the account balance.

STATEMENT 9

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF PAYABLES TO CONTRACTORS AND EQUIPMENT SUPPLIERS
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
Vendor A	$ 15,937,674
Vendor B	5,751,033
Vendor C	5,334,257
Others (Note)	57,123,209
Total	$ 84,146,173

Note: The amount of individual vendor included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Item	Amount
Temporary receipts from customers	$ 114,639,514
Contract liabilities	47,760,098
Refund liability	36,144,370
Others (Note)	43,314,526
Total	$ 241,858,508

Note: The amount of each item in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF BONDS PAYABLE
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Bonds Name	Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Amount: Total Amount	Amount: Repayment Paid	Amount: Balance, End of Year	Amount: Premiums (Discounts)	Amount: Carrying Value	Unamortized Repayment	Collateral
Domestic unsecured bonds-101-4											
-C	Taipei Fubon Commercial Bank Co., Ltd.	2013.01.04	On 01.04 annually	1.49	$ 3,000,000	$ 3,000,000	$ -	$ -	$ -	Bullet repayment	Nil
Domestic unsecured bonds-102-1											
-C	Taipei Fubon Commercial Bank Co., Ltd.	2013.02.06	On 02.06 annually	1.50	3,600,000	3,600,000	-	-	-	Bullet repayment	Nil
Domestic unsecured bonds-102-2											
-B	Taipei Fubon Commercial Bank Co., Ltd.	2013.07.16	On 07.16 annually	1.70	3,500,000	3,500,000	-	-	-	Bullet repayment	Nil
Domestic unsecured bonds-102-4											
-E	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	2.05	5,400,000	5,400,000	-	-	-	Bullet repayment	Nil
-F	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	2.10	2,600,000	2,600,000	-	-	-	Bullet repayment	Nil
Domestic unsecured bonds-109-1											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.58	3,000,000	-	3,000,000	(764)	2,999,236	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.62	10,500,000	-	10,500,000	(5,075)	10,494,925	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.64	10,500,000	-	10,500,000	(6,844)	10,493,156	Bullet repayment	Nil
Domestic unsecured bonds-109-2											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.52	5,900,000	-	5,900,000	(1,570)	5,898,430	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.58	10,400,000	-	10,400,000	(5,038)	10,394,962	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.60	5,300,000	-	5,300,000	(3,447)	5,296,553	Bullet repayment	Nil
Domestic unsecured bonds-109-3											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.55	4,500,000	-	4,500,000	(1,333)	4,498,667	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.60	7,500,000	-	7,500,000	(3,832)	7,496,168	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.64	2,400,000	-	2,400,000	(1,624)	2,398,376	Bullet repayment	Nil
Domestic unsecured bonds-109-4											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.58	5,700,000	-	5,700,000	(1,374)	5,698,626	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.65	6,300,000	-	6,300,000	(3,093)	6,296,907	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.67	1,900,000	-	1,900,000	(1,277)	1,898,723	Two equal installments in last two years	Nil
Domestic unsecured bonds-109-5											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.50	4,800,000	-	4,800,000	(1,313)	4,798,687	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.58	8,000,000	-	8,000,000	(4,077)	7,995,923	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.60	2,800,000	-	2,800,000	(1,911)	2,798,089	Two equal installments in last two years	Nil
Domestic unsecured bonds-109-6											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.02	On 12.02 annually	0.40	1,600,000	-	1,600,000	(575)	1,599,425	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.02	On 12.02 annually	0.44	5,600,000	-	5,600,000	(3,342)	5,596,658	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.02	On 12.02 annually	0.48	4,800,000	-	4,800,000	(3,688)	4,796,312	Two equal installments in last two years	Nil
Domestic unsecured bonds-109-7											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.29	On 12.29 annually	0.36	1,900,000	-	1,900,000	(652)	1,899,348	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.29	On 12.29 annually	0.41	10,200,000	-	10,200,000	(5,678)	10,194,322	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.29	On 12.29 annually	0.45	6,400,000	-	6,400,000	(4,557)	6,395,443	Two equal installments in last two years	Nil
Domestic US$ unsecured bonds-109-1	Mega International Commercial Bank Co., Ltd.	2020.09.22	On 09.22 annually	2.70	30,747,000	-	30,747,000	(30,365)	30,716,635	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter)	Nil
Domestic unsecured bonds-110-1											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.03.30	On 03.30 annually	0.50	4,800,000	-	4,800,000	(2,229)	4,797,771	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.03.30	On 03.30 annually	0.55	11,400,000	-	11,400,000	(7,163)	11,392,837	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.03.30	On 03.30 annually	0.60	4,900,000	-	4,900,000	(3,685)	4,896,315	Bullet repayment	Nil
Domestic unsecured bonds-110-2											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.05.03	On 05.03 annually	0.50	5,200,000	-	5,200,000	(2,516)	5,197,484	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.05.03	On 05.03 annually	0.58	8,400,000	-	8,400,000	(5,402)	8,394,598	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.05.03	On 05.03 annually	0.65	5,600,000	-	5,600,000	(4,272)	5,595,728	Bullet repayment	Nil
Domestic unsecured bonds-110-3											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.06.25	On 06.25 annually	0.52	6,900,000	-	6,900,000	(3,545)	6,896,455	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.06.25	On 06.25 annually	0.58	7,900,000	-	7,900,000	(5,246)	7,894,754	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.06.25	On 06.25 annually	0.65	4,900,000	-	4,900,000	(3,797)	4,896,203	Bullet repayment	Nil

(Continued)

Bonds Name	Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Amount					Unamortized Repayment	Collateral
					Total Amount	Repayment Paid	Balance, End of Year	Premiums (Discounts)	Carrying Value		
Domestic unsecured bonds-110-4											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.485	$ 4,000,000	$ -	$ 4,000,000	$ (1,666)	$ 3,998,334	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.50	8,000,000	-	8,000,000	(4,299)	7,995,701	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.55	5,400,000	-	5,400,000	(3,654)	5,396,346	Bullet repayment	Nil
-D	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.62	4,200,000	-	4,200,000	(3,289)	4,196,711	Bullet repayment	Nil
Domestic US$ unsecured bonds-110-5	Mega International Commercial Bank Co., Ltd.	2021.09.23	On 09.23 annually	3.10	30,747,000	-	30,747,000	(30,163)	30,716,837	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter)	Nil
Domestic unsecured bonds-110-6											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.535	3,200,000	-	3,200,000	(1,668)	3,198,332	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.54	6,900,000	-	6,900,000	(3,963)	6,896,037	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.60	4,600,000	-	4,600,000	(3,259)	4,596,741	Bullet repayment	Nil
-D	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.62	1,600,000	-	1,600,000	(1,292)	1,598,708	Bullet repayment	Nil
Domestic unsecured bonds-110-7											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.12.09	On 12.09 annually	0.65	7,700,000	-	7,700,000	(4,709)	7,695,291	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.12.09	On 12.09 annually	0.675	3,500,000	-	3,500,000	(2,268)	3,497,732	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.12.09	On 12.09 annually	0.72	5,500,000	-	5,500,000	(4,056)	5,495,944	Bullet repayment	Nil
Domestic unsecured bonds-111-1											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2022.01.12	On 01.12 annually	0.63	2,100,000	-	2,100,000	(1,570)	2,098,430	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2022.01.12	On 01.12 annually	0.72	3,300,000	-	3,300,000	(2,928)	3,297,072	Bullet repayment	Nil
Domestic unsecured bonds-111-2											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2022.03.29	On 03.29 annually	0.84	3,000,000	-	3,000,000	(1,909)	2,998,091	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2022.03.29	On 03.29 annually	0.85	9,600,000	-	9,600,000	(6,505)	9,593,495	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2022.03.29	On 03.29 annually	0.90	1,600,000	-	1,600,000	(1,262)	1,598,738	Bullet repayment	Nil
Domestic unsecured bonds-111-3	Taipei Fubon Commercial Bank Co., Ltd.	2022.05.20	On 05.20 annually	1.50	6,100,000	-	6,100,000	(4,627)	6,095,373	Bullet repayment	Nil
Domestic unsecured bonds-111-4											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2022.07.27	On 07.27 annually	1.60	1,200,000	-	1,200,000	(811)	1,199,189	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2022.07.27	On 07.27 annually	1.70	10,100,000	-	10,100,000	(7,574)	10,092,426	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2022.07.27	On 07.27 annually	1.75	1,200,000	-	1,200,000	(1,008)	1,198,992	Bullet repayment	Nil
-D	Taipei Fubon Commercial Bank Co., Ltd.	2022.07.27	On 07.27 annually	1.95	1,400,000	-	1,400,000	(1,267)	1,398,733	Bullet repayment	Nil
Domestic unsecured bonds-111-5											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2022.08.25	On 08.25 annually	1.65	2,000,000	-	2,000,000	(1,504)	1,998,496	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2022.08.25	On 08.25 annually	1.65	8,900,000	-	8,900,000	(6,808)	8,893,192	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2022.08.25	On 08.25 annually	1.65	2,200,000	-	2,200,000	(1,873)	2,198,127	Bullet repayment	Nil
-D	Taipei Fubon Commercial Bank Co., Ltd.	2022.08.25	On 08.25 annually	1.82	2,500,000	-	2,500,000	(2,286)	2,497,714	Bullet repayment	Nil
Domestic unsecured bonds-111-6											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2022.10.20	On 10.20 annually	1.75	5,700,000	-	5,700,000	(4,843)	5,695,157	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2022.10.20	On 10.20 annually	1.80	1,000,000	-	1,000,000	(934)	999,066	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2022.10.20	On 10.20 annually	2.00	3,500,000	-	3,500,000	(3,472)	3,496,528	Bullet repayment	Nil
Domestic unsecured bonds-112-1											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2023.03.28	On 03.28 annually	1.54	12,200,000	-	12,200,000	(11,076)	12,188,924	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2023.03.28	On 03.28 annually	1.60	2,300,000	-	2,300,000	(2,191)	2,297,809	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2023.03.28	On 03.28 annually	1.78	4,800,000	-	4,800,000	(4,743)	4,795,257	Bullet repayment	Nil
Domestic unsecured bonds-112-2											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2023.05.03	On 05.03 annually	1.60	13,100,000	-	13,100,000	(11,886)	13,088,114	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2023.05.03	On 05.03 annually	1.65	2,300,000	-	2,300,000	(2,174)	2,297,826	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2023.05.03	On 05.03 annually	1.82	5,300,000	-	5,300,000	(5,169)	5,294,831	Bullet repayment	Nil
Domestic unsecured bonds-112-3											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2023.06.01	On 06.01 annually	1.60	11,400,000	-	11,400,000	(10,496)	11,389,504	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2023.06.01	On 06.01 annually	1.65	2,600,000	-	2,600,000	(2,480)	2,597,520	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2023.06.01	On 06.01 annually	1.80	6,000,000	-	6,000,000	(5,881)	5,994,119	Bullet repayment	Nil
Domestic unsecured bonds-112-4											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2023.08.16	On 08.16 annually	1.60	7,300,000	-	7,300,000	(7,021)	7,292,979	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2023.08.16	On 08.16 annually	1.65	700,000	-	700,000	(692)	699,308	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2023.08.16	On 08.16 annually	1.76	7,900,000	-	7,900,000	(7,898)	7,892,102	Bullet repayment	Nil
Domestic unsecured bonds-112-5											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2023.10.16	On 10.16 annually	1.62	4,300,000	-	4,300,000	(4,327)	4,295,673	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2023.10.16	On 10.16 annually	1.76	5,500,000	-	5,500,000	(5,650)	5,494,350	Bullet repayment	Nil
TOTAL					$ 465,294,000	$ 18,100,000	$ 447,194,000	$ (326,435)	446,867,565		
Less: Current portion									(6,997,710)		
									$ 439,869,855		

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF LEASE LIABILITIES
DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Item	Description	Lease Term	Discount Rate (%)	Balance, End of Year
Land	Mainly for the use of plants and offices	1 to 22 years	0.39-2.30	$ 28,270,257
Buildings	Mainly for the use of offices	1 to 12 years	0.57-1.76	786,879
Office equipment	For operation use	3 to 5 years	0.28-1.73	24,431
				29,081,567
Less: Current portion				(2,122,132)
Noncurrent portion				$ 26,959,435

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NET REVENUE
FOR THE YEAR ENDED DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Item	Shipments (Piece) (Note)	Amount
Wafer	12,002,177	$ 1,881,677,167
Other		271,607,928
Net revenue		$ 2,153,285,095

Note: 12-inch equivalent wafers.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF COST OF REVENUE
FOR THE YEAR ENDED DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Item	Amount
Raw materials used	
Balance, beginning of year	$ 19,750,618
Raw material purchased	77,523,097
Raw materials, end of year	(37,279,545)
Transferred to manufacturing or operating expenses	(12,675,412)
Others	(298,749)
Subtotal	47,020,009
Direct labor	22,193,265
Manufacturing expenses	940,590,841
Manufacturing cost	1,009,804,115
Work in process, beginning of year	120,893,772
Work in process, end of year	(153,362,168)
Transferred to manufacturing or operating expenses	(81,911,749)
Cost of finished goods	895,423,970
Finished goods, beginning of year	52,318,299
Finished goods purchased	102,104,249
Finished goods, end of year	(33,839,662)
Transferred to manufacturing or operating expenses	(18,172,008)
Scrapped	(624,073)
Subtotal	997,210,775
Others	25,449,389
Total	$ 1,022,660,164

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF OPERATING EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 2023
(In Thousands of New Taiwan Dollars)

Item	Research and Development Expenses	General and Administrative Expenses	Selling Expenses
Payroll and related expense	$ 57,108,147	$ 17,846,942	$ 3,492,038
Consumables	64,582,650	876,655	27
Depreciation expense	26,887,243	2,037,370	27,318
Repair and maintenance expense	8,650,513	2,725,617	5,899
Management fees of the Science Park Administration	-	3,875,748	-
Patents	-	3,133,290	-
Commission	-	-	1,285,238
Others (Note)	21,496,545	9,394,415	307,876
Total	$ 178,725,098	$ 39,890,037	$ 5,118,396

Note: The amount of each item in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF LABOR, DEPRECIATION AND AMORTIZATION BY FUNCTION
FOR THE YEARS ENDED DECEMBER 31, 2023 AND 2022
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

	Year Ended December 31, 2023				Year Ended December 31, 2022			
	Classified as Cost of Revenue	Classified as Operating Expenses	Classified as Other Operating Income and Expenses	Total	Classified as Cost of Revenue	Classified as Operating Expenses	Classified as Other Operating Income and Expenses	Total
Labor cost								
Salary and bonus	$ 110,396,275	$ 71,163,228	$ -	$ 181,559,503	$ 118,078,587	$ 78,041,998	$ -	$ 196,120,585
Labor and health insurance	5,713,655	3,410,394	-	9,124,049	5,422,819	3,306,536	-	8,729,355
Pension	2,874,410	1,561,049	-	4,435,459	2,507,996	1,364,188	-	3,872,184
Board compensation	-	635,477	-	635,477	-	743,990	-	743,990
Others	3,159,122	1,676,979	-	4,836,101	2,705,149	1,411,448	-	4,116,597
	$ 122,143,462	$ 78,447,127	$ -	$ 200,590,589	$ 128,714,551	$ 84,868,160	$ -	$ 213,582,711
Depreciation	$ 471,343,567	$ 28,951,931	$ 5,273	$ 500,300,771	$ 385,647,215	$ 27,939,678	$ 8,189	$ 413,595,082
Amortization	$ 6,515,540	$ 2,682,436	$ -	$ 9,197,976	$ 6,069,729	$ 2,637,232	$ -	$ 8,706,961

Note 1: For the year of 2023 and 2022, the Company had average 66,336 and 61,777 employees, respectively, which included 9 non-employee directors for both years.

Note 2: Average labor cost for the years ended December 31, 2023 and 2022 were NT$3,015 thousand and 3,446 thousand, respectively.

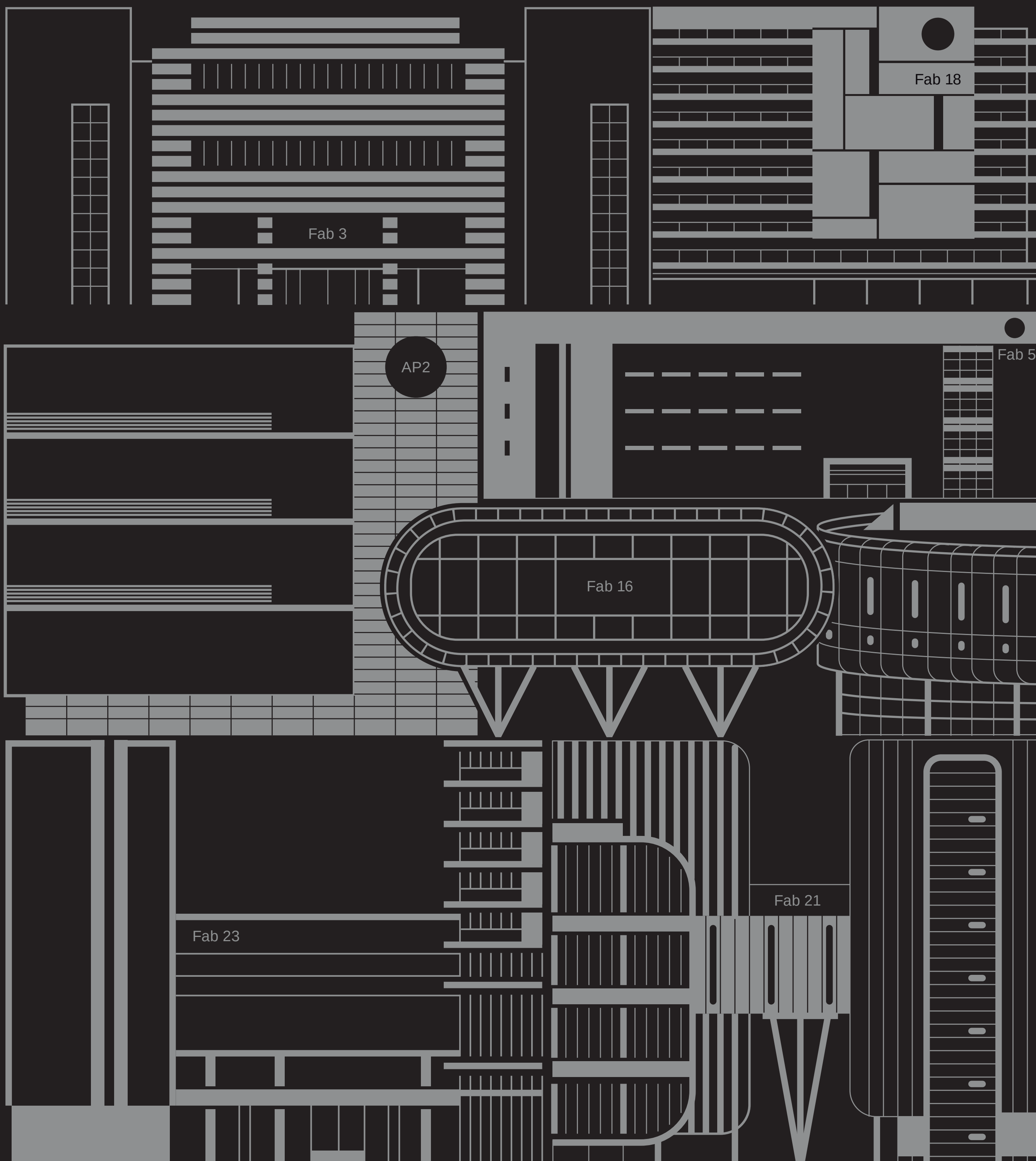
Note 3: Average salary and bonus for the years ended December 31, 2023 and 2022 were NT$2,737 thousand and 3,175 thousand, respectively. The average salary and bonus decreased by 13.80% year over year.

Note 4: The Company did not have supervisors for the years ended December 31, 2023 and 2022. Therefore, there was no compensation to the supervisor.

Note 5: The Company's compensation policies: The Company's employees are entitled to a comprehensive compensation and benefits program above the industry average. The compensation program includes a monthly salary, business performance bonuses based on quarterly business results, a profit sharing bonus based on annual profits, and a subsidy based on Employee Stock Purchase Plan. The Company determines the amount of the business performance bonus and profit sharing based on operating results and industry practice in the R.O.C.. The amount and distribution of the bonus and profit sharing are recommended by the Compensation and People Development Committee to the Board of Directors for approval. Individual rewards are based on each employee's job responsibility, contribution and performance.

Note 6: The total compensation paid to the executive officers is decided based on their job responsibility, contribution, company performance and projected future risks the Company will face. It is reviewed by the Compensation and People Development Committee then submitted to the Board of Directors for approval.

Note 7: According to the Company's Articles of Incorporation, the Board of Directors is authorized to determine the salary for the Chairman, Vice Chairman and Directors, taking into account the extent and value of the services provided for the management of the Company and the standards of the industry within the R.O.C. and overseas. The Articles of Incorporation also provide that the compensation to directors shall be no more than 0.3% of annual profits and directors who also serve as executive officers of the Company are not entitled to receive compensation to directors. The distribution of compensation to directors shall be made in accordance with the Company's "Rules for Distribution of Compensation to Directors" based on the following principles: (1) directors who also serve as executive officers of the Company are not entitled to receive compensation; (2) the compensation for independent directors may be higher than the other directors, as all independent directors also serve as members of the Audit and Risk Committee and the Compensation and People Development Committee and thus participate in the discussions as well as resolutions of related committee meetings in accordance with the charter of each committee; and (3) the compensation for overseas independent directors may be higher than domestic independent directors.



Taiwan Semiconductor Manufacturing Company, Ltd.

Mark Liu,
Chairman

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UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-Q

(Mark One)

☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 30, 2024

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15 (d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to

Commission File Number **001-07882**

ADVANCED MICRO DEVICES, INC.

(Exact name of registrant as specified in its charter)

Delaware	**94-1692300**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

2485 Augustine Drive
Santa Clara, California 95054
(Address of principal executive offices)(Zip Code)

(408) 749-4000
Registrant's telephone number, including area code

N/A
(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.01 par value per share	**AMD**	**The Nasdaq Global Select Market**

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 (the Exchange Act) during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☑	Accelerated filer	☐	Non-accelerated filer	☐
Smaller reporting company	☐	Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined by Rule 12b-2 of the Exchange Act). Yes ☐ No ☑

Indicate the number of shares outstanding of the registrant's common stock, $0.01 par value per share, as of April 25, 2024: 1,616,313,871

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PART I. FINANCIAL INFORMATION

ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Advanced Micro Devices, Inc.
Condensed Consolidated Statements of Operations
(Unaudited)

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions, except per share amounts)	
Net revenue	$ 5,473	$ 5,353
Cost of sales	2,683	2,689
Amortization of acquisition-related intangibles	230	305
Total cost of sales	2,913	2,994
Gross profit	2,560	2,359
Research and development	1,525	1,411
Marketing, general and administrative	620	585
Amortization of acquisition-related intangibles	392	518
Licensing gain	(13)	(10)
Operating income (loss)	36	(145)
Interest expense	(25)	(25)
Other income (expense), net	53	43
Income (loss) before income taxes and equity income	64	(127)
Income tax provision (benefit)	(52)	13
Equity income in investee	7	1
Net income (loss)	$ 123	$ (139)
Earnings (loss) per share		
Basic	$ 0.08	$ (0.09)
Diluted	$ 0.07	$ (0.09)
Shares used in per share calculation		
Basic	1,617	1,611
Diluted	1,639	1,611

See accompanying notes.

Advanced Micro Devices, Inc.
Condensed Consolidated Statements of Comprehensive Income (Loss)
(Unaudited)

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Net income (loss)	$ 123	$ (139)
Other comprehensive income (loss), net of tax:		
Net change in unrealized gains (losses) on cash flow hedges	(22)	20
Total comprehensive income (loss)	$ 101	$ (119)

See accompanying notes.

Advanced Micro Devices, Inc.
Condensed Consolidated Balance Sheets
(Unaudited)

	March 30, 2024	December 30, 2023
	(In millions, except par value amounts)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 4,190	$ 3,933
Short-term investments	1,845	1,840
Accounts receivable, net	5,038	5,376
Inventories	4,652	4,351
Receivables from related parties	31	9
Prepaid expenses and other current assets	1,328	1,259
Total current assets	17,084	16,768
Property and equipment, net	1,624	1,589
Operating lease right-of-use assets	632	633
Goodwill	24,262	24,262
Acquisition-related intangibles, net	20,741	21,363
Investment: equity method	106	99
Deferred tax assets	433	366
Other non-current assets	3,013	2,805
Total Assets	$ 67,895	$ 67,885
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,418	$ 2,055
Payables to related parties	438	363
Accrued liabilities	3,444	3,082
Current portion of long-term debt, net	750	751
Other current liabilities	424	438
Total current liabilities	6,474	6,689
Long-term debt, net of current portion	1,718	1,717
Long-term operating lease liabilities	530	535
Deferred tax liabilities	1,199	1,202
Other long-term liabilities	1,776	1,850
Commitments and contingencies (See Note 12)		
Stockholders' equity:		
Capital stock:		
Common stock, par value $0.01; shares authorized: 2,250; shares issued: 1,666 and 1,663; shares outstanding: 1,618 and 1,616	17	17
Additional paid-in capital	60,053	59,676
Treasury stock, at cost (shares held: 48 and 47)	(4,690)	(4,514)
Retained earnings	846	723
Accumulated other comprehensive loss	(28)	(10)
Total stockholders' equity	56,198	55,892
Total liabilities and stockholders' equity	$ 67,895	$ 67,885

See accompanying notes.

Advanced Micro Devices, Inc.
Condensed Consolidated Statements of Cash Flows
(Unaudited)

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Cash flows from operating activities:		
Net income (loss)	$ 123	$ (139)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation and amortization	784	982
Stock-based compensation	371	309
Amortization of operating lease right-of-use assets	26	24
Deferred income taxes	(66)	(308)
Inventory loss at contract manufacturer	65	—
Other	(22)	5
Changes in operating assets and liabilities		
Accounts receivable, net	338	86
Inventories	(368)	(464)
Prepaid expenses and other assets	(322)	(191)
Receivables from and payables to related parties, net	53	(109)
Accounts payable	(636)	73
Accrued and other liabilities	175	218
Net cash provided by operating activities	521	486
Cash flows from investing activities:		
Purchases of property and equipment	(142)	(158)
Purchases of short-term investments	(433)	(1,703)
Proceeds from maturity of short-term investments	441	473
Proceeds from sale of short-term investments	2	145
Other	(3)	6
Net cash used in investing activities	(135)	(1,237)
Cash flows from financing activities:		
Proceeds from sales of common stock through employee equity plans	5	3
Repurchases of common stock	(4)	(241)
Common stock repurchases for tax withholding on employee equity plans	(129)	(21)
Other	(1)	—
Net cash used in financing activities	(129)	(259)
Net increase (decrease) in cash and cash equivalents	257	(1,010)
Cash and cash equivalents at beginning of period	3,933	4,835
Cash and cash equivalents at end of period	$ 4,190	$ 3,825
Supplemental cash flow information:		
Cash paid for taxes, net of refunds	$ 87	$ 21
Non-cash investing and financing activities:		
Purchases of property and equipment, accrued but not paid	$ 102	$ 69
Repurchases for tax withholding on employee equity plans, not yet paid	$ 42	$ —
Non-cash activities for leases:		
Operating lease right-of-use assets acquired by assuming related liabilities	$ 25	$ —

See accompanying notes.

Advanced Micro Devices, Inc.
Condensed Consolidated Statements of Stockholders' Equity
(Unaudited)

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Capital stock:		
Common stock, par value		
Balance, beginning of period	$ 17	$ 16
Balance, end of period	$ 17	$ 16
Additional paid-in capital		
Balance, beginning of period	$ 59,676	$ 58,005
Common stock issued under employee equity plans	6	4
Stock-based compensation	371	309
Issuance of common stock warrants	—	13
Balance, end of period	$ 60,053	$ 58,331
Treasury stock		
Balance, beginning of period	$ (4,514)	$ (3,099)
Repurchases of common stock	(4)	(242)
Common stock repurchases for tax withholding on employee equity plans	(172)	(21)
Balance, end of period	$ (4,690)	$ (3,362)
Retained earnings (Accumulated deficit):		
Balance, beginning of period	$ 723	$ (131)
Net income (loss)	123	(139)
Balance, end of period	$ 846	$ (270)
Accumulated other comprehensive loss:		
Balance, beginning of period	$ (10)	$ (41)
Other comprehensive income (loss)	(18)	20
Balance, end of period	$ (28)	$ (21)
Total stockholders' equity	$ 56,198	$ 54,694

See accompanying notes.

Notes to Condensed Consolidated Financial Statements
(Unaudited)

NOTE 1 – The Company

Advanced Micro Devices, Inc. is a global semiconductor company. References herein to AMD or the Company mean Advanced Micro Devices, Inc. and its consolidated subsidiaries. AMD's products include x86 microprocessors (CPUs) and graphics processing units (GPUs), as standalone devices or as incorporated into accelerated processing units (APUs), chipsets, data center and professional GPUs, embedded processors, semi-custom System-on-Chip (SoC) products, microprocessor and SoC development services and technology, data processing units (DPUs), Field Programmable Gate Arrays (FPGAs), System on Modules (SOMs), Smart Network Interface Cards (SmartNICs), Artificial Intelligence (AI) Accelerators and Adaptive SoC products. From time to time, the Company may also sell or license portions of its intellectual property (IP) portfolio.

NOTE 2 – Basis of Presentation and Significant Accounting Policies

Basis of Presentation. The accompanying unaudited condensed consolidated financial statements of AMD have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) for interim financial information and the instructions to Form 10-Q and Article 10 of Regulation S-X. The results of operations for the three months ended March 30, 2024 shown in this report are not necessarily indicative of results to be expected for the full year ending December 28, 2024 or any other future period. In the opinion of the Company's management, the information contained herein reflects all adjustments necessary for a fair presentation of the Company's results of operations, financial position, cash flows and stockholders' equity. All such adjustments are of a normal, recurring nature. The unaudited condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements in the Company's Annual Report on Form 10-K for the fiscal year ended December 30, 2023. Certain immaterial prior period amounts have been reclassified to conform to current period presentation.

The Company uses a 52- or 53-week fiscal year ending on the last Saturday in December. The three months ended March 30, 2024 and April 1, 2023 each consisted of 13 weeks.

Use of Estimates. The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of commitments and contingencies at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods. Actual results are likely to differ from those estimates, and such differences may be material to the financial statements. Areas where management uses judgment include, but are not limited to, revenue allowances, inventory valuation, valuation of goodwill, long-lived and intangible assets, and income taxes.

Significant Accounting Policies. There have been no material changes to the Company's significant accounting policies in Note 2 - Basis of Presentation and Significant Accounting Policies, of the Notes to Consolidated Financial Statements included in the Company's Annual Report on Form 10-K for the fiscal year ended December 30, 2023.

NOTE 3 – Supplemental Financial Statement Information

Accounts Receivable, net

As of March 30, 2024 and December 30, 2023, Accounts receivable, net included unbilled accounts receivable of $1.6 billion and $1.1 billion, respectively. Unbilled accounts receivable primarily represents work completed on development services and on custom products for which revenue has been recognized but not yet invoiced. Unbilled accounts receivable that are included in Accounts receivable, net are expected to be billed and collected within 12 months.

Inventories	March 30, 2024	December 30, 2023
	(In millions)	
Raw materials	$ 292	$ 279
Work in process	3,376	3,260
Finished goods	984	812
Total inventories	$ 4,652	$ 4,351

Property and Equipment, net	March 30, 2024	December 30, 2023
	(In millions)	
Land, building and leasehold improvements	$ 829	$ 821
Equipment	2,456	2,346
Construction in progress	223	209
Property and equipment, gross	3,508	3,376
Accumulated depreciation	(1,884)	(1,787)
Total property and equipment, net	$ 1,624	$ 1,589

Accrued Liabilities	March 30, 2024	December 30, 2023
	(In millions)	
Accrued marketing programs	$ 761	$ 827
Accrued compensation and benefits	826	884
Customer program liabilities	936	544
Other accrued liabilities	921	827
Total accrued liabilities	$ 3,444	$ 3,082

Revenue

Revenue allocated to remaining performance obligations that are unsatisfied (or partially unsatisfied) include amounts received from customers and amounts that will be invoiced and recognized as revenue in future periods for development services, IP licensing and product revenue. As of March 30, 2024, the aggregate transaction price allocated to remaining performance obligations under contracts with an original expected duration of more than one year was $113 million, of which $67 million is expected to be recognized in the next 12 months. The revenue allocated to remaining performance obligations does not include amounts which have an original expected duration of one year or less.

Revenue recognized over time associated with custom products and development services accounted for 16% and 29% of the Company’s revenue for the three months ended March 30, 2024 and April 1, 2023, respectively.

NOTE 4 – Segment Reporting

Management, including the Chief Operating Decision Maker (CODM), who is the Company’s Chief Executive Officer, reviews and assesses operating performance using segment net revenue and operating income (loss). These performance measures include the allocation of expenses to the reportable segments based on management’s judgment.

The Company's four reportable segments are:

- the Data Center segment, which primarily includes server microprocessors (CPUs), graphics processing units (GPUs), accelerated processing units (APUs), data processing units (DPUs), Field Programmable Gate Arrays (FPGAs), Smart Network Interface Cards (SmartNICs), Artificial Intelligence (AI) accelerators and Adaptive System-on-Chip (SoC) products for data centers;
- the Client segment, which primarily includes CPUs, APUs, and chipsets for desktop, notebook and handheld personal computers;
- the Gaming segment, which primarily includes discrete GPUs, and semi-custom SoC products and development services; and
- the Embedded segment, which primarily includes embedded CPUs, GPUs, APUs, FPGAs, System on Modules (SOMs), and Adaptive SoC products.

From time to time, the Company may also sell or license portions of its IP portfolio.

In addition to these reportable segments, the Company has an All Other category, which is not a reportable segment. This category primarily includes certain expenses and credits that are not allocated to any of the reportable segments because the CODM does not consider these expenses and credits in evaluating the performance of the reportable segments. This category primarily includes amortization of acquisition-related intangibles, employee stock-based compensation expense, inventory loss at contract manufacturer, acquisition-related and other costs, and licensing gain. Acquisition-related and other costs primarily include transaction costs, purchase price adjustments for inventory, certain compensation charges, contract termination and workforce rebalancing charges.

The following table provides a summary of net revenue and operating income (loss) by segment:

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Net revenue:		
Data Center	$ 2,337	$ 1,295
Client	1,368	739
Gaming	922	1,757
Embedded	846	1,562
Total net revenue	$ 5,473	$ 5,353
Operating income (loss):		
Data Center	$ 541	$ 148
Client	86	(172)
Gaming	151	314
Embedded	342	798
All Other[(1)]	(1,084)	(1,233)
Total operating income (loss)	$ 36	$ (145)

(1) For the three months ended March 30, 2024, all other operating losses primarily included $622 million of amortization of acquisition-related intangibles, $371 million of stock-based compensation expense, $65 million of inventory loss at contract manufacturer and $39 million of acquisition-related and other costs.

For the three months ended April 1, 2023, all other operating losses primarily included $823 million of amortization of acquisition-related intangibles, $309 million of stock-based compensation expense and $111 million of acquisition-related and other costs.

NOTE 5 – Acquisition-related Intangible Assets

Acquisition-related intangibles were as follows:

	March 30, 2024			December 30, 2023		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
		(In millions)			(In millions)	
Developed technology	$ 13,390	$ (1,815)	$ 11,575	$ 13,390	$ (1,583)	$ 11,807
Customer relationships	12,324	(4,127)	8,197	12,324	(3,755)	8,569
Customer backlog	809	(809)	—	809	(809)	—
Corporate trade name	65	(65)	—	65	(65)	—
Product trademarks	914	(165)	749	914	(147)	767
Identified intangible assets subject to amortization	27,502	(6,981)	20,521	27,502	(6,359)	21,143
In-process research and development (IPR&D) not subject to amortization	220	—	220	220	—	220
Total acquisition-related intangible assets	$ 27,722	$ (6,981)	$ 20,741	$ 27,722	$ (6,359)	$ 21,363

Developed technology and customer relationships were acquired primarily from the Xilinx acquisition on February 14, 2022. Acquisition-related intangible amortization expense was $622 million and $823 million for the three months ended March 30, 2024 and April 1, 2023, respectively.

Based on the carrying value of acquisition-related intangibles recorded as of March 30, 2024, and assuming no subsequent impairment of the underlying assets, the estimated annual amortization expense for acquisition-related intangibles is expected to be as follows:

Fiscal Year	(In millions)
Remainder of 2024	$ 1,749
2025	2,145
2026	2,034
2027	1,922
2028	1,846
2029 and thereafter	10,825
Total	$ 20,521

NOTE 6 – Related Parties — Equity Joint Ventures

ATMP Joint Ventures

The Company holds a 15% equity interest in two joint ventures (collectively, the ATMP JV) with affiliates of Tongfu Microelectronics Co., Ltd, a Chinese joint stock company. The Company has no obligation to fund the ATMP JV. The Company accounts for its equity interests in the ATMP JV under the equity method of accounting due to its significant influence over the ATMP JV.

The ATMP JV provides assembly, testing, marking and packaging (ATMP) services to the Company. The Company assists the ATMP JV in its management of certain raw material inventory. The purchases from and resales to the ATMP JV of inventory under the Company's inventory management program are reported within purchases and resales with the ATMP JV and do not impact the Company's condensed consolidated statements of operations.

The Company's purchases from the ATMP JV during the three months ended March 30, 2024 and April 1, 2023 amounted to $450 million and $367 million, respectively. As of March 30, 2024 and December 30, 2023, the amounts payable to the ATMP JV were $438 million and $363 million, respectively, and are included in Payables to related parties on the Company's condensed consolidated balance sheets. The Company's resales to the ATMP JV during the three months ended March 30, 2024 and April 1, 2023 amounted to $40 million and $1 million, respectively. As of March 30, 2024 and December 30, 2023, the Company had receivables from the ATMP JV of $31 million and $9 million, respectively, included in Receivables from related parties on the Company's condensed consolidated balance sheets.

During the three months ended March 30, 2024 and April 1, 2023, the Company recorded a gain of $7 million and $1 million, respectively, in Equity income in investee on its condensed consolidated statements of operations, respectively. As of March 30, 2024 and December 30, 2023, the carrying value of the Company's investment in the ATMP JV was $106 million and $99 million, respectively.

THATIC Joint Ventures

The Company holds equity interests in two joint ventures (collectively, the THATIC JV) with Higon Information Technology Co., Ltd. (THATIC), a third-party Chinese entity. As of both March 30, 2024 and December 30, 2023, the carrying value of the investment was zero. The Company licensed certain of its intellectual IP (Licensed IP) to the THATIC JV and receives royalty based on sales of the THATIC JV's products, which is recorded within operating income. During the three months ended March 30, 2024 and April 1, 2023, the Company recognized $13 million and $10 million of licensing gain from royalty income associated with Licensed IP, respectively. As of both March 30, 2024 and December 30, 2023, the Company had no receivables from the THATIC JV. In June 2019, the Bureau of Industry and Security of the United States Department of Commerce added certain Chinese entities to the Entity List, including THATIC and the THATIC JV. The Company is complying with U.S. law pertaining to the Entity List designation.

NOTE 7 – Debt and Revolving Credit Facility

Debt

The Company's total debt as of March 30, 2024 and December 30, 2023 consisted of the following:

	March 30, 2024	December 30, 2023
	(In millions)	
2.95% Senior Notes Due 2024 (2.95% Notes)	$ 750	$ 750
2.375% Senior Notes Due 2030 (2.375% Notes)	750	750
3.924% Senior Notes Due 2032 (3.924% Notes)	500	500
4.393% Senior Notes Due 2052 (4.393% Notes)	500	500
Total debt (principal amount)	2,500	2,500
Unamortized debt premium, discount and issuance costs, net	(32)	(32)
Total debt (net)	2,468	2,468
Less: current portion of long-term debt and related unamortized debt premium and issuance costs	(750)	(751)
Total long-term debt	$ 1,718	$ 1,717

2.95% Senior Notes Due 2024 and 2.375% Senior Notes Due 2030

The 2.95% Notes and 2.375% Notes are general unsecured senior obligations of the Company with semi-annual fixed interest payments due on June 1 and December 1.

3.924% Senior Notes Due 2032 and 4.393% Senior Notes Due 2052

The 3.924% Notes and 4.393% Notes are general unsecured senior obligations of the Company, semi-annual fixed interest payments due on June 1 and December 1. The 3.924% and 4.393% Notes are governed by the terms of an indenture dated June 9, 2022 between the Company and US Bank Trust Company, National Association as trustee.

The Company may redeem some or all of the 3.924% Notes and 4.393% Notes prior to March 1, 2032 and December 1, 2051, respectively, at a price equal to the greater of the present value of the principal amount and future interest through the maturity of the 3.924% Notes or 4.393% Notes or 100% of the principal amount plus accrued and unpaid interest. Holders have the right to require the Company to repurchase all or a portion of the 3.924% Notes or 4.393% Notes in the event that the Company undergoes a change of control as defined in the indenture, at a repurchase price of 101% of the principal amount plus accrued and unpaid interest. Additionally, an event of default may result in the acceleration of the maturity of the 3.924% Notes and 4.393% Notes.

Future Debt Payment Obligations

As of March 30, 2024, the Company's future principal debt payment obligations were as follows:

Fiscal Year	(In millions)
Remainder of 2024	$ 750
2025-2028	—
2029 and thereafter	1,750
Total	$ 2,500

Revolving Credit Facility

The Company has $3.0 billion available under a revolving credit agreement that expires on April 29, 2027 (Revolving Credit Agreement). As of March 30, 2024 and December 30, 2023, the Company had no outstanding borrowings under the Revolving Credit Agreement. Revolving loans under the Revolving Credit Agreement can be either Secure Overnight Financing Rate (SOFR) Loans or Base Rate Loans (each as defined in the Revolving Credit Agreement) at the Company's option. Each SOFR Loan will bear interest at a rate per annum equal to the applicable SOFR plus a margin between 0.625% and 1.250%. Each Base Rate Loan will bear interest equal to the Base Rate plus a margin between 0.000% and 0.250%. The Revolving Credit Agreement also contains a sustainability-linked pricing component which provides for interest rate and facility fee reductions or increases based on the Company meeting or missing targets related to environmental sustainability, specifically greenhouse gas emissions. The Revolving Credit Agreement contains customary representations and warranties, affirmative and negative covenants, and events of default applicable to the Company and its subsidiaries. As of March 30, 2024, the Company was in compliance with these covenants.

Commercial Paper

On November 3, 2022, the Company established a commercial paper program, under which the Company may issue unsecured commercial paper notes up to a maximum principal amount outstanding at any time of $3.0 billion with a maturity of up to 397 days from the date of issue. The commercial paper will be sold at a discount from par or, alternatively, will be sold at par and bear interest at rates that will vary based on market conditions at the time of issuance. During the three months ended March 30, 2024 and April 1, 2023, the Company did not issue any commercial paper under the program and as of March 30, 2024 and December 30, 2023, the Company had no commercial paper outstanding.

NOTE 8 – Financial Instruments

Fair Value Measurements

The Company's financial instruments are measured and recorded at fair value on a recurring basis, except for non-marketable equity investments in privately-held companies. These equity investments are generally accounted for under the measurement alternative, defined as cost, less impairments, adjusted for subsequent observable price changes and are periodically assessed for impairment when events or circumstances indicate that a decline in value may have occurred.

Financial Instruments Recorded at Fair Value on a Recurring Basis

(In millions)	March 30, 2024 Level 1	March 30, 2024 Level 2	March 30, 2024 Total	December 30, 2023 Level 1	December 30, 2023 Level 2	December 30, 2023 Total
Cash equivalents						
Money market funds	$ 1,051	$ —	$ 1,051	$ 969	$ —	$ 969
Corporate debt securities	—	1,472	1,472	—	753	753
U.S. government and agency securities	573	—	573	1,252	—	1,252
Non-U.S. government and agency securities	—	70	70	—	135	135
Time deposits and certificates of deposits	—	166	166	—	205	205
Short-term investments						
Corporate debt securities	—	526	526	—	506	506
Time deposits and certificates of deposits	—	10	10	—	9	9
Asset-backed and mortgage-backed securities	—	33	33	—	34	34
U.S. government and agency securities	1,158	41	1,199	1,209	28	1,237
Non-U.S. government and agency securities	—	77	77	—	54	54
Other non-current assets						
Deferred compensation plan investments	147	—	147	133	—	133
Total assets measured at fair value	$ 2,929	$ 2,395	$ 5,324	$ 3,563	$ 1,724	$ 5,287

Deferred compensation plan investments are primarily mutual fund investments held in a Rabbi trust established to maintain the Company's executive deferred compensation plan.

The following is a summary of cash equivalents and short-term investments:

	March 30, 2024				December 30, 2023			
	Cost/ Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value	Cost/ Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
	(in millions)				(in millions)			
Asset-backed and mortgage-backed securities	$ 35	$ —	$ (2)	$ 33	$ 35	$ —	$ (2)	$ 33
Corporate debt securities	1,998	—	—	1,998	1,259	—	—	1,259
Money market funds	1,051	—	—	1,051	969	—	—	969
Time deposits and certificates of deposits	176	—	—	176	214	—	—	214
U.S. government and agency securities	1,772	—	—	1,772	2,487	3	—	2,490
Non-U.S. government and agency securities	147	—	—	147	189	—	—	189
	$ 5,179	$ —	$ (2)	$ 5,177	$ 5,153	$ 3	$ (2)	$ 5,154

As of March 30, 2024 and December 30, 2023, the Company did not have material available-for-sale debt securities which had been in a continuous unrealized loss position of more than twelve months.

The contractual maturities of cash equivalents and investments classified as available-for-sale are as follows:

	March 30, 2024		December 30, 2023	
	Amortized Cost	Fair Value	Amortized Cost	Fair Value
	(In millions)		(In millions)	
Due within 1 year	$ 3,638	$ 3,637	$ 3,792	$ 3,792
Due in 1 year through 5 years	459	459	361	364
Due in 5 years and later	31	30	32	30
	$ 4,128	$ 4,126	$ 4,185	$ 4,186

Financial Instruments Not Recorded at Fair Value

The Company carries its financial instruments at fair value except for its debt. The carrying amounts and estimated fair values of the Company's debt are as follows:

	March 30, 2024		December 30, 2023	
	Carrying Amount	Estimated Fair Value	Carrying Amount	Estimated Fair Value
	(In millions)		(In millions)	
Current portion of long-term debt, net	$ 750	$ 747	$ 751	$ 741
Long-term debt, net of current portion	$ 1,718	$ 1,570	$ 1,717	$ 1,630

The estimated fair value of the Company's long-term debt is based on Level 2 inputs of quoted prices for the Company's debt and comparable instruments in inactive markets.

The fair value of the Company's accounts receivable, accounts payable and other short-term obligations approximate their carrying value based on existing terms.

Financial Instruments Measured at Fair Value on a Non-Recurring Basis

The Company's investments in non-marketable securities in privately-held companies are recorded using a measurement alternative that adjusts the securities to fair value when the Company recognizes an observable price adjustment or an impairment. As of March 30, 2024 and December 30, 2023, the Company had non-marketable securities in privately-held companies of $156 million and $155 million, respectively, that are recorded under Other non-current assets in the balance sheet. Impairment losses or observable price adjustments were not material during the three months ended March 30, 2024 and April 1, 2023.

Hedging Transactions and Derivative Financial Instruments

Foreign Currency Forward Contracts Designated as Accounting Hedges

The Company enters into foreign currency forward contracts to hedge its exposure to foreign currency exchange rate risk related to future forecasted transactions denominated in currencies other than the U.S. Dollar. These contracts generally mature within 24 months and are designated as accounting hedges. As of March 30, 2024 and December 30, 2023, the notional value of the Company's outstanding foreign currency forward contracts designated as cash flow hedges was $2.2 billion and $2.4 billion, respectively. The fair value of these contracts, recorded as a liability, was $14 million as of March 30, 2024 and as an asset of $6 million as of December 30, 2023.

Foreign Currency Forward Contracts Not Designated as Accounting Hedges

The Company also enters into foreign currency forward contracts to reduce the short-term effects of foreign currency fluctuations on certain receivables or payables denominated in currencies other than the U.S. Dollar. These forward contracts generally mature within 3 months and are not designated as accounting hedges. As of March 30, 2024 and December 30, 2023, the notional value of these outstanding contracts was $803 million and $568 million, respectively. The fair value of these contracts was not material as of March 30, 2024 and December 30, 2023.

NOTE 9 – Earnings Per Share

The following table sets forth the components of basic and diluted earnings per share:

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions, except per share amounts)	
Numerator		
Net income (loss) for basic earnings per share	$ 123	$ (139)
Denominator		
Basic weighted average shares	1,617	1,611
Potentially dilutive shares from employee equity plans	22	—
Diluted weighted average shares	1,639	1,611
Earnings (loss) per share:		
Basic	$ 0.08	$ (0.09)
Diluted	$ 0.07	$ (0.09)

Securities which would have been anti-dilutive are not material and are excluded from the computation of diluted earnings per share for all periods presented.

NOTE 10 – Common Stock and Employee Equity Plans

Common Stock

Shares of common stock outstanding were as follows:

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Balance, beginning of period	1,616	1,612
Common stock issued under employee equity plans	3	1
Common stock repurchases for tax withholding on equity awards	(1)	(1)
Repurchases of common stock	—	(3)
Balance, end of period	1,618	1,609

Stock Repurchase Program

The Company has an approved stock repurchase program authorizing repurchases of up to $12 billion of the Company’s common stock (Repurchase Program). During the three months ended March 30, 2024, the Company returned $4 million to shareholders through the repurchase of its common stock under the Repurchase Program. As of March 30, 2024, $5.6 billion remains available for future stock repurchases under the Repurchase Program. The Repurchase Program does not obligate the Company to acquire any common stock, has no termination date and may be suspended or discontinued at any time.

Stock-based Compensation

Stock-based compensation expense recorded in the condensed consolidated statements of operations was as follows:

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Cost of sales	$ 6	$ 8
Research and development	279	214
Marketing, general and administrative	86	87
Total	$ 371	$ 309

NOTE 11 – Income Taxes

The Company determines its income taxes for interim reporting periods by applying the Company's estimated annual effective tax rate to the year-to-date results, adjusted for tax items discrete to each period.

For the three months ended March 30, 2024, the Company recorded an income tax benefit of $52 million representing an effective tax rate of (73.2)%. The difference between the U.S. federal statutory tax rate of 21% and the Company's estimated annual effective tax rate was primarily due to the income tax benefit from foreign-derived intangible income (FDII) and research and development (R&D) tax credits. In addition, the tax benefit reflected discrete income tax benefits of $61 million, primarily related to stock-based compensation.

For the three months ended April 1, 2023, the Company recorded an income tax provision of $13 million representing an effective tax rate of (10.3)%. The difference between the U.S. federal statutory tax rate of 21% and the Company's estimated annual effective tax rate was primarily due to a higher mix of income taxed in lower tax rate jurisdictions, R&D tax credits, and beneficial rate impact from FDII tax benefit. In addition, the tax provision reflected discrete tax expense related to interest and penalties accrued for uncertain tax position.

As of March 30, 2024 and December 30, 2023, the Company had long-term income tax liabilities of $1.5 billion and $1.6 billion recorded under Other long-term liabilities in the balance sheet, respectively.

NOTE 12 – Commitments and Contingencies

Commitments

The Company's purchase commitments primarily include obligations to purchase wafers and substrates from third parties. These purchase obligations were made under noncancellable purchase orders or contractual obligations requiring minimum purchases for which cancellation would lead to significant penalties. Purchase commitments also include future payments related to certain software, technology and IP licenses.

Total future unconditional purchase commitments as of March 30, 2024 were as follows:

Fiscal Year	(In millions)
Remainder of 2024	$ 3,278
2025	348
2026	182
2027	44
2028	46
2029 and thereafter	94
Total unconditional purchase commitments	$ 3,992

On an ongoing basis, the Company works with suppliers on timing of payments and deliveries of purchase commitments, taking into account business conditions.

Contingencies

During the quarterly period ended March 30, 2024, there were no material legal proceedings. The Company is a defendant or plaintiff in various actions that arose in the normal course of business. With respect to these matters, based on management's current knowledge, the Company believes that the amount or range of reasonably possible loss, if any, will not, either individually or in the aggregate, have a material adverse effect on the Company's financial position, results of operations, or cash flows.

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The statements in this report include forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based on current expectations and beliefs and involve numerous risks and uncertainties that could cause actual results to differ materially from expectations. These forward-looking statements speak only as of the date hereof or as of the dates indicated in the statements and should not be relied upon as predictions of future events, as we cannot assure you that the events or circumstances reflected in these statements will be achieved or will occur. You can identify forward-looking statements by the use of forward-looking terminology including "believes," "expects," "may," "will," "should," "seeks," "intends," "plans," "pro forma," "estimates," "anticipates," or the negative of these words and phrases, other variations of these words and phrases or comparable terminology. The forward-looking statements relate to, among other things: possible impact of future accounting rules on AMD's condensed consolidated financial statements; demand for AMD's products; AMD's strategy and expected benefits; the growth, change and competitive landscape of the markets in which AMD participates; international sales will continue to be a significant portion of total sales in the foreseeable future; that AMD's cash, cash equivalents and short-term investment balances, together with the availability under that certain revolving credit facility (the Revolving Credit Agreement) made available to AMD and certain of its subsidiaries, our commercial paper program, and our cash flows from operations will be sufficient to fund AMD's operations including capital expenditures and purchase commitments and debt payments over the next 12 months and beyond; AMD's ability to access capital markets; AMD's ability to obtain sufficient external financing on favorable terms, or at all; AMD's expectation that based on management's current knowledge, the potential liability related to AMD's current litigation will not have a material adverse effect on its financial positions, results of operation or cash flows; anticipated ongoing and increased costs related to enhancing and implementing information security controls; all unbilled accounts receivables are expected to be billed and collected within 12 months; revenue allocated to remaining performance obligations that are unsatisfied which will be recognized in the next 12 months; a small number of customers will continue to account for a substantial part of AMD's revenue in the future; the expected implications from the development of the legal and regulatory environment relating to emerging technologies, such as AI; AMD's ability to achieve its corporate responsibility initiatives; expected future AI trends and developments; and AMD expects to fund stock repurchases through cash generated from operations. For a discussion of the factors that could cause actual results to differ materially from the forward-looking statements, see "Part II, Item 1A—Risk Factors" and the "Financial Condition" section set forth in "Part I, Item 2-Management's Discussion and Analysis of Financial Condition and Results of Operations," or MD&A, and such other risks and uncertainties as set forth below in this report or detailed in our other Securities and Exchange Commission (SEC) reports and filings. We assume no obligation to update forward-looking statements.

References in this Quarterly Report on Form 10-Q to "AMD," "we," "us," "management," "our" or the "Company" mean Advanced Micro Devices, Inc. and our consolidated subsidiaries.

AMD, the AMD Arrow logo, EPYC, Radeon, Ryzen, Xilinx and combinations thereof are trademarks of Advanced Micro Devices, Inc. Other names are for informational purposes only and are used to identify companies and products and may be trademarks of their respective owners. "Zen" is a codename for an AMD architecture and is not a product name.

The following discussion should be read in conjunction with the unaudited condensed consolidated financial statements and related notes included in this report and our audited consolidated financial statements and related notes as of December 30, 2023 and December 31, 2022, and for each of the three years for the period ended December 30, 2023 as filed in our Annual Report on Form 10-K for the fiscal year ended December 30, 2023.

Overview and Recent Developments

We are a global semiconductor company primarily offering:

- server microprocessors (CPUs), graphics processing units (GPUs), accelerated processing units (APUs), data processing units (DPUs), Field Programmable Gate Arrays (FPGAs), Smart Network Interface Cards (SmartNICs), Artificial Intelligence (AI) accelerators and Adaptive System-on-Chip (SoC) products for data centers;
- CPUs, APUs and chipsets for desktop, notebook, and handheld personal computers;
- discrete GPUs, and semi-custom SoC products and development services; and
- embedded CPUs, GPUs, APUs, FPGAs, System on Modules (SOMs), and Adaptive SoC products.

From time to time, we may also sell or license portions of our intellectual property (IP) portfolio.

In this section, we will describe the general financial condition and the results of operations of Advanced Micro Devices, Inc. and its wholly-owned subsidiaries (collectively, “us,” “our” or “AMD”), including a discussion of our results of operations for the three months ended March 30, 2024 compared to the prior year period and an analysis of changes in our financial condition.

Net revenue for the three months ended March 30, 2024 was $5.5 billion, a 2% increase compared to the prior year period. The increase in net revenue was driven by an increase in Data Center segment revenue from higher sales of AMD Instinct™ GPUs and 4th Gen AMD EPYC™ CPUs, and an increase in Client segment revenue primarily driven by Ryzen™ 8000 Series processor sales, partially offset by a decrease in Gaming segment revenue primarily due to a decrease in semi-custom revenue and lower Radeon™ GPU sales, and a decrease in Embedded segment revenue as customers continued to manage their inventory levels.

Gross margin for the three months ended March 30, 2024 was 47% compared to gross margin of 44% for the prior year period. The increase in gross margin was primarily driven by higher Data Center and Client segments revenue, and lower amortization of acquisition-related intangible assets, partially offset by lower Embedded and Gaming segments revenue.

Operating income for the three months ended March 30, 2024 was $36 million compared to operating loss of $145 million for the prior year period. Net income for the three months ended March 30, 2024 was $123 million compared to net loss of $139 million for the prior year period. The increase in operating and net income was primarily driven by higher Data Center and Client segments revenue, and lower amortization of acquisition-related intangible assets.

As of March 30, 2024, our cash, cash equivalents and short-term investments were $6.0 billion compared to $5.8 billion as of December 30, 2023. During the three months ended March 30, 2024, we generated $521 million of cash from operating activities.

We intend the discussion of our financial condition and results of operations that follows to provide information that will assist in understanding our financial statements, the changes in certain key items in those financial statements from period to period, the primary factors that resulted in those changes, and how certain accounting principles, policies and estimates affect our financial statements.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations are based upon our condensed consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP). The preparation of our financial statements requires us to make estimates and judgments that affect the reported amounts in our consolidated financial statements. We evaluate our estimates on an ongoing basis, including those related to our revenue, inventories, goodwill, long-lived and intangible assets, and income taxes. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Although actual results have historically been reasonably consistent with management’s expectations, the actual results may differ from these estimates or our estimates may be affected by different assumptions or conditions.

Management believes there have been no significant changes for the three months ended March 30, 2024 to the items that we disclosed as our critical accounting estimates in the Management's Discussion and Analysis of Financial Condition and Results of Operations section of our Annual Report on Form 10-K for the fiscal year ended December 30, 2023.

Results of Operations

Our operating results tend to vary seasonally. Historically, our net revenue has been generally higher in the second half of the year than in the first half of the year, although market conditions and product transitions could impact this trend.

The following table provides a summary of net revenue and operating income (loss) by segment:

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Net revenue:		
Data Center	$ 2,337	$ 1,295
Client	1,368	739
Gaming	922	1,757
Embedded	846	1,562
Total net revenue	$ 5,473	$ 5,353
Operating income (loss):		
Data Center	$ 541	$ 148
Client	86	(172)
Gaming	151	314
Embedded	342	798
All Other	(1,084)	(1,233)
Total operating income (loss)	$ 36	$ (145)

Data Center

Data Center net revenue of $2.3 billion for the three months ended March 30, 2024 increased by 80%, compared to net revenue of $1.3 billion for the prior year period primarily driven by higher sales of AMD Instinct GPUs and 4th Gen AMD EPYC CPUs.

Data Center operating income was $541 million for the three months ended March 30, 2024, compared to operating income of $148 million for the prior year period. The increase in operating income was primarily driven by higher revenue.

Client

Client net revenue of $1.4 billion for the three months ended March 30, 2024 increased by 85%, compared to net revenue of $739 million for the prior year period, primarily driven by a 58% increase in unit shipments and a 16% increase in average selling price of Ryzen processors, resulting from a recovery of weak PC market conditions and inventory corrections across the PC supply chain experienced in the first half of fiscal year 2023.

Client operating income was $86 million for the three months ended March 30, 2024, compared to operating loss of $172 million for the prior year period. The increase in operating income was primarily driven by higher revenue.

Gaming

Gaming net revenue of $922 million for the three months ended March 30, 2024 decreased by 48%, compared to net revenue of $1.8 billion for the prior year period, primarily due to a decrease in semi-custom revenue and lower Radeon GPU sales.

Gaming operating income was $151 million for the three months ended March 30, 2024, compared to operating income of $314 million for the prior year period. The decrease in operating income was primarily due to a decrease in semi-custom revenue and lower Radeon GPU sales.

Embedded

Embedded net revenue of $846 million for the three months ended March 30, 2024 decreased by 46%, compared to net revenue of $1.6 billion for the prior year period, as customers continued to manage their inventory levels.

Embedded operating income was $342 million for the three months ended March 30, 2024, compared to operating income of $798 million for the prior year period. The decrease in operating income was primarily due to lower revenue.

All Other

All Other operating loss of $1.1 billion for the three months ended March 30, 2024 primarily consisted of $622 million of amortization of acquisition-related intangibles, $371 million of stock-based compensation expense, $65 million of inventory loss at contract manufacturer and $39 million of acquisition-related and other costs. All Other operating loss of $1.2 billion for the prior year period primarily consisted of $823 million of amortization of acquisition-related intangibles, $309 million of stock-based compensation expense, and $111 million of acquisition-related and other costs.

Acquisition-related and other costs primarily include transaction costs, purchase price adjustments for inventory, certain compensation charges, contract termination and workforce rebalancing charges.

International Sales

International sales as a percentage of net revenue were 60% and 68% for the three months ended March 30, 2024 and April 1, 2023, respectively. We expect that international sales will continue to be a significant portion of total sales in the foreseeable future. Substantially all of our sales transactions were denominated in U.S. dollars.

Comparison of Gross Margin, Expenses, Licensing Gain, Interest Expense, Other Income (Expense) and Income Taxes

The following is a summary of certain condensed consolidated statement of operations data for the periods indicated:

	Three Months Ended	
	March 30, 2024	April 1, 2023
	In millions, except percentages	
Net revenue	$ 5,473	$ 5,353
Cost of sales	2,683	2,689
Amortization of acquisition-related intangibles	230	305
Gross profit	2,560	2,359
Gross margin	47 %	44 %
Research and development	1,525	1,411
Marketing, general and administrative	620	585
Amortization of acquisition-related intangibles	392	518
Licensing gain	(13)	(10)
Interest expense	(25)	(25)
Other income (expense), net	53	43
Income tax provision (benefit)	(52)	13
Equity income in investee	7	1

Gross Margin

Gross margin was 47% and 44% for the three months ended March 30, 2024 and April 1, 2023, respectively, primarily driven by higher Data Center and Client segments revenue, and lower amortization of acquisition-related intangible assets, partially offset by lower Embedded and Gaming segments revenue.

Expenses

Research and Development Expenses

Research and development expenses of $1.5 billion for the three months ended March 30, 2024 increased by $114 million, or 8%, compared to $1.4 billion for the prior year period. The increase was primarily due to an increase in employee-related costs due to an increase in headcount to support increased investment in AI.

Marketing, General and Administrative Expenses

Marketing, general and administrative expenses of $620 million for the three months ended March 30, 2024 increased by $35 million, or 6%, compared to $585 million for the prior year period, primarily due to an increase in go-to market activities.

Amortization of Acquisition-Related Intangibles

Amortization of acquisition-related intangibles of $622 million for the three months ended March 30, 2024 decreased by $201 million, or 24%, compared to $823 million for the prior year period. The decrease was primarily due to certain acquisition-related intangibles being fully amortized in the prior fiscal year.

Licensing Gain

During the three months ended March 30, 2024 and April 1, 2023, we recognized $13 million and $10 million, respectively, of licensing gain from royalty income associated with certain intellectual property licensed to two joint ventures in which we have an equity interest with Higon Information Technology Co., Ltd., a third-party Chinese entity (Licensed IP).

Interest Expense

Interest expense for the three months ended March 30, 2024 and April 1, 2023 was flat at $25 million since there was no material change in the Company's interest bearing notes payable balance. Our 2.95% Notes with a principal amount of $750 million are due in June 2024.

Other Income (Expense), Net

Other income (expense), net is primarily comprised of interest income from short-term investments, changes in valuation of equity investments, and foreign currency transaction gains and losses.

Other income, net for the three months ended March 30, 2024 was $53 million, an increase of $10 million or 23% compared to $43 million for the prior year period. The increase was primarily driven by higher interest income from rising interest rates.

Income Tax Provision (Benefit)

We determine income taxes for interim reporting periods by applying our estimated annual effective tax rate to the year-to-date results and adjusted for tax items discrete to each period.

For the three months ended March 30, 2024, we recorded an income tax benefit of $52 million representing an effective tax rate of (73.2)%. The difference between the U.S. federal statutory tax rate of 21% and our estimated annual effective tax rate was primarily due to the income tax benefit from foreign-derived intangible income (FDII) and research and development (R&D) tax credits. In addition, the tax benefit reflected discrete income tax benefits of $61 million, primarily related to stock-based compensation.

For the three months ended April 1, 2023, we recorded an income tax provision of $13 million representing an effective tax rate of (10.3)%. The difference between the U.S. federal statutory tax rate of 21% and our estimated annual effective tax rate was primarily due to a higher mix of income taxed in lower tax rate jurisdictions, R&D tax credits, and beneficial rate impact from FDII tax benefit. In addition, the tax provision reflected discrete tax expense related to interest and penalties accrued for uncertain tax position.

FINANCIAL CONDITION

Liquidity and Capital Resources

As of March 30, 2024 and December 30, 2023, our cash, cash equivalents and short-term investments were $6.0 billion and $5.8 billion, respectively. The percentage of cash, cash equivalents and short-term investments held domestically as of March 30, 2024 and December 30, 2023 were 86% and 77%, respectively.

Our operating, investing and financing activities for the three months ended March 30, 2024 compared to the prior year period are as described below:

	Three Months Ended	
	March 30, 2024	April 1, 2023
	(In millions)	
Net cash provided by (used in):		
Operating activities	$ 521	$ 486
Investing activities	(135)	(1,237)
Financing activities	(129)	(259)
Net (decrease) increase in cash and cash equivalents	$ 257	$ (1,010)

We have $3.0 billion available under an unsecured revolving credit agreement (Revolving Credit Agreement) that expires on April 29, 2027. No funds were drawn from this credit facility during the three months ended March 30, 2024. We also have a commercial paper program where we may issue unsecured commercial paper notes up to a maximum principal amount outstanding, at any time, of $3.0 billion, with a maturity of up to 397 days from the date of issue. We did not issue any commercial paper during the three months ended March 30, 2024.

As of March 30, 2024, our principal debt obligations were $2.5 billion. Our 2.95% Notes with a principal amount of $750 million are due in June 2024.

As of March 30, 2024, we had unconditional purchase commitments of approximately $4.0 billion, of which $3.3 billion are for the remainder of fiscal year 2024. On an ongoing basis, we work with our suppliers on the timing of payments and deliveries of purchase commitments, taking into account business conditions.

We believe our cash, cash equivalents, short-term investments and cash flows from operations along with our Revolving Credit Agreement and commercial paper program will be sufficient to fund operations, including capital expenditures, purchase commitments and debt payments, over the next 12 months and beyond. We believe we will be able to access the capital markets should we require additional funds. However, we cannot assure that such funds will be available on favorable terms, or at all.

Operating Activities

Our working capital cash inflows and outflows from operations are primarily cash collections from our customers, payments for inventory purchases and payments for employee-related expenditures.

Net cash provided by operating activities was $521 million in the three months ended March 30, 2024, primarily due to our net income of $123 million, adjusted for non-cash and non-operating charges of $1.2 billion and net cash outflows of $760 million from changes in our operating assets and liabilities. The primary drivers of the change in operating assets and liabilities was a $636 million decrease in accounts payable driven primarily by the timing of payments and inventory receipts, and a $368 million increase in inventory primarily to support the continued ramp of Data Center and Client products in advanced process nodes.

Net cash provided by operating activities was $486 million in the three months ended April 1, 2023, primarily due to our net loss of $139 million, adjusted for non-cash and non-operating charges of $1.0 billion and net cash outflows of $387 million from changes in our operating assets and liabilities. The primary driver of the change in operating assets and liabilities was a $464 million increase in inventory primarily in anticipation of the ramp of Data Center and Client products in advanced process nodes.

Investing Activities

Net cash used in investing activities was $135 million for the three months ended March 30, 2024 which primarily consisted of cash used in the purchases of short-term investments of $433 million and purchases of property and equipment of $142 million, partially offset by $443 million of proceeds from the maturity and sale of short-term investments.

Net cash used in investing activities was $1.2 billion for the three months ended April 1, 2023 which primarily consisted of cash used in the purchases of short-term investments of $1.7 billion and purchases of property and equipment of $158 million, partially offset by $618 million of proceeds from the maturity and sale of short-term investments.

Financing Activities

Net cash used in financing activities was $129 million for the three months ended March 30, 2024, which primarily consisted of repurchases for tax withholding on employee equity plans of $129 million.

Net cash used in financing activities was $259 million for the three months ended April 1, 2023, which primarily consisted of common stock repurchases of $241 million.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Reference is made to “Part II, Item 7A, Quantitative and Qualitative Disclosures About Market Risk,” in our Annual Report on Form 10-K for the fiscal year ended December 30, 2023.

There have not been any material changes in interest rate risk, default risk or foreign exchange risk since December 30, 2023.

ITEM 4. CONTROLS AND PROCEDURES

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our reports made under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer (CEO) and Chief Financial Officer (CFO) as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating our disclosure controls and procedures, our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and our management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As of March 30, 2024, the end of the period covered by this report, we carried out an evaluation under the supervision and with the participation of our management, including our CEO and CFO, of the effectiveness of the design and operation of our disclosure controls and procedures. Based on the foregoing, our CEO and CFO concluded that our disclosure controls and procedures were effective at the reasonable assurance level.

There were no changes in our internal controls over financial reporting for the three months ended March 30, 2024 that materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. LEGAL PROCEEDINGS

For a discussion of our legal proceedings, refer to Note 12—Commitments and Contingencies of the Notes to Condensed Consolidated Financial Statements (Part I, Item 1 of this Form 10-Q).

ITEM 1A. RISK FACTORS

The risks and uncertainties described below are not the only ones we face. If any of the following risks actually occurs, our business, financial condition or results of operations could be materially adversely affected. In addition, you should consider the interrelationship and compounding effects of two or more risks occurring simultaneously.

Risk Factors Summary

The following is a summary of the principal risks that could adversely affect our business, financial condition and results of operations.

Economic and Strategic Risks

- Intel Corporation’s dominance of the microprocessor market and its aggressive business practices may limit our ability to compete effectively on a level playing field.
- The semiconductor industry is highly cyclical and has experienced severe downturns.
- The demand for our products depends in part on the market conditions in the industries into which they are sold. There may be fluctuations in demand for our products or a market decline in any of these industries.
- The loss of a significant customer may have a material adverse effect on us.
- The markets in which our products are sold are highly competitive.
- Economic and market uncertainty may adversely impact our business and operating results.
- Our operating results are subject to quarterly and seasonal sales patterns.
- If we cannot adequately protect our technology or other intellectual property through patents, copyrights, trade secrets, trademarks and other measures, we may lose a competitive advantage and incur significant expenses.
- Unfavorable currency exchange rate fluctuations could adversely affect us.

Operational and Technology Risks

- We rely on third parties to manufacture our products, and if they are unable to do so on a timely basis in sufficient quantities and using competitive technologies, our business could be materially adversely affected.
- Essential equipment, materials, substrates or manufacturing processes may not be available to us.
- We may fail to achieve expected manufacturing yields for our products.
- The success of our business depends on our ability to introduce products on a timely basis with features and performance levels that provide value to our customers while supporting significant industry transitions.
- Our revenue from our semi-custom System-on-Chip (SoC) products is dependent upon our semi-custom SoC products being incorporated into customers’ products and the success of those products.
- Our products may be subject to security vulnerabilities that could have a material adverse effect on us.
- IT outages, data loss, data breaches and cyberattacks could disrupt operations and compromise our intellectual property or other sensitive information, be costly to remediate or cause significant damage to our business, reputation, financial condition and results of operations.
- Uncertainties involving the ordering and shipment of our products could materially adversely affect us.

- Our ability to design and introduce new products includes the use of third-party intellectual property.
- We depend on third-party companies for the design, manufacture and supply of motherboards, software, memory and other computer platform components to support our business and products.
- If we lose Microsoft Corporation’s support for our products or other software vendors do not design and develop software to run on our products, our ability to sell our products could be materially adversely affected.
- Our reliance on third-party distributors and add-in-board (AIB) partners subjects us to certain risks.
- Our business depends on the proper functioning of our internal business processes and information systems.
- Our products may not be compatible with some or all industry-standard software and hardware.
- Costs related to defective products could have a material adverse effect on us.
- We may fail to maintain the efficiency of our supply chain as we respond to changes in customer demand.
- We outsource to third parties certain supply-chain logistics functions.
- We may be unable to effectively control the sales of our products on the gray market.
- Climate change may have a long-term impact on our business.

Legal and Regulatory Risks

- Government actions and regulations may limit our ability to export our products to certain customers.
- If we cannot realize our deferred tax assets, our results of operations could be adversely affected.
- Our business is subject to potential tax liabilities, including as a result of tax regulation changes.
- We are party to litigation and may become a party to other claims or litigation.
- We are subject to environmental laws, conflict minerals regulations, as well as a variety of other laws or regulations..
- Evolving expectations from governments, investors, customers and other stakeholders regarding corporate responsibility matters could result in additional costs, harm to our reputation and a loss of customers.
- Issues related to the responsible use of AI may result in reputational, competitive and financial harm and liability.
- The agreements governing our notes, our guarantees of Xilinx’s notes, and our Revolving Credit Agreement impose restrictions on us that may adversely affect our ability to operate our business.

Merger, Acquisition and Integration Risks

- Acquisitions, joint ventures, and/or investments, and the failure to integrate acquired businesses may fail to materialize their anticipated benefits and disrupt our business.
- Any impairment of our tangible, definite-lived intangible or indefinite-lived intangible assets, including goodwill, may adversely impact our financial position and results of operations.

General Risks

- Our worldwide operations are subject to political, legal and economic risks and natural disasters.
- We may incur future impairments of our technology license purchases.
- Our inability to continue to attract and retain qualified personnel may hinder our business.
- Our stock price is subject to volatility.

For a more complete discussion of the material risks facing our business, see below.

Economic and Strategic Risks

Intel Corporation’s dominance of the microprocessor market and its aggressive business practices may limit our ability to compete effectively on a level playing field.

Intel’s microprocessor market share position, significant financial resources, introduction of competitive new products, and existing relationships with top-tier OEMs have enabled it to market and price its products aggressively, to target our customers and our channel partners with special incentives and to influence customers who do business with us. These aggressive activities have in the past resulted in lower unit sales and a lower average selling price for many of our products and adversely affected our margins and profitability. Intel also dominates the computer system platform and has a heavy influence on PC manufacturers, other PC industry participants, and benchmarks. It is able to drive de facto standards and specifications for x86 microprocessors that could cause us and other companies to have delayed access to such standards. We may be materially adversely affected by Intel’s business practices, including rebating and allocation strategies and pricing actions, designed to limit our market share and margins; product mix and introduction schedules; product bundling, marketing and merchandising strategies; and exclusivity payments to its current and potential customers, retailers and channel partners. We expect Intel to continue to heavily invest substantial resources in marketing, research and development, new manufacturing facilities and other technology companies. To the extent Intel manufactures a significantly larger portion of its microprocessor products using more advanced process technologies or introduces competitive new products into the market before we do, we may be more vulnerable to Intel’s aggressive marketing and pricing strategies for microprocessor products. We also compete with Intel in field programmable gate arrays (FPGAs) and Adaptive SoC products. In the graphics processing unit (GPU) market, Intel has developed and released their own high-end discrete GPUs, including gaming focused discrete GPUs. Intel could take actions that place our GPUs at a competitive disadvantage, including giving one or more of our competitors in the graphics market preferential access to its proprietary graphics interface or other useful information or restricting access to external companies.

The semiconductor industry is highly cyclical and has experienced severe downturns that have materially adversely affected, and may continue to materially adversely affect, our business in the future.

The semiconductor industry is highly cyclical and has experienced significant downturns, often in conjunction with constant and rapid technological change, wide fluctuations in supply and demand, continuous new product introductions, price erosion and declines in general economic conditions. We have incurred substantial losses in previous downturns, due to substantial declines in average selling prices; the cyclical nature of supply and demand imbalances in the semiconductor industry; a decline in demand for end-user products that incorporate our products; and excess inventory levels and periods of inventory adjustment. Such industry-wide fluctuations may materially adversely affect us in the future. Global economic uncertainty and weakness have in the past impacted the semiconductor market as consumers and businesses have deferred purchases, which negatively impacted demand for our products. Our financial performance has been, and may in the future be, negatively affected by these downturns. The growth of our business is also dependent on continued demand for our products from high-growth adjacent emerging global markets. Our ability to be successful in such markets depends in part on our ability to establish adequate local infrastructure, as well as our ability to cultivate and maintain local relationships in these markets. If demand from these markets is below our expectations, sales of our products may decrease, which would have a material adverse effect on us.

The demand for our products depends in part on the market conditions in the industries into which they are sold. Fluctuations in demand for our products or a market decline in any of these industries could have a material adverse effect on our results of operations.

Industry-wide fluctuations in the computer marketplace have materially adversely affected us in the past and may materially adversely affect us in the future. We offer products that are used in different end markets and the demand for our products can vary among our Data Center, Client, Gaming and Embedded end markets. For instance, in our Data Center segment, we offer products that are optimized for generative AI applications and in the fourth quarter of 2023, we experienced significant demand for our AI accelerators. The demand for such products will depend on the extent to which our customers utilize generative AI solutions in a wide variety of applications, and the long term trajectory of such generative AI solutions is unknown. Also, in our Client segment revenue is focused on the consumer desktop and notebook PC segments, which decreased in the first half of 2023 due to a decline in the PC market. In the past, revenues from the Client and Gaming segments have experienced a decline driven by, among other factors, the adoption of smaller and other form factors, increased competition and changes in replacement cycles. In addition, our GPU revenue in the past has been affected in part by the volatility of the cryptocurrency mining market. If we are unable to manage the risks related to the volatility of the cryptocurrency mining market (including potential actions by global monetary authorities), our GPU business could be materially adversely affected. The success of our semi-custom SoC products in our Gaming segment is dependent on securing customers for our semi-custom design pipeline and consumer market conditions, including the success of game console systems and next generation consoles for Sony and Microsoft. Our Embedded segment primarily includes embedded CPUs and GPUs, APUs, FPGAs and Adaptive SoC products some of which are subject to macroeconomic trends and volatile business conditions. To the extent our embedded customers are faced with higher inventory levels, they may choose to draw down their existing inventory and order less of our products. Our Embedded segment revenue decreased as a result of an inventory correction in several end markets in the second half of 2023 and the first quarter of 2024.

The loss of a significant customer may have a material adverse effect on us.

We depend on a small number of customers for a substantial portion of our business and we expect that a small number of customers will continue to account for a significant part of our revenue in the future. If one of our key customers decides to stop buying our products, materially reduces its operations or its demand for our products, or has operations that are materially impaired for a significant period of time such that it is unable to receive or utilize our products, our business would be materially adversely affected.

The markets in which our products are sold are highly competitive.

The markets in which our products are sold are highly competitive and delivering the latest and best products to market on a timely basis is critical to achieving revenue growth. We believe that the main factors that determine our product competitiveness are total cost of ownership, timely product introductions, product quality, product features and capabilities (including accelerations for key workloads such as AI, energy efficiency relating to power consumption and battery life given their impact on total cost of ownership, reliability, processor clock speed, performance, size (or form factor), selling price, cost, adherence to industry standards (and the creation of open industry standards), level of integration, software and hardware compatibility, ease of use and functionality of software design tools, completeness of applicable software solutions, security and stability, brand recognition and availability.

We expect that competition will continue to be intense due to rapid technological changes, frequent product introductions by our competitors or new competitors of products that may provide better performance/experience or that may include additional features that render our products comparatively less competitive. We may also face aggressive pricing by competitors, especially during challenging economic times. In addition, our competitors have significant marketing and sales resources which could increase the competitive environment in a declining market or during challenging economic times, leading to lower prices and margins. Some competitors may have greater access or rights to complementary technologies, including interface, processor and memory technical information. For instance, with our APU products and other competing solutions with integrated graphics, we believe that demand for additional discrete graphics chips and cards may decrease in the future due to improvements in the quality and performance of integrated graphics. If competitors introduce competitive new products into the market before us, demand for our products could be adversely impacted and our business could be adversely affected. In addition, Intel is expanding its position in integrated graphics for the PC market with high-end discrete graphics solutions for a broad range of computing markets, which may negatively impact our ability to compete in these computing markets, and Nvidia has added an ARM CPU offering which adds competition in the CPU market. Also, increased adoption of ARM-based semiconductor designs could lead to further growth and development of the ARM ecosystem. While we see significant opportunity in AI, we expect intense competition from companies such as Nvidia in the supply of GPUs and other accelerators for the AI market.

In addition, we are entering markets with current and new competitors who may be able to adapt more quickly to customer requirements and emerging technologies. We cannot guarantee that we will be able to compete successfully against current or new competitors who may have stronger positions in these new markets or superior ability to anticipate customer requirements and emerging industry trends. For example, the AI market is subject to rapid technological change, product obsolescence, frequent new product introductions and feature enhancements, changes in end-user requirements and evolving industry trends and legal standards. Furthermore, we may face competition from some of our customers who internally develop the same products as us. We may face delays or disruptions in research and development efforts, or we may be required to invest significantly greater resources in research and development than anticipated. Also, the semiconductor industry has seen several mergers and acquisitions over the last number of years. Further consolidation could adversely impact our business due to there being fewer suppliers, customers and partners in the industry.

From time to time, governments provide incentives or make other investments that could benefit and give a competitive advantage to our competitors. For example, the United States government enacted the Creating Helpful Incentives to Produce Semiconductors for America and Science Act (CHIPS Act) of 2022 to provide financial incentives to the U.S. semiconductor industry. Government incentives, including the CHIPS Act, may not be available to us on acceptable terms or at all. If our competitors can benefit from such government incentives and we cannot, it could strengthen our competitors’ relative position and have a material adverse effect on our business.

Economic and market uncertainty may adversely impact our business and operating results.

Uncertain global or regional economic conditions have and may in the future adversely impact our business. Uncertainty in the economic environment or other unfavorable changes in economic conditions, such as inflation, higher interest rates, recession, slowing growth, increased unemployment, tighter credit markets, changes in fiscal monetary or trade policy, or currency fluctuations, may negatively impact consumer confidence and spending causing our customers to stop or postpone purchases. For example, our Client segment revenue decreased in the first half of 2023, and our Embedded segment revenue decreased as a result of an inventory correction in several end markets in the second half of 2023 and the first quarter of 2024. During challenging economic times, our current or potential future customers may experience cash flow problems and as a result may modify, delay or cancel plans to purchase our products. Additionally, if our customers are not successful in generating sufficient revenue or are unable to secure financing, they may not be able to pay, or may delay payment of, accounts receivable that they owe us. The risk related to our customers potentially defaulting on or delaying payments to us is increased because we expect that a small number of customers will continue to account for a substantial part of our revenue. Any inability of our current or potential future customers to pay us for our products may adversely affect our earnings and cash flow. Moreover, our key suppliers may reduce their output or become insolvent, thereby adversely impacting our ability to manufacture our products. Adverse changes in economic conditions could increase costs of memory, equipment, materials or substrates and other supply chain expenses. If we are not able to procure a stable supply of materials on an ongoing basis and at reasonable costs to meet our production requirements, we could experience a supply shortage or an increase in production costs, which could negatively impact our gross margin and materially adversely affect our business. Our ability to forecast our operating results, make business decisions and execute our business strategy could be adversely impacted by challenging macroeconomic conditions. In addition, uncertain economic conditions could lead to higher borrowing costs and reduced availability of capital and credit markets, making it more difficult for us to raise funds through borrowings or private or public sales of debt or equity securities. An economic downturn or increased uncertainty could also lead to failures of counterparties including financial institutions and insurers, asset impairments and declines in the value of our financial instruments. If a banking institution in which we hold funds fails or is subject to significant adverse conditions in the financial or credit markets, we could be subject to a risk of loss of all or a portion of such uninsured funds or be subject to a delay in accessing all or a portion of such uninsured funds, which in turn could adversely impact our short-term liquidity and ability to meet our operating expense obligations.

Our operating results are subject to quarterly and seasonal sales patterns.

The profile of our sales may be weighted differently during the year. A large portion of our quarterly sales have historically been made in the last month of the quarter. This uneven sales pattern makes prediction of revenue for each financial period difficult and increases the risk of unanticipated variations in quarterly results and financial condition. In addition, our operating results tend to vary seasonally with the markets in which our products are sold. For example, historically, our net revenue has been generally higher in the second half of the year than in the first half of the year, although market conditions and product transitions could impact these trends. Many of the factors that create and affect quarterly and seasonal trends are beyond our control.

If we cannot adequately protect our technology or other intellectual property in the United States and abroad, through patents, copyrights, trade secrets, trademarks and other measures, we may lose a competitive advantage and incur significant expenses.

We rely on a combination of protections provided by contracts, including confidentiality and nondisclosure agreements, copyrights, patents, trademarks and common law rights, such as trade secrets, to protect our intellectual property. However, we cannot assure you that we will be able to adequately protect our technology or other intellectual property from third-party infringement or from misappropriation in the United States and abroad. Any patent licensed by us or issued to us could be challenged, invalidated, expire, or circumvented or rights granted thereunder may not provide a competitive advantage to us.

Furthermore, patent applications that we file may not result in issuance of a patent or, if a patent is issued, the patent may not be issued in a form that is advantageous to us. Despite our efforts to protect our intellectual property rights, others may independently develop similar products, duplicate our products or design around our patents and other rights. In addition, it is difficult to monitor compliance with, and enforce, our intellectual property on a worldwide basis in a cost-effective manner. In jurisdictions where foreign laws provide less intellectual property protection than afforded in the U.S. and abroad, our technology or other intellectual property may be compromised, and our business would be materially adversely affected.

Unfavorable currency exchange rate fluctuations could adversely affect us.

We have costs, assets and liabilities that are denominated in foreign currencies. As a consequence, movements in exchange rates could cause our foreign currency denominated expenses to increase as a percentage of revenue, affecting our profitability and cash flows. Whenever we believe appropriate, we hedge a portion of our foreign currency exposure to protect against fluctuations in currency exchange rates. We determine our total foreign currency exposure using projections of long-term expenditures for items such as payroll. We cannot assure you that these activities will be effective in reducing foreign exchange rate exposure. Failure to do so could have an adverse effect on our business, financial condition, results of operations and cash flow. In addition, the majority of our product sales are denominated in U.S. dollars. Fluctuations in the exchange rate between the U.S. dollar and the local currency can cause increases or decreases in the cost of our products in the local currency of such customers. An appreciation of the U.S. dollar relative to the local currency could reduce sales of our products.

Operational and Technology Risks

We rely on third parties to manufacture our products, and if they are unable to do so on a timely basis in sufficient quantities and using competitive technologies, our business could be materially adversely affected.

We utilize third-party wafer foundries to fabricate the silicon wafers for all of our products. We rely on Taiwan Semiconductor Manufacturing Company Limited (TSMC) for the production of all wafers for microprocessor and GPU products at 7 nanometer (nm) or smaller nodes, and we rely primarily on GLOBALFOUNDRIES Inc. (GF) for wafers for microprocessor and GPU products manufactured at process nodes larger than 7 nm. We also utilize TSMC, United Microelectronics Corporation (UMC) and Samsung Electronics Co., Ltd. for our integrated circuits (IC) in the form of programmable logic devices. We also rely on third-party manufacturers to assemble, test, mark and pack (ATMP) our products. Our third-party package assembly partners are responsible for packaging technology used to fabricate our products. It is important to have reliable relationships with all of these third-party manufacturing suppliers to ensure adequate product supply to respond to customer demand.

We cannot guarantee that these manufacturers or our other third-party manufacturing suppliers will be able to meet our near-term or long-term manufacturing requirements. If we experience supply constraints from our third-party manufacturing suppliers, we may be required to allocate the reduced quantities of affected products amongst our customers, which could have a material adverse effect on our relationships with these customers and on our financial condition. In addition, if we are unable to meet customer demand due to fluctuating or late supply from our manufacturing suppliers, it could result in lost sales and have a material adverse effect on our business. For example, if TSMC is not able to manufacture wafers for our microprocessor and GPU products at 7 nm or smaller nodes and our newest IC products in sufficient quantities to meet customer demand, it could have a material adverse effect on our business.

We do not have long-term commitment contracts with some of our third-party manufacturing suppliers. We obtain many of these manufacturing services on a purchase order basis and these manufacturers are not required to provide us with any specified minimum quantity of product beyond the quantities in an existing purchase order. Accordingly, we depend on these suppliers to allocate to us a portion of their manufacturing capacity sufficient to meet our needs, to produce products of acceptable quality and at acceptable manufacturing yields and to deliver those products to us on a timely basis and at acceptable prices. The manufacturers we use also fabricate wafers and ATMP products for other companies, including certain of our competitors. They could choose to prioritize capacity for other customers, increase the prices that they charge us on short notice, require onerous prepayments, or reduce or eliminate deliveries to us, which could have a material adverse effect on our business.

Other risks associated with our dependence on third-party manufacturers include limited control over delivery schedules, yield, cycle times, quality assurance, price increases, lack of capacity in periods of excess demand, misappropriation of our intellectual property, dependence on several subcontractors, and limited ability to manage inventory and parts. Moreover, if any of our third-party manufacturers (or their subcontractors) suffer any damage to facilities, lose benefits under material agreements, experience power outages, water shortages, or high heat events, lack sufficient capacity to manufacture our products, encounter financial difficulties, are unable to secure necessary raw materials from their suppliers, suffer any other disruption or reduction in efficiency, or experience uncertain environmental, social, atmospheric or natural, economic or political circumstances or conditions, we may encounter supply delays or disruptions. For example, in the first quarter of 2024, we experienced some inventory loss due to an incident at a contract manufacturer. If we are unable to secure sufficient or reliable supplies of products, our ability to meet customer demand may be adversely affected and this could materially affect our business.

If we transition the production of some of our products to new manufacturers, we may experience delayed product introductions, lower yields or poorer performance of our products. If we experience problems with product quality or are unable to secure sufficient capacity from a particular third-party manufacturer, or if we for other reasons cease utilizing one of those manufacturers, we may be unable to timely secure an alternative supply for any specific product. We could experience significant delays in the shipment of our products if we are required to find alternative third-party manufacturers, which could have a material adverse effect on our business.

We are a party to a wafer supply agreement (WSA) with GF that governs the terms by which we purchase products manufactured by GF and this agreement is in place through 2025. GF will provide a minimum annual capacity allocation to us through 2025 and we have corresponding annual wafer purchase targets. If we do not meet the annual wafer purchase target, we will be required to pay to GF a portion of the difference between the actual wafer purchases and the wafer purchase target for such year. AMD and GF also have agreed to wafer pricing through 2025. We do not have any exclusivity commitments with GF, and we have full flexibility to contract with any wafer foundry with respect to all products manufactured at any technology node. If our actual wafer requirements are less than the number of wafers required to meet the applicable annual wafer purchase target, we could have excess inventory or higher inventory unit costs, both of which may adversely impact our gross margin and our results of operations. If GF fails to meet its minimum annual capacity allocation obligations, we could experience significant delays in the shipment of our products, which could have a material adverse effect on our business.

We are party to two ATMP joint ventures (collectively, the ATMP JVs) with affiliates of Tongfu Microelectronics Co., Ltd. The majority of our ATMP services are provided by the ATMP JVs and there is no guarantee that the ATMP JVs will be able to fulfill our long-term ATMP requirements. If we are unable to meet customer demand due to fluctuating or late supply from the ATMP JVs, it could result in lost sales and have a material adverse effect on our business.

If essential equipment, materials, substrates or manufacturing processes are not available to manufacture our products, we could be materially adversely affected.

We may purchase equipment, materials and substrates for use by our back-end manufacturing service providers from a number of suppliers and our operations depend upon obtaining deliveries of adequate supplies of equipment and materials on a timely basis. Our third-party suppliers also depend on the same timely delivery of adequate quantities of equipment and materials in the manufacture of our products. In addition, as many of our products increase in technical complexity, we rely on our third-party suppliers to update their processes in order to continue meeting our back-end manufacturing needs. Certain equipment and materials that are used in the manufacture of our products are available only from a limited number of suppliers, or in some cases, a sole supplier. We also depend on a limited number of suppliers to provide the majority of certain types of IC packages for our microprocessors, including our APU products. Similarly, certain non-proprietary materials or components such as memory, printed circuit boards (PCBs), interposers, substrates and capacitors used in the manufacture of our products are currently available from only a limited number of suppliers. If we are unable to procure a stable supply of memory, equipment, materials or substrates on an ongoing basis and at reasonable costs to meet our production requirements, we could experience a shortage in memory, equipment, materials or substrate supply or an increase in production costs, which could have a material adverse effect on our business. We have long-term purchase commitments and prepayment arrangements with some of our suppliers. If the delivery of such supply is delayed or does not occur for any reason, it could materially impact our ability to procure and process the required volume of supply to meet customer demand. Conversely, a decrease in customer demand could result in excess inventory and an increase in our production costs, particularly since we have prepayment arrangements with certain suppliers. Because some of the equipment and materials that we and our third-party manufacturers purchase are complex, it is sometimes difficult to substitute one equipment or materials supplier for another.

From time to time, suppliers may extend lead times, limit supply or increase prices due to capacity constraints or other factors. Also, some of these materials and components may be subject to rapid changes in price and availability. Interruption of supply or increased demand in the industry could cause shortages and price increases in various essential materials. Dependence on a sole supplier or a limited number of suppliers exacerbates these risks. If we are unable to procure certain of these materials for our back-end manufacturing operations, or our third-party manufacturers are unable to procure materials for manufacturing our products, our business would be materially adversely affected.

Failure to achieve expected manufacturing yields for our products could negatively impact our results of operations.

Semiconductor manufacturing yields are a result of product design, process technology and packaging technology, which is typically proprietary to the manufacturer, and low yields can result from design failures, packaging technology failures, process technology failures or a combination of some or all of these. Our third-party manufacturers are responsible for the process technologies used to fabricate silicon wafers. If our third-party manufacturers experience manufacturing inefficiencies or encounter disruptions, errors or difficulties during production, we may fail to achieve acceptable yields or we may experience product delivery delays. We cannot be certain that our third-party manufacturers will be able to develop, expand, obtain or successfully implement leading-edge manufacturing process or packaging technologies needed to manufacture future generations of our products profitably or on a timely basis or that our competitors will not develop new technologies, products or processes earlier. Moreover, during periods when our third-party manufacturers are implementing new process or packaging technologies, their manufacturing facilities may not be fully productive. A substantial delay in the technology transitions to smaller process technologies could have a material adverse effect on us, particularly if our competitors transition to more cost effective technologies before us. For example, we are presently focusing our 7 nm and lower product microprocessor and GPU portfolio on TSMC’s processes. If TSMC is not able to manufacture wafers for our products at 7 nm or smaller nodes in sufficient quantities to meet customer demand, it could have a material adverse effect on our business. Moreover, we rely on TSMC, UMC and our other foundries to produce wafers with competitive performance attributes for our IC products. Therefore, the foundries, particularly TSMC which manufactures our newest IC products, must be able to transition to advanced manufacturing process technologies and increased wafer sizes, produce wafers at acceptable yields and deliver them in a timely manner.

Any decrease in manufacturing yields could result in an increase in per unit costs, which would adversely impact our gross margin and/or force us to allocate our reduced product supply amongst our customers, which could harm our relationships and reputation with our customers and materially adversely affect our business.

The success of our business depends on our ability to introduce products on a timely basis with features and performance levels that provide value to our customers while supporting and coinciding with significant industry transitions.

Our success depends to a significant extent on the development, qualification, implementation and acceptance of new product designs and improvements that provide value to our customers. Our ability to develop, qualify and distribute, and have manufactured, new products and related technologies to meet evolving industry trends and requirements, at prices acceptable to our customers and on a timely basis, are significant factors in determining our competitiveness in our target markets. We cannot assure you that our efforts to execute our product roadmap will result in innovative products and technologies that provide value to our customers. If we fail to or are delayed in developing, qualifying or shipping new products or technologies that provide value to our customers and address these new trends or if we fail to predict which new form factors, product features preferences or requirements, consumers will adopt and adjust our business accordingly, we may lose competitive positioning, which could cause us to lose market share and require us to discount the selling prices of our products. Although we make substantial investments in research and development, we cannot be certain that we will be able to develop, obtain or successfully implement new products and technologies on a timely basis or that they will be well-received by our customers. Moreover, our investments in new products and technologies involve certain risks and uncertainties and could disrupt our ongoing business. New investments may not generate sufficient revenue, may incur unanticipated liabilities and may divert our limited resources and distract management from our current operations. We cannot be certain that our ongoing investments in new products and technologies will be successful, will meet our expectations and will not adversely affect our reputation, financial condition and operating results. For example, as part of our Pervasive AI strategy, we have a portfolio of hardware products and software tools to allow our customers to develop scalable and pervasive AI solutions. We are increasingly building AI capabilities into our products, but there can be no assurance that such product offerings will be broadly accepted. If we fail to develop and timely offer or deploy such products and technologies or keep pace with the product offerings of our competitors, our business could be adversely affected. Additionally, our efforts in developing new AI technology solutions are inherently risky and may not always succeed. We may incur significant costs, resources, investments and delays and not achieve a return on investment or capitalize on the opportunities presented by demand for AI solutions. Moreover, while AI adoption is likely to continue and may accelerate, the long-term trajectory of this technological trend is uncertain.

Delays in developing, qualifying or shipping new products can also cause us to miss our customers' product design windows or, in some cases, breach contractual obligations or cause us to pay penalties. If our customers do not include our products in the initial design of their computer systems or products, they will typically not use our products in their systems or products until at least the next design configuration. The process of being qualified for inclusion in a customer's system or product can be lengthy and could cause us to further miss a cycle in the demand of end-users, which also could result in a loss of market share and harm our business. We also depend on the success and timing of our customers' platform launches. If our customers delay their product launches or if our customers do not effectively market their platforms with our products, it could result in a delay in bringing our products to market and cause us to miss a cycle in the demand of end-users, which could materially adversely affect our business. In addition, market demand requires that products incorporate new features and performance standards on an industry-wide basis. Over the life of a specific product, the sale price is typically reduced over time. The introduction of new products and enhancements to existing products is necessary to maintain the overall corporate average selling price. If we are unable to introduce new products with sufficiently high sale prices or to increase unit sales volumes capable of offsetting the reductions in the sale prices of existing products over time, our business could be materially adversely affected.

Our revenue from our semi-custom SoC products is dependent upon our semi-custom SoC products being incorporated into customers' products and the success of those products.

The revenue that we receive from our semi-custom SoC products is in the form of non-recurring engineering fees charged to third parties for design and development services and revenue received in connection with sales of our semi-custom SoC products to these third parties. As a result, our ability to generate revenue from our semi-custom products depends on our ability to secure customers for our semi-custom design pipeline, our customers' desire to pursue the project and our semi-custom SoC products being incorporated into those customers' products. Any revenue from sales of our semi-custom SoC products is directly related to sales of the third-party's products and reflective of their success in the market. Moreover, we have no control over the marketing efforts of these third parties, and we cannot make any assurances that sales of their products will be successful in current or future years. Consequently, the semi-custom SoC product revenue expected by us may not be fully realized and our operating results may be adversely affected.

Our products may be subject to security vulnerabilities that could have a material adverse effect on us.

The products that we sell are complex and have been and may in the future be subject to security vulnerabilities that could result in, among other things, the loss, corruption, theft or misuse of confidential data or system performance issues. Our efforts to prevent and address security vulnerabilities may decrease performance, be only partially effective or not successful at all. We may depend on vendors to create mitigations to their technology that we incorporate into our products and they may delay or decline to make such mitigations. We may also depend on third parties, such as customers and end users, to deploy our mitigations alone or as part of their own mitigations, and they may delay, decline or modify the implementation of such mitigations. Our relationships with our customers could be adversely affected as some of our customers may stop purchasing our products, reduce or delay future purchases of our products, or use competing products. Any of these actions by our customers could adversely affect our revenue. We have and may in the future be subject to claims and litigation related to security vulnerabilities. Actual or perceived security vulnerabilities of our products may subject us to adverse publicity, damage to our brand and reputation, and could materially harm our business or results of operations.

IT outages, data loss, data breaches and cyberattacks could disrupt operations and compromise our intellectual property or other sensitive information, be costly to remediate or cause significant damage to our business, reputation, financial condition and results of operations.

Our business relies on technology hardware, software, cloud services, infrastructure, networks and systems (collectively, IT Systems). We own and manage some IT Systems but also rely on critical third-party IT Systems, products and services. In the ordinary course of business, we and various third-party providers and business partners process and maintain sensitive data, including personal information about workers, customers and others, as well as intellectual property and proprietary or confidential information relating to our business and that of our customers and business partners (collectively, Confidential Data). Maintaining the availability, integrity and security of our IT Systems and Confidential Data is critical to our business and reputation. While we and others have implemented various controls and defenses, AMD and companies like AMD and our vendors and customers have been and are increasingly subject to cybersecurity attacks, risks and threats. Threat actors range in sophistication from individual hackers and insiders to ransom gangs and state-sponsored attackers. Cyber threats may be generic, or they may be custom-crafted against our IT Systems or supply chain. The increased prevalence of remote working arrangements at AMD and our providers present additional operational risks and attack vectors to our IT Systems. Our IT Systems and Confidential Data are vulnerable to a range of cybersecurity risks and threats, including malicious code that is added to widely available open-source software, compromised commercial software or security vulnerabilities in our products or systems, or those of a third party, that are being used by attackers prior to mitigations being put in place, such as zero-day attacks. Cyberattacks have and may come into our IT Systems through the compromise of users' access credentials. Users' access credentials can be compromised by phishing, vishing, smishing, multi-factor authentication (MFA) prompt bombing, hacking, or other social engineering, cybersecurity, or theft activities.

Threat actors are also increasingly using tools and techniques that circumvent controls, evade detection, and remove forensic evidence, which means that we and others may be unable to implement adequate preventative measures against, anticipate, detect, deflect, contain or recover from cyberattacks in a timely or effective manner. As AI capabilities improve and are increasingly adopted, we may see more sophisticated threats created through the use of AI technology to launch more automated, targeted and coordinated cyberattacks. These attacks could be crafted with an AI tool to directly attack IT Systems with increased speed and/or efficiency than a human threat actor or create more effective phishing emails. In addition, the threat could be introduced from the result of our or our customers and business partners incorporating the output of an AI tool that includes a threat, such as introducing malicious code by incorporating AI generated source code. Our network and storage applications, as well as those of our customers, business partners, and third-party providers, may be subject to unauthorized access by hackers or breached due to operator error, malfeasance or other system disruptions.

Cyberattacks that breach our security measures, or those of our third-party service providers, customers or business partners, could result in any or all of the following, which individually or collectively could materially adversely affect our financial condition, our competitive position; unauthorized access to, misuse or disclosure of Confidential Data (such as intellectual property, sensitive business information or personally identifiable information (PII)); reputational harm and/or diminution in our competitiveness; loss of existing and/or future customers; litigation and/or regulatory investigations or enforcement; significant remediation, restoration and compliance costs; and the diversion of management's attention and key information technology resources. In addition, many governments have enacted and are continuing to enact strict privacy and security laws, such as the UK's and European Union's General Data Protection Regulation (GDPR) and the California Consumer Privacy Act of 2018 (CCPA), as amended by the California Privacy Rights Act (CPRA), which provide for fines, penalties, and in the case of the CCPA and similar legislation, the basis for private claims for certain types of data breaches. We anticipate ongoing and increasing costs related to enhancing and implementing information security controls, including costs related to upgrading application, computer, and network security components; training workers to maintain and monitor our security controls; investigating, responding to and remediating any data security breach, and addressing any related litigation or regulatory proceedings; mitigating reputational harm; and complying with external regulations.

Uncertainties involving the ordering and shipment of our products could materially adversely affect us.

We typically sell our products pursuant to individual purchase orders. We generally do not have long-term supply arrangements with our customers or minimum purchase requirements except that orders generally must be for standard pack quantities. Generally, our customers may cancel orders for standard products more than 30 days prior to shipment without incurring significant fees. We base our inventory levels in part on customers' estimates of demand for their products, which may not accurately predict the quantity or type of our products that our customers will want in the future or ultimately end up purchasing. Our ability to forecast demand is further complicated when our products are sold indirectly through downstream channel distributors and customers, as our forecasts for demand are then based on estimates provided by multiple parties throughout the downstream channel. To the extent we fail to forecast demand and product mix accurately or are unable to increase production or secure sufficient capacity and there is a mismatch between supply and demand for our products, it could limit our ability to meet customer demand and have a material adverse effect on our business. Many of our markets are characterized by short product lifecycles, which can lead to rapid obsolescence and price erosion. In addition, our customers may change their inventory practices on short notice for any reason. For example, our Client segment revenue decreased due to a decline in the PC market in the first half of 2023, and our Embedded segment revenue decreased as a result of an inventory correction in several end markets in the second half of 2023 and the first quarter of 2024. We may build inventories during periods of anticipated growth, and the cancellation or deferral of product orders or overproduction due to failure of anticipated orders to materialize could result in excess or obsolete inventory, which could result in write-downs of inventory and an adverse effect on gross margins. Our customers may also experience a shortage of, or delay in receiving certain components to build their products, which in turn may affect the demand for or the timing of our products. For instance, OEMs have and continue to experience industry-wide challenges securing matched component sets to build their products.

Excess or obsolete inventory have resulted in, and may in the future result in, write-downs of the value of our inventory. Factors that may result in excess or obsolete inventory, a reduction in the average selling price, or a reduction in our gross margin include: a sudden or significant decrease in demand for our products; a production or design defect in our products; a higher incidence of inventory obsolescence because of rapidly changing technology and customer requirements; a failure to accurately estimate customer demand for our products, including for our older products as our new products are introduced; or our competitors introducing new products or taking aggressive pricing actions.

Our ability to design and introduce new products in a timely manner includes the use of third-party intellectual property.

In the design and development of new and enhanced products, we rely on third-party intellectual property such as development and testing tools for software and hardware. Furthermore, certain product features may rely on intellectual property acquired from third parties that we incorporate into our software or hardware. The design requirements necessary to meet customer demand for more features and greater functionality from semiconductor products may exceed the capabilities of the third-party intellectual property or development or testing tools available to us. If the third-party intellectual property that we use becomes unavailable, is not available with required functionality or performance in the time frame, manufacturing technology, or price point needed for our new products or fails to produce designs that meet customer demands, or laws are adopted that affect our use of third party intellectual property in certain regions or products, our business could be materially adversely affected.

We depend on third-party companies for the design, manufacture and supply of motherboards, software, memory and other computer platform components to support our business and products.

We depend on third-party companies for the design, manufacture and supply of motherboards, graphics cards, software (e.g., BIOS, operating systems, drivers), memory and other components that we use to design, support and sell, and our customers utilize to support and/or use our product offerings. We also rely on our AIB partners to support our products. In addition, our microprocessors are not designed to function with motherboards and chipsets designed to work with Intel microprocessors. If the designers, manufacturers, AIBs and suppliers of motherboards, graphics cards, software, memory and other components cease or reduce their design, manufacture or production of current or future products that are based on, utilized in, or support our products, or laws are adopted that result in the same, our business could be materially adversely affected.

If we lose Microsoft Corporation's support for our products or other software vendors do not design and develop software to run on our products, our ability to sell our products could be materially adversely affected.

Our ability to innovate beyond the x86 instruction set controlled by Intel depends partially on Microsoft designing and developing its operating systems to run on or support our x86-based microprocessor products. With respect to our graphics products, we depend in part on Microsoft to design and develop its operating system to run on or support our graphics products. Similarly, the success of our products in the market, such as our APU products, is dependent on independent software providers designing and developing software to run on our products. If Microsoft does not continue to design and develop its operating systems so that they work with our x86 instruction sets or does not continue to develop and maintain their operating systems to support our graphics products, independent software providers may forego designing their software applications to take advantage of our innovations and customers may not purchase PCs with our products. In addition, some software drivers licensed for use with our products are certified by Microsoft. If Microsoft did not certify a driver, or if we otherwise fail to retain the support of Microsoft or other software vendors, our ability to market our products would be materially adversely affected.

Our reliance on third-party distributors and AIB partners subjects us to certain risks.

We market and sell our products directly and through third-party distributors and AIB partners pursuant to agreements that can generally be terminated for convenience by either party upon prior notice. These agreements are non-exclusive and permit both our distributors and AIB partners to offer our competitors' products. We are dependent on our distributors and AIB partners to supplement our direct marketing and sales efforts. If any significant distributor or AIB partner or a substantial number of our distributors or AIB partners terminated their relationship with us, decided to market our competitors' products over our products or decided not to market our products at all, our ability to bring our products to market would be impacted and we would be materially adversely affected. We extend credit to certain of our distributors and AIB partners. If we are unable to collect accounts receivable from our significant distributors and/or AIB partners or incur higher allowances for credit losses, it could have a material adverse effect on our business. If we are unable to manage the risks related to the use of our third-party distributors and AIB partners or offer appropriate incentives to focus them on the sale of our products, our business could be materially adversely affected.

Additionally, distributors and AIB partners typically maintain an inventory of our products. In most instances, our agreements with distributors protect their inventory of our products against price reductions, as well as provide return rights for any product that we have removed from our price book that is less than 12 months older than the manufacturing date. Some agreements with our distributors also contain standard stock rotation provisions permitting limited levels of product returns. Our agreements with AIB partners protect their inventory of our products against price reductions. In the event of a significant decline in the price of our products, the price protection rights we offer would materially adversely affect us because our revenue and corresponding gross margin would decline.

Our business depends on the proper functioning of our internal business processes and information systems and modification or interruption of such systems may disrupt our business, processes and internal controls.

We rely upon a number of internal business processes and information systems to support key business functions, and the efficient operation of these processes and systems is critical to our business. Our business processes and information systems need to be sufficiently scalable to support the growth of our business and may require modifications or upgrades that expose us to a number of operational risks. As such, our information systems will continually evolve and adapt in order to meet our business needs. These changes may be costly and disruptive to our operations and could impose substantial demands on management time.

These changes may also require changes in our information systems, modification of internal control procedures and significant training of employees and third-party resources. We continuously work on simplifying our information systems and applications through consolidation and standardization efforts. There can be no assurance that our business and operations will not experience any disruption in connection with this transition. Our information technology systems, and those of third-party information technology providers or business partners, may also be vulnerable to damage or disruption caused by circumstances beyond our control including catastrophic events, power anomalies or outages, natural disasters, viruses or malware, cyberattacks, insider threat attacks, unauthorized system or data modifications, data breaches and computer system or network failures, exposing us to significant cost, reputational harm and disruption or damage to our business.

In addition, as our IT environment continues to evolve, we are embracing new ways of communicating and sharing data internally and externally with customers and partners using methods such as mobility and the cloud that can promote business efficiency. However, these practices can also result in a more distributed IT environment, making it more difficult for us to maintain visibility and control over internal and external users, and meet scalability and administrative requirements. If our security controls cannot keep pace with the speed of these changes or if we are not able to meet regulatory and compliance requirements, our business would be materially adversely affected.

If our products are not compatible with some or all industry-standard software and hardware, we could be materially adversely affected.

Our products may not be fully compatible with some or all industry-standard software and hardware. Further, we may be unsuccessful in correcting any such compatibility problems in a timely manner. If our customers are unable to achieve compatibility with software or hardware, we could be materially adversely affected. In addition, the mere announcement of an incompatibility problem relating to our products could have a material adverse effect on our business.

Costs related to defective products could have a material adverse effect on us.

Products as complex as those we offer may contain defects or failures when first introduced or when new versions or enhancements to existing products are released. We cannot assure you that, despite our testing procedures, errors will not be found in new products or releases after commencement of commercial shipments in the future, which could result in loss of or delay in market acceptance of our products, material recall and replacement costs, loss of revenue, writing down the inventory of defective products, the diversion of the attention of our engineering personnel from product development efforts, defending against litigation related to defective products or related liabilities, including property damage, personal injury, damage to our reputation in the industry and loss of data or intangible property, and could adversely affect our relationships with our customers. In addition, we may have difficulty identifying the end customers of the defective products in the field. As a result, we could incur substantial costs to implement modifications to correct defects. Any of these problems could materially adversely affect our business.

We could be subject to potential product liability claims if one of our products causes, or merely appears to have caused, an injury, whether tangible or intangible. Claims may be made by consumers or others selling our products, and we may be subject to claims against us even if an alleged injury is due to the actions of others. A product liability claim, recall or other claim with respect to uninsured liabilities or for amounts in excess of insured liabilities could have a material adverse effect on our business.

If we fail to maintain the efficiency of our supply chain as we respond to changes in customer demand for our products, our business could be materially adversely affected.

Our ability to meet customer demand for our products depends, in part, on our ability to deliver the products our customers want on a timely basis. Accordingly, we rely on our supply chain for the manufacturing, distribution and fulfillment of our products. As we continue to grow our business, expand to high-growth adjacent markets, acquire new customers and strengthen relationships with existing customers, the efficiency of our supply chain will become increasingly important because many of our customers tend to have specific requirements for particular products, geographic requirements, and specific time-frames in which they require delivery of these products. If we are unable to consistently deliver the right products to our customers on a timely basis in the right locations, our customers may reduce the quantities they order from us, which could have a material adverse effect on our business.

We outsource to third parties certain supply-chain logistics functions, including portions of our product distribution, transportation management and information technology support services.

We rely on third-party providers to operate our regional product distribution centers and to manage the transportation of our work-in-process and finished products among our facilities, to our third-party manufacturers and to our customers. In addition, we rely on third parties to provide certain information technology services to us, including help desk support, desktop application services, business and software support applications, server and storage administration, data center operations, database administration and voice, video and remote access. We cannot guarantee that these providers will fulfill their respective responsibilities in a timely manner in accordance with the contract terms, in which case our internal operations and the distribution of our products to our customers could be materially adversely affected. Also, we cannot guarantee that our contracts with these third-party providers will be renewed, in which case we would have to transition these functions in-house or secure new providers, which could have a material adverse effect on our business if the transition is not executed appropriately.

Our inability to effectively control the sales of our products on the gray market could have a material adverse effect on us.

We market and sell our products directly to OEMs and through authorized third-party distributors. From time to time, our products are diverted from our authorized distribution channels and are sold on the “gray market.” Gray market products result in shadow inventory that is not visible to us, thus making it difficult to forecast demand accurately. Also, when gray market products enter the market, we and our distribution channels compete with these heavily discounted gray market products, which adversely affects demand for our products and negatively impacts our margins. In addition, our inability to control gray market activities could result in customer satisfaction issues because any time products are purchased outside our authorized distribution channels there is a risk that our customers are buying counterfeit or substandard products, including products that may have been altered, mishandled or damaged, or are used products represented as new.

Climate change may have a long-term impact on our business.

Climate change may have an adverse impact on our business and the business of our suppliers and customers. Global climate change may result in certain natural disasters and climate-related events occurring with increasing frequency and severity and its physical impact on the major regions where we have operations has the potential to disrupt our business and those of our customers and suppliers. Our headquarters and some of our operations and facilities are located in areas that are susceptible to earthquakes and tsunamis, wildfires, extreme storms, extreme heat, drought, freezing, tropical cyclones and other natural disasters. Water and energy availability and reliability in the regions where we have facilities and where our suppliers have operations is important to our business. Certain natural disasters, including drought, wildfires, storms, sea-level rise and flooding could disrupt our operations and our suppliers’ or customers’ operations, including by disrupting, the availability of energy or water necessary for the operations of our business or those of our suppliers and customers. Global climate change is also resulting in chronic changes that result in certain natural disasters occurring more frequently or with greater intensity, which could disrupt our operations, or the operations of our third parties. Such disruptions could cause delays in manufacturing or shipping our products, affect our supply chain and may result in the loss of business, and additional costs to maintain or resume operations, any of which could adversely affect our business and results of operation. We may also experience contractual disputes relating to supply chain delays resulting from climate change related disruptions, which could result in increased litigation and costs. Data centers depend on access to clean water and reliable energy, thus potential power or water shortages could impair our customers’ ability to expand their data center capacity and consume our products and services.

Although we maintain insurance coverage for a variety of property, casualty, and other risks, the types and amounts of insurance we obtain vary depending on coverage, availability and cost. Some of our policies have large deductibles and broad exclusions. Additionally, our insurance providers may be unable or unwilling to pay a claim. Losses not covered by insurance may be large, which could materially harm our results of operations and financial condition.

Our business and the business of our suppliers and customers may also be subject to climate-related regulations, and contract terms, and may be subject to additional regulations and contract terms and lawsuits in the future. New increased regulations regarding carbon taxes, greenhouse gas emissions, fuel or energy taxes and other climate-related risks will likely result in greater costs; for example, as a result of carbon pricing impacts on electrical utilities and/or necessitating that we purchase more renewable energy than otherwise planned. Our supply chain manufacturing suppliers may be exposed to increased costs of doing business should they be affected by new climate-related expectations such as those affecting abatement equipment, renewable energy, and/or alter production processes and materials selections. The additional compliance costs incurred by our suppliers may be passed on to us and result in greater indirect costs to us. These costs and restrictions could materially harm our business and results of operations by increasing our expenses, impacting our reputation if there is actual or perceived non-compliance, or requiring us to alter our operations and products. The long-term effects of climate change on the global economy and the technology industry are unclear but could be severe. Additionally, we are or expect to be subject to various new or proposed climate-related disclosure requirements and we expect to incur costs and resources in order to comply. Failure to accurately comply with such reporting obligations may result in enforcement actions, reputational harm or private litigation that could have a material adverse effect on us.

Legal and Regulatory Risks

Government actions and regulations such as export regulations, tariffs, and trade protection measures may limit our ability to export our products to certain customers.

We have equity interests in two joint ventures (collectively, the THATIC JV) with Higon Information Technology Co., Ltd. (THATIC), a third-party Chinese entity. In June 2019, the Bureau of Industry and Security (BIS) of the United States Department of Commerce added certain Chinese entities to the Entity List, including THATIC and the THATIC JV. Since that time, the United States administration has called for changes to domestic and foreign policy, including policies with respect to China and Russia. Specifically, United States-China trade relations remain uncertain as the United States continues to add more Chinese companies to the Entity List and more regulations targeted to advanced computing, semiconductor manufacturing, and emerging technologies such as AI. Further, the United States and other countries and coalitions have issued sanctions and revisions to export control and other regulations against Russia, Belarus and the DNR and LNR regions of Ukraine, due to the conflict in Ukraine.

In October 2023, BIS issued new requirements for certain advanced computing items that apply to the export of products classified ECCN 3A090 or 4A090 to a party headquartered in, or with an ultimate parent headquartered in, any of Country Groups D1, D4 or D5, including China. These controls prevent us from shipping certain AMD Instinct™ integrated circuits and certain AMD Versal™ FPGAs to China, or to customers outside of the United States whose ultimate parent is headquartered in a D5 country (including China), without a license. These controls also require us to file a Notified Advanced Computing (NAC) notification with BIS 25 days before shipping certain Versal FPGAs to China, or to customers outside of the United States whose ultimate parent is headquartered in a D5 country (including China). In December 2023, BIS published a series of frequently asked questions indicating an intent to revise certain sections of the controls issued in October. Such revisions may bring certain other products into the NAC notification requirement. The NAC notification process could result in BIS prohibiting a shipment or requiring a license application before shipping a product that is the subject of a NAC notification. BIS may issue new licensing requirements and regulatory controls in the future. Even new products that fall below the licensing thresholds may not be successful because we have no assurances BIS will agree that the alternative products are not subject to the new licensing requirements or that future regulations will not control the alternative products. A significant trade disruption or the establishment or increase of any tariffs, trade protection measures or restrictions, or retaliatory actions from foreign governments could result in lost sales adversely impacting our reputation and business. There is also a possibility of future tariffs, trade protection measures, import or export regulations or other restrictions imposed on our current and future products, customers, or suppliers by the United States, China or other countries that could have a material adverse effect on our business. New export control restrictions may adversely impact the ability of our research and development teams located outside of the United States from executing our product roadmaps in a timely manner or at all. In addition, deemed export restrictions could further affect our ability to provide services or develop products in the United States.

United States export control regulations include restrictions or prohibitions on the sale or supply of certain AI technologies to United States embargoed or sanctioned countries, governments, persons and entities. If there are changes to those regulations, or to the categorization of our products under those regulations, our ability to sell our products and services outside the United States may be harmed. The United States and its allies continue to focus on export restrictions targeting semiconductors associated with AI, including GPUs and associated products. The United States has imposed unilateral controls restricting GPUs and associated products, and in the future is likely to further adopt other unilateral or multilateral controls. The scope and application of such controls have been and may again be very broad, which may prohibit us from exporting our products to any or all customers in one or more markets, including but not limited to China, and could negatively impact our manufacturing, testing and warehousing locations, or could impose other conditions that limit our ability to meet demand abroad. If these export controls targeting semiconductors associated with AI including GPUs and associated products are further tightened, our ability to export our technology, products or services could be further restricted. We may be at a competitive disadvantage if our competitors are not subject to the same or similar restrictions. Additionally, such export controls have, and may in the future, subject downstream recipients of our products to additional restrictions on the use, resale, repair or transfer of our products and may have a material adverse effect on us.

We may, from time to time, receive technical data from third parties that is subject to the International Traffic and Arms Regulations (ITAR), which are administered by the U.S. Department of State. Export Administration Regulation (EAR) governs the export and re-export of certain AMD products, including FPGAs, as well as the transfer of related technologies or provision of services, whether in the U.S. or abroad. We are required to maintain an internal compliance program and security infrastructure to meet EAR and ITAR requirements. An inability to obtain the required export licenses, or to predict when or pursuant to which conditions they will be granted, increases the difficulties of forecasting shipments. When we file license applications or Notification Advanced Computing (NAC) exception notices we have no assurance that BIS will grant any exemptions or licenses or that the BIS will act on the filings in a timely manner. Even if BIS grants a requested license, the license may come with burdensome conditions that we cannot or decide not to fulfill. In addition, security or compliance program failures that could result in penalties or a loss of export privileges, as well as stringent licensing restrictions that may make our products less attractive to overseas customers, could have a material adverse effect on our business, financial condition and/or operating results.

If we cannot realize our deferred tax assets, our results of operations could be adversely affected.

Our deferred tax assets include net operating losses and tax credit carryforwards that can be used to offset taxable income and reduce income taxes payable in future periods. Each quarter, we consider both positive and negative evidence to determine whether all or a portion of the deferred tax assets are more likely than not to be realized. If we determine that some or all of our deferred tax assets are not realizable, it could result in a material expense in the period in which this determination is made which may have a material adverse effect on our financial condition and results of operations.

In addition, a significant amount of our deferred tax assets related to net operating losses or tax credits which remain under a valuation allowance could be subject to limitations under Internal Revenue Code Section 382 or 383, separate return loss year rules, or dual consolidated loss rules. The limitations could reduce our ability to utilize the net operating losses or tax credits before the expiration of the tax attributes.

Our business is subject to potential tax liabilities, and exposure to greater-than-anticipated income tax liabilities as a result of changes in tax rules and regulations, changes in interpretation of tax rules and regulations, or unfavorable assessments from tax audits, could affect our effective tax rates, financial condition, and results of operations.

We are a U.S.-based multinational company subject to income tax, indirect tax or other tax claims in multiple U.S. and foreign tax jurisdictions in which we conduct business. Significant judgment is required in determining our worldwide provision for income taxes. Tax laws are dynamic and subject to change as new laws are passed and new interpretations of the law are issued or applied. Any changes to tax laws could have a material adverse effect on our tax obligations and effective tax rate. Our income tax obligations could be affected by many factors, including, but not limited to, changes to our corporate operating structure, intercompany arrangements, and tax planning strategies.

Our income tax expense is computed based on tax rates enacted at the time of the respective financial period. Our future effective tax rates, financial condition and results from operations could be unfavorably affected by changes in the tax rates in jurisdictions where our income is earned, by changes in the tax rules and regulations or the interpretation of tax rules and regulations in the jurisdictions in which we do business or by changes in the valuation of our deferred tax assets. Many countries have implemented legislation and other guidance to align their international tax rules with the Organization for Economic Co-operation and Development's (OECD) Base Erosion and Profit Shifting recommendations and action plan that aim to standardize and modernize global corporate tax policy, including changes to cross-border tax, transfer pricing documentation rules, and nexus-based tax incentive practices. The OECD is also continuing discussions surrounding fundamental changes in allocation of profits among tax jurisdictions in which companies do business, as well as the implementation of a global minimum tax (namely "Pillar One" and "Pillar Two"). Many countries we do business in have implemented laws based on Pillar Two, which may materially adversely impact our provision for income taxes, net income and cash flows. As a result of this heightened scrutiny, prior decisions by tax authorities regarding treatments and positions of corporate income taxes could be subject to review and inquiry, which could also result in changes in tax policies or existing tax rulings, and may have a material adverse effect on us.

In addition, we are subject to examinations of our income tax returns by domestic and foreign tax authorities. We regularly assess the likelihood of outcomes resulting from these examinations to determine the adequacy of our provision for income taxes and have reserved for potential adjustments that may result from the current examinations. There can be no assurance that the final determination of any of these examinations will not have an adverse effect on our effective tax rates, financial condition, and results of operations.

In the ordinary course of our business, there are many transactions and calculations where the ultimate income tax, indirect tax, or other tax determination is uncertain. Although we believe our tax estimates are reasonable, we cannot assure that the final determination of any tax audits or litigation will not be materially different from that which is reflected in historical tax provisions and accruals. Should additional taxes be assessed as a result of an audit, assessment or litigation, there could be a material adverse effect on our cash, tax provisions and results of operations in the period or periods for which that determination is made.

We are party to litigation and may become a party to other claims or litigation that could cause us to incur substantial costs or pay substantial damages or prohibit us from selling our products.

From time to time, we are a defendant or plaintiff in various legal actions, as described in Note 12 - Contingencies of the Notes to our Consolidated Financial Statements. For example, we have been subject to certain claims concerning federal securities laws and corporate governance. Our products are purchased by and/or used by consumers, which could increase our exposure to consumer actions such as product liability claims and consumer class action claims. On occasion, we receive claims that individuals were allegedly exposed to substances used in our former semiconductor wafer manufacturing facilities and that this alleged exposure caused harm. Litigation can involve complex factual and legal questions, and its outcome is uncertain. It is possible that if a claim is successfully asserted against us, it could result in the payment of damages that could be material to our business.

With respect to intellectual property litigation, from time to time, we have been notified of, or third parties may bring or have brought, actions against us and/or against our customers based on allegations that we are infringing the intellectual property rights of others, contributing to or inducing the infringement of the intellectual property rights of others, improperly claiming ownership of intellectual property or otherwise improperly using the intellectual property of others. If any such claims are asserted, we may seek to obtain a license under the third parties' intellectual property rights. We cannot assure you that we will be able to obtain all of the necessary licenses on satisfactory terms, if at all. These parties may file lawsuits against us or our customers seeking damages (potentially up to and including treble damages) or an injunction against the sale of products that incorporate allegedly infringed intellectual property or against the operation of our business as presently conducted, which could result in our having to stop the sale of some of our products or to increase the costs of selling some of our products or which could damage our reputation. The award of damages, including material royalty payments, or other types of damages, or the entry of an injunction against the manufacture and sale of some or all of our products could have a material adverse effect on us. We could decide, in the alternative, to redesign our products or to resort to litigation to challenge such claims. Such challenges could be extremely expensive and time-consuming regardless of their merit, could cause delays in product release or shipment and/or could have a material adverse effect on us. We cannot assure you that litigation related to our intellectual property rights or the intellectual property rights of others can always be avoided or successfully concluded.

Even if we were to prevail, any litigation could be costly and time-consuming and would divert the attention of our management and key personnel from our business operations, which could have a material adverse effect on us.

We are subject to environmental laws, conflict minerals regulations, as well as a variety of other laws or regulations that could result in additional costs and liabilities.

Our operations and properties are subject to various United States and foreign laws and regulations, including those relating to materials used in our products and the manufacturing processes of our products, discharge of pollutants into the environment, the treatment, transport, storage and disposal of solid and hazardous wastes and remediation of contamination. In addition, our operations and those of our suppliers are further governed by regulations prohibiting the use of forced labor (e.g., mining conflict materials), and restrictions on other materials, as well as laws or regulations governing the operation of our facilities, sale and distribution of our products, and real property. For the manufacturing of our products, these laws and regulations require our suppliers to obtain permits for operations, including the discharge of air pollutants and wastewater. Although our management systems are designed to oversee our suppliers' compliance, we cannot assure you that our suppliers have been or will be in complete compliance with such laws, regulations and permits. If our suppliers violate or fail to comply with any of them, a range of consequences could result, including fines, suspension of production, alteration of manufacturing processes, import/export restrictions, sales limitations, criminal and civil liabilities or other sanctions. Such non-compliance from our manufacturing suppliers could result in disruptions in supply, higher sourcing costs, and/or reputational damage for us. We could also be held liable for any and all consequences arising out of exposure to hazardous materials used, stored, released, disposed of by us or located at, under or emanating from our current or former facilities or other environmental or natural resource damage. We have been named as a responsible party at three Superfund sites in Sunnyvale, California and we are subject to Final Site Clean-up Requirements Orders from the California Regional Water Quality Control Board relating to the three sites and we have entered into settlement agreements with other responsible parties on two of the orders. During the term of such agreements, other parties have agreed to assume most of the foreseeable costs as well as the primary role in conducting remediation activities under the orders. We remain responsible for additional costs beyond the scope of the agreements as well as all remaining costs in the event that the other parties do not fulfill their obligations under the settlement agreements. The progress of future remediation efforts cannot be predicted with certainty and these costs may change. Although we have not been, we could be named a potentially responsible party at other Superfund or contaminated sites in the future. In addition, contamination that has not been identified could exist at our other facilities.

Future environmental legal requirements may become more stringent or costly. As such, the costs of complying with current and future environmental and health and safety laws, and our liabilities arising from past and future releases of, or exposure to, hazardous substances may increase and could have a material adverse effect on us.

Environmental laws are complex, change frequently and tend to become more stringent over time. For example, the European Union (EU) and China are among a growing number of jurisdictions that have enacted restrictions on the use of lead and other materials in electronic products. These regulations affect semiconductor devices and packaging. As regulations restricting materials in electronic products continue to increase around the world, there is a risk that the cost, quality and manufacturing yields of products that are subject to these restrictions may be less favorable compared to products that are not subject to such restrictions, or that the transition to compliant products may not meet customer roadmaps, or produce sudden changes in demand, which may result in excess inventory. Jurisdictions including the EU, Australia, California and China are developing or have finalized market entry or public procurement regulations for computers and servers based on ENERGY STAR specifications, and the like, as well as additional energy consumption limits. Certain of our products may be excluded from some of these markets which could materially adversely affect us. We incur costs associated with complying with conflict minerals reporting requirements to our customers and the SEC. In addition to the SEC regulation, the EU, China and other jurisdictions are developing new policies focused on conflict minerals that may impact and increase the cost of our compliance program. Customers are increasingly seeking information about the source of minerals used in our supply chain beyond those addressed in laws and regulations. Given the complexity of mineral supply chains, we may be unable to sufficiently verify the origins of the subject minerals and thus our reputation may be harmed. Moreover, we are likely to encounter challenges to satisfy customers who require that all of the components of our products be certified as "conflict free." If we cannot satisfy these customers, they may choose a competitor's products. In addition, new or increased regulations limiting the use of such components, or regulation regarding greenhouse gas emissions and climate change-related risks, could increase our energy costs, for example as a result of carbon pricing impacts on electrical utilities and/or necessitating that we purchase more renewable energy than otherwise planned. Our supply chain manufacturing suppliers may be exposed to increased cost of doing business should they be affected by new climate-related regulations, for example, affecting abatement equipment, renewable energy, and/or alter production processes and materials selections.

In addition to our Company, customers, governments and authorities continue to focus on eliminating risks of forced labor in supply chains which may increase the cost of our compliance program. Several customers have also issued expectations to eliminate these occurrences, if any, that may impact us. While we have a Human Rights Policy and management systems to identify and avoid these practices in our supply chain, we cannot guarantee that our suppliers will always be in conformance with laws and expectations. Our failure to satisfy customer expectations on forced and trafficked labor policies may result in these customers choosing a competitor’s product or enforcement liability and reputational challenges.

In addition, many governments have enacted laws around PII, such as the GDPR and the CCPA, and the failure to comply could result in sanctions or other actions by the governments. The GDPR imposes significant requirements on how we collect, process and transfer personal data, as well as significant fines for non-compliance.

New emerging technology trends, such as AI, require us to keep pace with evolving regulations and industry standards. Given the complexity and rapid development of AI, there are various current and proposed regulatory frameworks relating to the use of AI in products and services in the U.S. and foreign jurisdictions such as the EU. For example, in the EU, an AI act is being considered. Such laws and regulations may impede our ability to offer certain products and services in certain jurisdictions if we are unable to comply with them. We expect that the legal and regulatory environment relating to emerging technologies such as AI will continue to develop and could increase the cost of doing business, and create compliance risks and potential liability, all which may have a material adverse effect on our financial condition and results of operations. Governments are also considering the new issues in intellectual property law that AI creates, which could result in different intellectual property rights in technology we create with AI and development processes and procedures and could have a material adverse effect on our business.

Evolving expectations from governments, investors, customers and other stakeholders regarding corporate responsibility matters could result in additional costs, harm to our reputation and a loss of customers.

There are evolving expectations from governments, investors, customers and other stakeholders regarding corporate responsibility matters including those involving the environment and climate, energy and water consumption, diversity and inclusion, human rights and cybersecurity. Additionally, we are and expect to continue to be subject to various new and proposed climate-related and sustainability laws and requirements that may impact how we and our suppliers and customers conduct business or report on business by requiring the disclosure and tracking of greenhouse gas emissions, climate change-related risks and other sustainability matters related to our business. As the nature, scope and complexity of corporate responsibility reporting and disclosure requirements continue to evolve, we may incur additional compliance costs and indirect compliance costs from our customers and, suppliers that are passed on to us. In addition, certain corporate responsibility laws and regulation may require us to modify our business or supply chain in ways that are costly or less efficient. Emerging legal and regulatory requirements, can be unpredictable, are subject to change, and may be difficult for us to comply with given the complexity of our supply chain and our outsourced manufacturing. Our failure to comply, or the appearance of our failure to comply, with these legal and regulatory requirements can result in regulatory penalties, fines and legal liabilities, increase costs, and harm our reputation – any of which could materially adversely effect on our business, financial condition and results of operation. While we have engaged, and in the future may continue to engage in voluntary initiatives (such as voluntary disclosures, certifications, goals, or targets, among others) or commitments to improve our corporate responsibility profile and/or products or to respond to stakeholder expectations, such initiatives or achievement of such commitments may be costly, may not have the desired effect or may impact our reputation with other stakeholders and have a material adverse effect on our business.

For example, we have publicly announced certain corporate responsibility goals spanning multiple topics informed by input from various of our stakeholders, including customers, investors and employees. These goals, which reflect our current plans and aspirations based on known conditions, may change in the future or may not be achieved, as they are subject to various challenges, risks and expectations such as standards, processes, and methodologies that continue to evolve or emerge, and many of these matters are outside our control. Our progress towards some goals receive third-party limited assurance and not reasonable assurance, or may rely on receipt of others' information and data that may not be subject to either third-party limited or reasonable assurance. Any failure to achieve such goals, failure to achieve these goals within the set timeframe, or in the means expected, or the perception by stakeholders of such failure to achieve these goals may result in reputational or financial harm. Simultaneously, there are efforts by some stakeholders to reduce companies' efforts on certain environmental, social and sustainability-related matters. Both advocates and opponents of environmental, social and sustainability matters are increasingly resorting to a range of activism forms, including media campaigns and litigation, to advance their perspectives. To the extent we are subject to such activism or litigation, it may require us to incur costs or otherwise adversely impact our business. Stakeholder groups may find our stated goals to be insufficiently responsive to the implications of issues, such as climate change, and any failure to set or achieve corporate responsibility initiatives that meet stakeholder expectations may result in loss of customers or in investors selling their shares, which could harm our reputation and could have a material adverse effect on our business.

Issues related to the responsible use of AI may result in reputational, competitive and financial harm and liability.

We offer products that include capabilities to support AI deployment and we expect this part of our business to grow. As with many new emerging technologies, AI presents risks and challenges and increasing legal, social and ethical concerns relating to its responsible use that could affect the adoption of AI, and thus our business. Third-party misuse of AI applications, models, or solutions, or ineffective or inadequate AI development or deployment practices by us or our customers, could cause harm to individuals or society and impair the public's acceptance of AI. Moreover, we may be subject to competitive harm, regulatory action and legal liability as a result of new and proposed legislation regulating AI, as well as new applications of existing data protection, privacy and intellectual property and other laws. Such regulations and changes thereto could cause us to incur greater compliance costs and could also impact our ability to sell or the ability of our customers and users worldwide to acquire, deploy and use systems that include our AI-related products and services, which could thus require us to change our business practices and could adversely affect our business, financial condition and results of operations. If the AI-related products that we offer have unintended consequences, infringe intellectual property rights or rights of publicity, or are subject to or unintended usage or customization by our customers or are otherwise controversial due to their perceived or actual impact on human rights, privacy, cybersecurity, employment or other social, economic or political issues the public's acceptance of AI may be impaired and this may also result in reputational, competitive and financial harm and liability to our business.

The agreements governing our notes, our guarantees of the Assumed Xilinx Notes, and our Revolving Credit Agreement impose restrictions on us that may adversely affect our ability to operate our business.

The indenture governing our 3.924% Senior Notes due 2032 and 4.393% Senior Notes due 2052 contains various covenants that limit our ability to, among other things: create liens on certain assets to secure debt, enter into certain sale and leaseback transactions; and consolidate with, merge into or sell, convey or lease all or substantially all of our assets to any other person.

Additionally, in connection with the acquisition of Xilinx, we entered into supplemental indentures for the Xilinx's 2.950% Notes and 2.375% Notes (together, the *Assumed Xilinx Notes*), pursuant to which all obligations of Xilinx under the Assumed Xilinx Notes are unconditionally guaranteed on a senior unsecured basis by us. The indentures governing the Assumed Xilinx Notes also contain various covenants which limit our ability to, among other things, create certain liens on principal property or the capital stock of certain subsidiaries, enter into certain sale and leaseback transactions with respect to principal property, and consolidate or merge with, or convey, transfer or lease all or substantially all our assets, taken as a whole, to another person.

We also have an unsecured revolving credit facility in the aggregate principal amount of $3.0 billion (Revolving Credit Agreement). Our Revolving Credit Agreement contains various covenants which limit our ability to, among other things, incur liens; and consolidate or merge or sell our assets as an entirety or substantially as an entirety (in each case, except for certain customary exceptions). In addition, our Revolving Credit Agreement requires us to maintain a minimum consolidated interest coverage ratio at the end of each fiscal quarter. The agreement governing our convertible notes and our Revolving Credit Agreement contains provisions whereby a payment default or acceleration under certain agreements with respect to other material indebtedness would result in cross defaults under our convertible indenture or the Revolving Credit Agreement and allow note holders or the lenders under our Revolving Credit Agreement to declare all amounts outstanding under certain of our indentures or the Revolving Credit Agreement to be immediately due and payable. If the lenders under our Revolving Credit Agreement accelerate the repayment of borrowings, we cannot assure you that we will have sufficient assets to repay those borrowings.

Merger, Acquisition and Integration Risks

Acquisitions, joint ventures, and/or investments, and the failure to integrate acquired businesses, may fail to materialize their anticipated benefits and could disrupt our business, which could adversely affect our results of operation and financial condition.

We have acquired and invested in businesses, and may continue to do so, that offer products, services and technologies that we believe will help expand our product offerings and grow our business in response to changing technologies, customer demands and competitive pressures. Acquisitions or joint ventures include numerous risks including our inability to identify suitable opportunities in a timely manner or on terms acceptable to us; failure to complete a transaction in a timely manner, or at all, due to our inability to obtain required government or other approvals or IP disputes or other litigation; difficulty in obtaining financing on terms acceptable to us or at all; or other unforeseen factors. Even if we successfully complete an acquisition or joint venture, we may not be able to realize any of the anticipated benefits in a timely manner or at all for a variety of reasons, including, but not limited to: difficulty in integrating the technology, systems, products, policies, processes or operations and integrating and retaining the employees including key personnel of the acquired business; diversion of capital and other resources, including management's attention from our existing business; unanticipated costs or liabilities, such as increased interest expense and compliance with debt covenants or other obligations; coordinating and integrating in countries in which we have not previously operated; the potential impact of the acquisitions on our relationships with employees, vendors, suppliers and customers; our inability to effectively retain suppliers, vendors and customers of the acquired businesses; entry into geographic or business markets in which we have little or no experience; adverse changes in general economic conditions in regions in which we and the acquired companies operate; potential litigation associated with the acquisitions; difficulties in the assimilation of employees and culture; difficulties in managing the expanded operations of a larger and more complex company; and difficulties with integrating and upgrading our and the acquired companies' financial reporting systems. Any one of these factors could have a material adverse effect on our business, financial condition, results of operations, or cash flows.

In addition, to complete an acquisition, we may issue equity securities, which would dilute our stockholders' ownership and could adversely affect the price of our common stock, and/or incur debt, assume contingent liabilities or have amortization expenses and write-downs of acquired assets, which could adversely affect our results of operations.

Moreover, we may not adequately assess the risks of new business initiatives and subsequent events may arise that alter the risks that were initially considered. Acquisitions, joint ventures and other investments involve significant challenges and risks and could impair our ability to grow our business, develop new products or sell our products, which could have a negative impact on our results of operations. Acquisitions or joint ventures may also reduce our cash available for operation and other uses which could harm our business. For example, the majority of our ATMP services are provided by the ATMP JVs, and there is no guarantee that the JVs will be able to fulfill our long-term ATMP requirements. If we are unable to meet customer demand due to fluctuating or late supply from the ATMP JVs, it could result in lost sales and have a material adverse effect on our business. We may not realize the expected benefits from the THATIC JV's expected future performance, including the receipt of any future milestone payments and any royalties from certain licensed intellectual property. In June 2019, the BIS added certain Chinese entities to the Entity List, including THATIC and the THATIC JV. We are complying with U.S. law pertaining to the Entity List designation.

Furthermore, we may at times invest in private companies to further our strategic objectives and to support certain key business initiatives. Many of the instruments that we invest in are non-marketable and illiquid at the time of our initial investment, and we are not always able to achieve a return. To the extent any of the companies in which we invest in are not successful, we could recognize an impairment and/or lose all or part of our investment.

Any impairment of our tangible, definite-lived intangible or indefinite-lived intangible assets, including goodwill, may adversely impact our financial position and results of operations.

We account for certain acquisitions, including the Xilinx, Inc. (Xilinx) and Pensando Systems Inc. (Pensando) acquisitions, using the acquisition method of accounting under the provisions of ASC 805, Business Combinations, with AMD representing the accounting acquirer under this guidance. We record assets acquired, including identifiable intangible assets, and liabilities assumed, at their respective fair values at the acquisition date. Any excess of the purchase price over the net fair value of such assets and liabilities will be recorded as goodwill. In connection with the Xilinx and Pensando acquisitions, we recorded significant goodwill and other intangible assets on our consolidated balance sheet. Indefinite-lived intangible assets, including goodwill, are tested for impairment at least annually, and all tangible and intangible assets including goodwill will be tested for impairment when certain indicators are present. If, in the future, we determine that tangible or intangible assets, including goodwill, are impaired, we would record an impairment charge at that time. Impairment testing of goodwill requires significant use of judgment and assumptions, particularly as it relates to the determination of fair value. Subsequent to our annual goodwill impairment analysis, we monitor for any events or changes in circumstances, such as significant adverse changes in business climate or operating results, changes in management’s business strategy, an inability to successfully introduce new products in the marketplace, an inability to successfully achieve internal forecasts or significant declines in our stock price, which may represent an indicator of impairment. A decrease in the long-term economic outlook and future cash flows of our business could significantly impact asset values and potentially result in the impairment of tangible and intangible assets, including goodwill and may require us to record future impairment charges, which may have a material adverse impact on our financial position and results of operations.

General Risks

Our worldwide operations are subject to political, legal and economic risks and natural disasters, which could have a material adverse effect on us.

We maintain operations around the world, including in the United States, Canada, Europe, Australia, Latin America and Asia. We rely on third-party wafer foundries in the United States, Europe and Asia. Nearly all product assembly and final testing of our products is performed at third-party operated manufacturing facilities, in China, Malaysia and Taiwan. Our shipping services are provided by third-party subcontractors. We also have international sales operations. International sales, as a percent of net revenue, were 60% for the three months ended March 30, 2024. We expect that international sales will continue to be a significant portion of total sales in the foreseeable future. The political, legal and economic risks associated with our worldwide operations include, without limitation: expropriation; changes in a specific country’s or region’s political or economic conditions; changes in tax laws, trade protection measures and import or export licensing requirements and restrictions; difficulties in protecting our intellectual property; difficulties in managing staffing and exposure to different employment practices and labor laws; changes in foreign currency exchange rates; restrictions on transfers of funds and other assets of our subsidiaries between jurisdictions; changes in freight rates; changes to macroeconomic conditions, including interest rates, inflation and recession; transportation restrictions or disruptions; loss or modification of exemptions for taxes and tariffs; and compliance with U.S. laws and regulations related to international operations, including export control and economic sanctions laws and regulations and the Foreign Corrupt Practices Act. Recently, the U.S. and other countries and coalitions have issued sanctions and revisions to export control and other regulations against Russia, Belarus, and the DNR and LNR regions of Ukraine, due to the conflict in Ukraine. Also, geopolitical changes between China and Taiwan could disrupt the operations of our Taiwan-based third-party wafer foundries, manufacturing facilities and subcontractors, and materially adversely affect delivery of products and our business, financial condition and/or operating results. Moreover, the Ukraine-Russia and Israel-Hamas conflicts could escalate and expand, which in turn could have negative impacts on the global economy and financial markets.

In addition, our worldwide operations (or those of our business partners) could be subject to natural disasters and climate change such as earthquakes, tsunamis, flooding, tropical cyclones, droughts, fires, sea-level rise, extreme heat and volcanic eruptions that disrupt our operations, or those of our manufacturers, vendors or customers. For example, our California operations are located near major earthquake fault lines. In April 2024, Taiwan experienced an earthquake where our third-party wafer foundries are located. We also have operations and employees in regions that have experienced extreme weather such as prolonged heat waves, wildfires and freezing. Extreme weather events and natural disasters can also disrupt the ability of our suppliers to deliver expected manufacturing parts and/or services for periods of time. In addition, certain natural disasters, including drought, wildfires, storms, sea-level rise and flooding, could disrupt the availability of water necessary for the operations of our business or the business of our suppliers or customers. Global climate change also may result in chronic changes that result in certain natural disasters occurring more frequently or with greater intensity, which could disrupt our operations, or the operations of our third parties. There may be conflict or uncertainty in the countries in which we, our customers and suppliers operate, including public health issues, epidemics and pandemics, safety issues, natural disasters, fire, disruptions of service from utilities, nuclear power plant accidents or general economic or political factors. Global health outbreaks, such as COVID-19, have and may continue to adversely affect our employees, disrupt our business operations, as well those of our customers and suppliers. Public health measures by government authorities may cause us to incur additional costs, limit our operations, modify our business practices, diminish employee productivity or disrupt our supply chain, which may have a material adverse effect on our business.

The U.S. has been and may continue to be involved in armed conflicts that could have a further impact on our sales and our supply chain. The consequences of armed conflict, political instability or civil or military unrest are unpredictable, and we may not be able to foresee events that could have a material adverse effect on us. Terrorist attacks or other hostile acts may negatively affect our operations, or adversely affect demand for our products, and such attacks or related armed conflicts may impact our physical facilities or those of our suppliers or customers. Furthermore, these attacks or hostile acts may make travel and the transportation of our products more difficult and more expensive, which could materially adversely affect us. Any of these events could cause consumer spending to decrease or result in increased volatility in the U.S. economy and worldwide financial markets.

Any of the above risks, should they occur, could result in increased costs, shipment delays, general business interruptions, the inability to obtain, or delays in obtaining export licenses for certain technology, penalties or a loss of export privileges, as well as stringent licensing restrictions that may make our products less attractive to international customers, tariffs and other barriers and restrictions, longer payment cycles, increased taxes, restrictions on the repatriation of funds and the burdens of complying with a variety of foreign laws, any of which could ultimately have a material adverse effect on our business.

We may incur future impairments of our technology license purchases.

We license certain third-party technologies and tools for the design and production of our products. We report the value of those licenses as other non-current assets on the balance sheet and we periodically evaluate the carrying value of those licenses based on their future economic benefit to us. Factors such as the life of the assets, changes in competing technologies, and changes to the business strategy may represent an indicator of impairment. The occurrence of any of these events may require us to record future technology license impairment charges.

Our inability to continue to attract and retain qualified personnel may hinder our business.

Much of our future success depends upon the continued service of numerous qualified engineering, marketing, sales and executive employees. Competition for highly skilled executives and employees in the technology industry, especially in the areas of AI and machine learning, is intense and our competitors have targeted individuals in our organization that have desired skills and experience. If we are not able to continue to attract, train and retain our leadership team and our qualified employees necessary for our business, the progress of our product development programs could be hindered, and we could be materially adversely affected. We use share-based incentive awards to help attract, retain and motivate our executives and qualified employees. If the value of such stock awards does not appreciate as measured by the performance of the price of our common stock, or if our share-based compensation otherwise ceases to be viewed as a valuable benefit, our ability to attract, retain and motivate our executives and employees could be weakened, which could harm our results of operations. Also, if the value of our stock awards increases substantially, this could potentially create great personal wealth for our executives and employees and affect our ability to retain our personnel. In addition, any future restructuring plans may adversely impact our ability to attract and retain key employees.

Our stock price is subject to volatility.

Our stock price has experienced price and volume fluctuations and could be subject to wide fluctuations in the future. The trading price of our stock may fluctuate widely due to various factors including actual or anticipated fluctuations in our financial conditions and operating results, changes in financial estimates by us or financial estimates and ratings by securities analysts, changes in our capital structure, including issuance of additional debt or equity to the public, interest rate changes, inflation, news regarding our products or products of our competitors, and broad market and industry fluctuations. Stock price fluctuations could impact the value of our equity compensation, which could affect our ability to recruit and retain employees. In addition, volatility in our stock price could adversely affect our business and financing opportunities.

We have an approved stock repurchase program that authorizes repurchases of up to $12 billion of our common stock (Repurchase Program). As of March 30, 2024, $5.6 billion remained available for future stock repurchases under the Repurchase Program. The Repurchase Program does not obligate us to acquire any common stock, has no termination date and may be suspended or discontinued at any time. Our stock repurchases could affect the trading price of our stock, the volatility of our stock price, reduce our cash reserves, and may be suspended or discontinued at any time, which may result in a decrease in our stock price.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

Issuer Purchases of Equity Securities

We have an approved stock repurchase program authorizing repurchases of up to $12 billion of our common stock (Repurchase Program). We expect to fund repurchases through cash generated from operations. Our Repurchase Program does not obligate us to acquire any common stock, has no termination date and may be suspended or discontinued at any time.

The following table provides information relating to our repurchase of common stock for the three months ended March 30, 2024:

	Total Number of Shares Repurchased	Average Price Paid per Share	Total Number of Shares Repurchased as Part of Publicly Announced Program	Maximum Dollar Value of Shares That May Yet be Purchased Under the Program
				(In millions)
Dec 31, 2023 to Jan 27, 2024	—	$ —	—	$ 5,555
Jan 28, 2024 to Feb 24, 2024	26,958	$ 162.82	26,958	$ 5,550
Feb 25, 2024 to Mar 30, 2024	—	$ —	—	$ 5,550
Total	26,958			

The amounts above do not include the 1% excise tax on stock repurchases enacted by the Inflation Reduction Act of 2022.

Equity Award Share Withholding

During the three months ended March 30, 2024, there were $172 million in employee withholding taxes due upon the vesting of net settled equity awards. We withheld approximately 0.9 million shares of common stock from employees in connection with such net share settlement at an average price of $186.48 per share. These shares may be deemed to be “issuer purchases” of shares.

ITEM 5. OTHER INFORMATION

Item 5(c) Rule 10b5-1 Trading Plans

On March 7, 2024, Jean Hu, Executive Vice President, Chief Financial Officer and Treasurer, adopted a Rule 10b5-1 trading arrangement that is intended to satisfy the affirmative defense of Rule 10b5-1(c) for the sale of up to 40,000 shares of the Company’s common stock until March 7, 2025.

ITEM 6. EXHIBITS

31.1	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certification of the Principal Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of the Principal Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema Document.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.
104	Cover Page Interactive Data File - the cover page XBRL tags are embedded within the Inline XBRL document

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

ADVANCED MICRO DEVICES, INC.

May 1, 2024	By:	*/s/ Jean Hu*
	Name:	Jean Hu
	Title:	Executive Vice President, Chief Financial Officer and Treasurer Signing on behalf of the Registrant as the Principal Financial Officer

Certification of Chief Executive Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Lisa T. Su, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Advanced Micro Devices, Inc. (the “Company”);

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the Company’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the Company’s internal control over financial reporting that occurred during the Company’s most recent fiscal quarter (the Company’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the Company’s internal control over financial reporting; and

5. The Company’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company’s auditors and the audit committee of the Company’s board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company's ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's internal control over financial reporting.

Date: May 1, 2024

/s/Lisa T. Su

Lisa T. Su
Chair, President and Chief Executive Officer
(Principal Executive Officer)

Certification of Chief Financial Officer
Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Jean Hu, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Advanced Micro Devices, Inc. (the "Company");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Company as of, and for, the periods presented in this report;

4. The Company's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Company and have:

a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) evaluated the effectiveness of the Company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) disclosed in this report any change in the Company's internal control over financial reporting that occurred during the Company's most recent fiscal quarter (the Company's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting; and

5. The Company's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Company's auditors and the audit committee of the Company's board of directors (or persons performing the equivalent functions):

a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Company’s ability to record, process, summarize and report financial information; and

b) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company’s internal control over financial reporting.

Date: May 1, 2024

/s/Jean Hu

Jean Hu
Executive Vice President,
Chief Financial Officer and Treasurer
(Principal Financial Officer)

Exhibit 32.1

Certification of Principal Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Advanced Micro Devices, Inc. (the "Company") hereby certifies, to such officer's knowledge, that:

(i.) the Quarterly Report on Form 10-Q of the Company for the period ended March 30, 2024 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii.) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 1, 2024

/s/*Lisa T. Su*

Lisa T. Su
Chair, President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

Certification of Principal Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

Pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Advanced Micro Devices, Inc. (the "Company") hereby certifies, to such officer's knowledge, that:

(i.) the Quarterly Report on Form 10-Q of the Company for the period ended March 30, 2024 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii.) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 1, 2024

/s/Jean Hu

Jean Hu
Executive Vice President,
Chief Financial Officer and Treasurer
(Principal Financial Officer)

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-Q

(Mark One)

☑ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 30, 2024

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ________ to ________

Commission File Number: 000-06217

INTEL CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	94-1672743
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2200 Mission College Boulevard, Santa Clara, California	95054-1549
(Address of principal executive offices)	(Zip Code)

(408) 765-8080

(Registrant's telephone number, including area code)

N/A

(Former name, former address and former fiscal year, if changed since last report)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Common stock, $0.001 par value	INTC	Nasdaq Global Select Market

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☑ No ¨

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☑ No ¨

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	Accelerated filer	Non-accelerated filer	Smaller reporting company	Emerging growth company
☑	¨	¨	☐	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☑

As of April 19, 2024, the registrant had outstanding 4,257 million shares of common stock.

Table of Contents

Organization of Our Form 10-Q

The order and presentation of content in our Form 10-Q differs from the traditional SEC Form 10-Q format. Our format is designed to improve readability and better present how we organize and manage our business. See "Form 10-Q Cross-Reference Index" within Risk Factors and Other Key Information for a cross-reference index to the traditional SEC Form 10-Q format.

We have defined certain terms and abbreviations used throughout our Form 10-Q in "Key Terms" within the Consolidated Condensed Financial Statements and Supplemental Details.

The preparation of our Consolidated Condensed Financial Statements is in conformity with US GAAP. Our Form 10-Q includes key metrics that we use to measure our business, some of which are non-GAAP measures. See "Non-GAAP Financial Measures" within MD&A for an explanation of these measures and why management uses them and believes they provide investors with useful supplemental information.

Forward-Looking Statements

This Form 10-Q contains forward-looking statements that involve a number of risks and uncertainties. Words such as "accelerate", "achieve", "aim", "ambitions", "anticipate", "believe", "committed", "continue", "could", "designed", "estimate", "expect", "forecast", "future", "goals", "grow", "guidance", "intend", "likely", "may", "might", "milestones", "next generation", "objective", "on track", "opportunity", "outlook", "pending", "plan", "position", "possible", "potential", "predict", "progress", "ramp", "roadmap", "seek", "should", "strive", "targets", "to be", "upcoming", "will", "would", and variations of such words and similar expressions are intended to identify such forward-looking statements, which may include statements regarding:

- our business plans and strategy and anticipated benefits therefrom, including with respect to our IDM 2.0 strategy, Smart Capital strategy, partnership with Brookfield, internal foundry model, updated reporting structure, and AI strategy;
- projections of our future financial performance, including future revenue, gross margins, capital expenditures, and cash flows;
- projected costs and yield trends;
- future cash requirements, the availability, uses, sufficiency, and cost of capital resources, and sources of funding, including for future capital and R&D investments and for returns to stockholders, such as stock repurchases and dividends, and credit ratings expectations;
- future products, services, and technologies, and the expected goals, timeline, ramps, progress, availability, production, regulation, and benefits of such products, services, and technologies, including future process nodes and packaging technology, product roadmaps, schedules, future product architectures, expectations regarding process performance, per-watt parity, and metrics, and expectations regarding product and process leadership;
- investment plans and impacts of investment plans, including in the US and abroad;
- internal and external manufacturing plans, including future internal manufacturing volumes, manufacturing expansion plans and the financing therefor, and external foundry usage;
- future production capacity and product supply;
- supply expectations, including regarding constraints, limitations, pricing, and industry shortages;
- plans and goals related to Intel's foundry business, including with respect to anticipated customers, future manufacturing capacity and service, technology, and IP offerings;
- expected timing and impact of acquisitions, divestitures, and other significant transactions, including the sale of our NAND memory business;
- expected completion and impacts of restructuring activities and cost-saving or efficiency initiatives;
- future social and environmental performance goals, measures, strategies, and results;
- our anticipated growth, future market share, and trends in our businesses and operations;
- projected growth and trends in markets relevant to our businesses;
- anticipated trends and impacts related to industry component, substrate, and foundry capacity utilization, shortages, and constraints;
- expectations regarding government incentives;
- future technology trends and developments, such as AI;
- future macro environmental and economic conditions;
- geopolitical tensions and conflicts and their potential impact on our business;
- tax- and accounting-related expectations;
- expectations regarding our relationships with certain sanctioned parties; and
- other characterizations of future events or circumstances.

Such statements involve many risks and uncertainties that could cause our actual results to differ materially from those expressed or implied, including those associated with:

- the high level of competition and rapid technological change in our industry;
- the significant long-term and inherently risky investments we are making in R&D and manufacturing facilities that may not realize a favorable return;
- the complexities and uncertainties in developing and implementing new semiconductor products and manufacturing process technologies;
- our ability to time and scale our capital investments appropriately and successfully secure favorable alternative financing arrangements and government grants;
- implementing new business strategies and investing in new businesses and technologies;
- changes in demand for our products;
- macroeconomic conditions and geopolitical tensions and conflicts, including geopolitical and trade tensions between the US and China, the impacts of Russia's war on Ukraine, tensions and conflict affecting Israel and the Middle East, and rising tensions between mainland China and Taiwan;
- the evolving market for products with AI capabilities;

- our complex global supply chain, including from disruptions, delays, trade tensions and conflicts, or shortages;
- product defects, errata and other product issues, particularly as we develop next-generation products and implement next-generation manufacturing process technologies;
- potential security vulnerabilities in our products;
- increasing and evolving cybersecurity threats and privacy risks;
- IP risks including related litigation and regulatory proceedings;
- the need to attract, retain, and motivate key talent;
- strategic transactions and investments;
- sales-related risks, including customer concentration and the use of distributors and other third parties;
- our significantly reduced return of capital in recent years;
- our debt obligations and our ability to access sources of capital;
- complex and evolving laws and regulations across many jurisdictions;
- fluctuations in currency exchange rates;
- changes in our effective tax rate;
- catastrophic events;
- environmental, health, safety, and product regulations;
- our initiatives and new legal requirements with respect to corporate responsibility matters; and
- other risks and uncertainties described in this report, our 2023 Form 10-K and our other filings with the SEC.

Given these risks and uncertainties, readers are cautioned not to place undue reliance on such forward-looking statements. Readers are urged to carefully review and consider the various disclosures made in this Form 10-Q and in other documents we file from time to time with the SEC that disclose risks and uncertainties that may affect our business.

Unless specifically indicated otherwise, the forward-looking statements in this Form 10-Q do not reflect the potential impact of any divestitures, mergers, acquisitions, or other business combinations that have not been completed as of the date of this filing. In addition, the forward-looking statements in this Form 10-Q are based on management's expectations as of the date of this filing, unless an earlier date is specified, including expectations based on third-party information and projections that management believes to be reputable. We do not undertake, and expressly disclaim any duty, to update such statements, whether as a result of new information, new developments, or otherwise, except to the extent that disclosure may be required by law.

Availability of Company Information

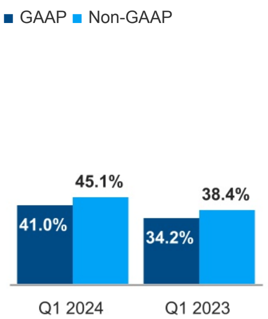
We use our Investor Relations website, *www.intc.com,* as a routine channel for distribution of important, and often material, information about us, including our quarterly and annual earnings results and presentations, press releases, announcements, information about upcoming webcasts, analyst presentations, and investor days, archives of these events, financial information, corporate governance practices, and corporate responsibility information. We also post our filings on this website the same day they are electronically filed with, or furnished to, the SEC, including our annual and quarterly reports on Forms 10-K and 10-Q and current reports on Form 8-K, our proxy statements, and any amendments to those reports. All such information is available free of charge. Our Investor Relations website allows interested persons to sign up to automatically receive e-mail alerts when we post financial information and issue press releases, and to receive information about upcoming events. We encourage interested persons to follow our Investor Relations website in addition to our filings with the SEC to timely receive information about the company.

A Quarter in Review

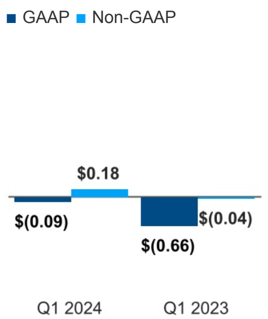
Total revenue of $12.7 billion was up $1.0 billion or 9% from Q1 2023, as CCG revenue increased 31%, DCAI revenue increased 5%, and NEX revenue decreased 8%. CCG revenue increased primarily due to higher notebook and desktop volumes as customer inventory levels normalized compared to higher levels in Q1 2023. DCAI revenue increased due to higher server ASPs primarily due to a lower mix of hyperscale customer-related revenue and a higher mix of high core count products, partially offset by lower server volume due to lower demand in a competitive environment and a higher mix of high core count products. NEX revenue decreased primarily due to 5G customers tempering purchases to reduce existing inventories, partially offset by higher Edge and Network revenue. Altera, an Intel Company (previously Intel's Programmable Solutions Group) and Mobileye revenue decreased as customers tempered purchases to reduce existing inventories.

Revenue

Gross Margin



Diluted EPS attributable to Intel



Cash Flows

$12.7B GAAP

Revenue up $1.0B or 9% from Q1 2023

41.0% GAAP

Gross margin up 6.8 ppts from Q1 2023

45.1% non-GAAP[1]

Gross margin up 6.7 ppts from Q1 2023

$(0.09) GAAP

Diluted EPS attributable to Intel up $0.57 or 86% from Q1 2023

$0.18 non-GAAP[1]

Diluted EPS attributable to Intel up $0.22 from Q1 2023

$(1.2)B GAAP

Operating cash flow up $0.6B or 31% from Q1 2023

$(6.2)B non-GAAP[1]

Adjusted free cash flow up $2.6B or 30% from Q1 2023

Higher CCG revenue.

Higher GAAP gross margin from higher revenue and lower period charges, partially offset by higher unit cost.

Higher GAAP EPS attributable to Intel from higher gross margin and a tax benefit compared to a tax expense in Q1 2023, partially offset by higher operating expenses.

Lower cash used for operating activities driven primarily by a reduced net operating loss, partially offset by certain cash unfavorable changes in working capital.

Key Developments

- We launched Intel Foundry as a more sustainable systems foundry business designed for the AI era and announced an expanded process roadmap, which includes evolutions for Intel 3, Intel 18A, and Intel 14A process technologies.
- The U.S. Department of Commerce has proposed up to $8.5 billion in direct funding and to make up to $11.0 billion in loans available under the CHIPS and Science Act to help advance our manufacturing and research and development projects at sites in Arizona, New Mexico, Ohio, and Oregon.
- We launched Altera® as a new standalone FPGA company, in order to deliver programmable solutions and accessible AI across a broad range of applications in the cloud, network, and edge markets.
- We opened Fab 9 in New Mexico, producing the world's most advanced packaging solutions at scale.

[1] *See "Non-GAAP Financial Measures" within MD&A.*

Consolidated Condensed Statements of Income

(In Millions, Except Per Share Amounts; Unaudited)	Three Months Ended Mar 30, 2024	Three Months Ended Apr 1, 2023
Net revenue	$ 12,724	$ 11,715
Cost of sales	7,507	7,707
Gross margin	5,217	4,008
Research and development	4,382	4,109
Marketing, general, and administrative	1,556	1,303
Restructuring and other charges	348	64
Operating expenses	6,286	5,476
Operating income (loss)	(1,069)	(1,468)
Gains (losses) on equity investments, net	205	169
Interest and other, net	145	141
Income (loss) before taxes	(719)	(1,158)
Provision for (benefit from) taxes	(282)	1,610
Net income (loss)	(437)	(2,768)
Less: Net income (loss) attributable to non-controlling interests	(56)	(10)
Net income (loss) attributable to Intel	$ (381)	$ (2,758)
Earnings (loss) per share attributable to Intel—basic	$ (0.09)	$ (0.66)
Earnings (loss) per share attributable to Intel—diluted	$ (0.09)	$ (0.66)
Weighted average shares of common stock outstanding:		
Basic	4,242	4,154
Diluted	4,242	4,154

See accompanying notes.

Consolidated Condensed Statements of Comprehensive Income

(In Millions; Unaudited)	Three Months Ended Mar 30, 2024	Three Months Ended Apr 1, 2023
Net income (loss)	**$ (437)**	**$ (2,768)**
Changes in other comprehensive income (loss), net of tax:		
Net unrealized holding gains (losses) on derivatives	(328)	142
Actuarial valuation and other pension benefits (expenses), net	—	1
Translation adjustments and other	1	—
Other comprehensive income (loss)	**(327)**	**143**
Total comprehensive income (loss)	**(764)**	**(2,625)**
Less: comprehensive income (loss) attributable to non-controlling interests	(56)	(10)
Total comprehensive income (loss) attributable to Intel	**$ (708)**	**$ (2,615)**

See accompanying notes.

Consolidated Condensed Balance Sheets

(In Millions; Unaudited)	Mar 30, 2024	Dec 30, 2023
Assets		
Current assets:		
Cash and cash equivalents	$ 6,923	$ 7,079
Short-term investments	14,388	17,955
Accounts receivable, net	3,323	3,402
Inventories	11,494	11,127
Other current assets	6,480	3,706
Total current assets	**42,608**	**43,269**
Property, plant, and equipment, net of accumulated depreciation of $99,315 ($98,010 as of December 30, 2023)	**99,924**	**96,647**
Equity investments	**6,139**	**5,829**
Goodwill	**27,440**	**27,591**
Identified intangible assets, net	**4,675**	**4,589**
Other long-term assets	**11,947**	**13,647**
Total assets	**$ 192,733**	**$ 191,572**
Liabilities and stockholders' equity		
Current liabilities:		
Short-term debt	$ 4,581	$ 2,288
Accounts payable	8,559	8,578
Accrued compensation and benefits	2,506	3,655
Income taxes payable	346	1,107
Other accrued liabilities	11,221	12,425
Total current liabilities	**27,213**	**28,053**
Debt	**47,869**	**46,978**
Other long-term liabilities	**6,895**	**6,576**
Contingencies (Note 13)		
Stockholders' equity:		
Common stock and capital in excess of par value, 4,257 issued and outstanding (4,228 issued and outstanding as of December 30, 2023)	38,291	36,649
Accumulated other comprehensive income (loss)	(542)	(215)
Retained earnings	68,224	69,156
Total Intel stockholders' equity	**105,973**	**105,590**
Non-controlling interests	**4,783**	**4,375**
Total stockholders' equity	**110,756**	**109,965**
Total liabilities and stockholders' equity	**$ 192,733**	**$ 191,572**

See accompanying notes.

Consolidated Condensed Statements of Cash Flows

(In Millions; Unaudited)	Three Months Ended Mar 30, 2024	Apr 1, 2023
Cash and cash equivalents, beginning of period	**$ 7,079**	**$ 11,144**
Cash flows provided by (used for) operating activities:		
Net income (loss)	(437)	(2,768)
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Depreciation	2,200	1,901
Share-based compensation	1,179	739
Restructuring and other charges	348	55
Amortization of intangibles	351	465
(Gains) losses on equity investments, net	(208)	(167)
Changes in assets and liabilities:		
Accounts receivable	80	286
Inventories	(366)	231
Accounts payable	(386)	(771)
Accrued compensation and benefits	(1,289)	(1,560)
Income taxes	(591)	1,344
Other assets and liabilities	(2,104)	(1,540)
Total adjustments	**(786)**	**983**
Net cash provided by (used for) operating activities	**(1,223)**	**(1,785)**
Cash flows provided by (used for) investing activities:		
Additions to property, plant, and equipment	(5,970)	(7,413)
Proceeds from capital-related government incentives	592	—
Purchases of short-term investments	(6,460)	(16,132)
Maturities and sales of short-term investments	9,598	14,173
Other investing	(323)	851
Net cash provided by (used for) investing activities	**(2,563)**	**(8,521)**
Cash flows provided by (used for) financing activities:		
Issuance of commercial paper, net of issuance costs	793	—
Repayment of commercial paper	—	(2,930)
Payments on finance leases	—	(15)
Partner contributions	423	449
Issuance of long-term debt, net of issuance costs	2,537	10,968
Proceeds from sales of common stock through employee equity incentive plans	626	659
Payment of dividends to stockholders	(529)	(1,512)
Other financing	(220)	(225)
Net cash provided by (used for) financing activities	**3,630**	**7,394**
Net increase (decrease) in cash and cash equivalents	**(156)**	**(2,912)**
Cash and cash equivalents, end of period	**$ 6,923**	**$ 8,232**
Supplemental disclosures:		
Acquisition of property, plant, and equipment included in accounts payable and accrued liabilities	$ 5,167	$ 4,711
Cash paid during the period for:		
Interest, net of capitalized interest	$ 540	$ 239
Income taxes, net of refunds	$ 315	$ 267

See accompanying notes.

Consolidated Condensed Statements of Stockholders' Equity

(In Millions, Except Per Share Amounts; Unaudited)	Common Stock and Capital in Excess of Par Value: Shares	Common Stock and Capital in Excess of Par Value: Amount	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Non-Controlling Interests	Total
Three Months Ended						
Balance as of December 30, 2023	**4,228**	**$ 36,649**	**$ (215)**	**$ 69,156**	**$ 4,375**	**$ 109,965**
Net income (loss)	—	—	—	(381)	(56)	(437)
Other comprehensive income (loss)	—	—	(327)	—	—	(327)
Net proceeds from partner contributions	—	—	—	—	423	423
Employee equity incentive plans and other	32	626	—	—	—	626
Share-based compensation	—	1,138	—	—	41	1,179
Restricted stock unit withholdings	(3)	(122)	—	(22)	—	(144)
Cash dividends declared ($0.13 per share of common stock)	—	—	—	(529)	—	(529)
Balance as of March 30, 2024	**4,257**	**$ 38,291**	**$ (542)**	**$ 68,224**	**$ 4,783**	**$ 110,756**
Balance as of December 31, 2022	**4,137**	**$ 31,580**	**$ (562)**	**$ 70,405**	**$ 1,863**	**$ 103,286**
Net income (loss)	—	—	—	(2,758)	(10)	(2,768)
Other comprehensive income (loss)	—	—	143	—	—	143
Net proceeds from partner contributions	—	—	—	—	449	449
Employee equity incentive plans and other	36	659	—	—	—	659
Share-based compensation	—	697	—	—	42	739
Restricted stock unit withholdings	(2)	(107)	—	38	—	(69)
Cash dividends declared ($0.49 per share of common stock)	—	—	—	(2,036)	—	(2,036)
Balance as of April 1, 2023	**4,171**	**$ 32,829**	**$ (419)**	**$ 65,649**	**$ 2,344**	**$ 100,403**

See accompanying notes.

Notes to Consolidated Condensed Financial Statements

Note 1 : Basis of Presentation

We prepared our interim Consolidated Condensed Financial Statements that accompany these notes in conformity with US GAAP, consistent in all material respects with those applied in our 2023 Form 10-K.

We have made estimates and judgments affecting the amounts reported in our Consolidated Condensed Financial Statements and the accompanying notes. The actual results that we experience may differ materially from our estimates. The interim financial information is unaudited, and reflects all normal adjustments that are, in our opinion, necessary to provide a fair statement of results for the interim periods presented. This report should be read in conjunction with our 2023 Form 10-K where we include additional information on our critical accounting estimates, policies, and the methods and assumptions used in our estimates.

Note 2 : Operating Segments

We previously announced the implementation of our internal foundry operating model, which took effect in the first quarter of 2024, and creates a foundry relationship between our Intel Products business (collectively CCG, DCAI, and NEX) and our Intel Foundry business. Intel Products consists substantially of design and development of CPUs and related solutions for third party customers. Intel Foundry consists substantially of process engineering, manufacturing, and foundry services groups that provide manufacturing, test, and assembly services to our Intel Products business and to third party customers. Both businesses utilize marketing, sales, and other support functions.

Our internal foundry model is a key component of our strategy and is designed to reshape our operational dynamics and drive greater transparency, accountability, and focus on costs and efficiency. We also previously announced our intent to operate Altera, an Intel Company (previously Intel's Programmable Solutions Group), as a standalone business, with segment reporting beginning in the first quarter of 2024. Altera was previously included in our DCAI segment results. As a result of these changes, we modified our segment reporting in the first quarter of 2024 to align to this new operating model. All prior period segment data has been retrospectively adjusted to reflect the way our Chief Operating Decision Maker (CODM) internally receives information and manages and monitors our operating segment performance starting in fiscal year 2024. There are no changes to our consolidated financial statements for any prior periods.

We organize our business as follows:

- Intel Products:
  - Client Computing Group (CCG)
  - Data Center and AI (DCAI)
  - Network and Edge (NEX)
- Intel Foundry
- All other
  - Altera
  - Mobileye
  - Other

CCG, DCAI, and Intel Foundry qualify as reportable operating segments. NEX, Altera, and Mobileye do not qualify as reportable operating segments; however, we have elected to disclose their results. When we enter into federal contracts, they are aligned to the sponsoring operating segment.

The accounting policies for our segment reporting are the same for Intel as a whole. A summary of the basis for which we report our operating segment revenues and operating margin is as follows:

Intel Products: CCG, DCAI, and NEX

- Segment revenue: consists of revenues from third party customers. The Intel Products operating segments represent a substantial majority of Intel consolidated revenue and are derived from our principal products that incorporate various components and technologies, including a microprocessor and chipset, a stand-alone SoC, or a multichip package, which are based on Intel architecture.
- Segment expenses: consists of intersegment charges for product manufacturing and related services from Intel Foundry, external foundry and other manufacturing, product development costs, allocated expenses as described below, and direct operating expenses.

Intel Foundry

- Segment revenue: consists substantially of intersegment product and services revenue for wafer fabrication and related products and services sold to Intel Products, Altera, and certain other Intel internal businesses. We recognize intersegment revenue when we satisfy performance obligations as evidenced by the transfer of control of Intel Foundry products and services to the Intel Products businesses, which is generally at the completion of wafer sorting and at the completion of assembly and test services. Intersegment sales are recorded at prices that are intended to approximate market pricing. Intel Foundry also includes certain third party foundry and assembly and test revenues from external customers that were $27 million in first three months of 2024 and $118 million in the first three months of 2023.
- Segment expenses: consists of direct expenses for technology development, product manufacturing and services provided by Intel Foundry to internal and external customers, allocated expenses as described below, and direct operating expenses. Direct expenses for product manufacturing includes excess capacity charges that were previously allocated primarily to CCG, DCAI, and NEX.

All other: Altera & Mobileye

- Segment revenue: consists of product revenues from third party customers. Altera revenue is derived from programmable semiconductors, primarily FPGAs, CPLDs, acceleration platforms, software, IP, and related products. Mobileye revenue is derived from advanced driver-assistance systems (ADAS) and autonomous driving technologies and solutions.
- Segment expenses: Altera expenses consist of intersegment charges for product manufacturing and related services from Intel Foundry, third party manufacturing, allocated expenses as described below, and direct operating expenses. Mobileye expenses consists of third party direct expenses for product manufacturing and related services for the manufacturing of Mobileye products and direct operating expenses.

Our "all other" category also consists of "other", which includes:

- results of operations from non-reportable segments not otherwise presented, and from start-up businesses that support our initiatives; and
- historical results of operations from divested businesses.

We allocate operating expenses from our sales and marketing group to the Intel Products operating segments, and allocate operating expenses from our finance and administration groups to all of our operating segments, except Mobileye. Previously, operating expense from all of these groups as well as manufacturing and engineering, were generally allocated to all the operating segments, except Mobileye.

We estimate that the substantial majority of our consolidated depreciation expense was incurred by Intel Foundry in the first three months of 2024 and in the first three months of 2023. Intel Foundry depreciation expense is substantially included in overhead cost pools and then combined with other costs, and subsequently absorbed into inventory as each product passes through the manufacturing process and is sold to Intel Products and other customers. As a result, it is impractical to determine the total depreciation expense included as a component of each Intel Products operating segment's operating income (loss) results.

We do not allocate to our operating segments corporate operating expenses that primarily consist of:

- restructuring and other charges;
- share-based compensation;
- certain impairment charges; and
- certain acquisition-related costs, including amortization and any impairment of acquisition-related intangibles and goodwill.

We do not allocate to our operating segments non-operating items such as:

- gains and losses from equity investments;
- interest and other income; and
- income taxes.

The CODM, who is our CEO, allocates resources to and assesses the performance of each operating segment using information about the operating segment's revenue and operating income (loss). Although the CODM uses operating income (loss) to evaluate the segments, operating costs included in one segment may benefit other segments. The measures regularly provided to and used by our CODM under our new operating model continue to evolve; currently, our CODM does not regularly review or receive discrete asset information by segment.

Intersegment eliminations: Intersegment sales and related gross margin on inventory recorded at the end of the period or sold through to third party customers is eliminated for consolidation purposes. The Intel Products operating segments and Intel Foundry are meant to reflect separate fabless semiconductor and foundry companies. Thus certain intersegment activity is captured within the intersegment eliminations upon consolidation and presented at the Intel consolidated level. This activity primarily relates to inventory reserves which are determined and recorded based on our accounting policies for Intel as a whole, but are only recorded by the Intel Products operating segments upon transfer of inventory from Intel Foundry. If a reserve is identified prior to the related inventory transferring to Intel Products, that reserve is presented as activity within the intersegment eliminations.

Reporting units and goodwill reallocation: As a result of modifying our segment reporting in the first quarter of 2024, we reallocated goodwill among our affected reporting units on a relative fair value basis. We performed a quantitative goodwill impairment assessment for each of our reporting units immediately before and after our business reorganization. We concluded based on our pre-reorganization impairment test that goodwill was not impaired. As a result of our post-reorganization impairment test, we recognized a non-cash goodwill impairment loss of $222 million in the first three months of 2024 related to our new Intel Foundry reporting unit as the estimated fair value of the new reporting unit was lower than the assigned carrying value, which now includes substantially all of our allocated property, plant, and equipment. The Intel Foundry reporting unit has no remaining goodwill. The fair value substantially exceeded the carrying value for all remaining reporting units tested as part of our post-reorganization impairment test.

Operating segment and consolidated net revenue and operating income (loss) for each period were as follows:

	Three Months Ended	
(In Millions)	**Mar 30, 2024**	**Apr 1, 2023**
Operating segment revenue:		
Intel Products:		
Client Computing Group		
Desktop	$ 2,461	$ 1,879
Notebook	4,681	3,407
Other	391	481
	7,533	**5,767**
Data Center and AI	**3,036**	**2,901**
Network and Edge	**1,364**	**1,489**
Total Intel Products revenue	**$ 11,933**	**$ 10,157**
Intel Foundry	**$ 4,369**	**$ 4,831**
All other		
Altera	342	816
Mobileye	239	458
Other	194	166
Total all other revenue	**775**	**1,440**
Total operating segment revenue	**$ 17,077**	**$ 16,428**
Intersegment eliminations	(4,353)	(4,713)
Total net revenue	**$ 12,724**	**$ 11,715**
Segment operating income (loss):		
Intel Products:		
Client Computing Group	**$ 2,645**	**$ 1,180**
Data Center and AI	**482**	**22**
Network and Edge	**184**	**(69)**
Total Intel Products operating income (loss)	**$ 3,311**	**$ 1,133**
Intel Foundry	**$ (2,474)**	**$ (2,360)**
All Other		
Altera	(39)	290
Mobileye	(68)	123
Other	(105)	(66)
Total all other operating income (loss)	**(212)**	**347**
Total segment operating income (loss)	**$ 625**	**$ (880)**
Intersegment eliminations	494	456
Corporate unallocated expenses	(2,188)	(1,044)
Total operating income (loss)	**$ (1,069)**	**$ (1,468)**

Corporate Unallocated Expenses

Corporate unallocated expenses represent costs incurred that are not directly attributed to an operating segment. The nature of these expenses may vary, but primarily consist of restructuring and other charges, share-based compensation, certain impairment charges, and certain acquisition-related costs.

(In Millions)	Three Months Ended Mar 30, 2024	Three Months Ended Apr 1, 2023
Acquisition-related adjustments	$ (265)	$ (371)
Share-based compensation	(1,179)	(739)
Restructuring and other charges	(348)	(64)
Other	(396)	130
Total corporate unallocated expenses	**$ (2,188)**	**$ (1,044)**

Note 3 : Non-Controlling Interests

(In Millions)	Mar 30, 2024 Non-Controlling Interests	Mar 30, 2024 Non-Controlling Ownership %	Dec 30, 2023 Non-Controlling Interests	Dec 30, 2023 Non-Controlling Ownership %
Arizona Fab LLC	$ 2,760	49 %	$ 2,359	49 %
Mobileye	1,854	12 %	1,838	12 %
IMS Nanofabrication	169	32 %	178	32 %
Non-controlling interests	**$ 4,783**		**$ 4,375**	

Semiconductor Co-Investment Program

In 2022, we closed a transaction with Brookfield Asset Management (Brookfield) resulting in the formation of Arizona Fab LLC (Arizona Fab). We consolidate the results of Arizona Fab, a VIE, into our consolidated financial statements because we are the primary beneficiary. Generally, contributions will be made to, and distributions will be received from Arizona Fab based on both parties' proportional ownership. We will be the sole operator and main beneficiary of two new chip factories that will be constructed by Arizona Fab, and we will have the right to purchase 100% of the related factory output. Once production commences, we will be required to operate Arizona Fab at minimum production levels measured in wafer starts per week and will be required to limit excess inventory held on site or we will be subject to certain penalties.

We have an unrecognized commitment to fund our respective share of the total construction costs of Arizona Fab of $29.0 billion.

As of March 30, 2024, substantially all of the assets of Arizona Fab consisted of property, plant, and equipment. The assets held by Arizona Fab, which can be used only to settle obligations of the VIE and are not available to us, were $5.6 billion as of March 30, 2024 ($4.8 billion as of December 30, 2023).

Mobileye

In 2022, Mobileye completed its IPO and certain other equity financing transactions. During 2023, we converted 38.5 million of our Mobileye Class B shares into Class A shares, representing 5% of Mobileye's outstanding capital stock, and subsequently sold the Class A shares for $42 per share as part of a secondary offering, receiving net proceeds of $1.6 billion and increasing our capital in excess of par value by $663 million, net of tax. We continue to consolidate the results of Mobileye into our consolidated financial statements.

IMS Nanofabrication

In 2023, we closed agreements to sell a combined 32% minority stake in our IMS business, a business within our Intel Foundry operating segment —including a 20% stake to Bain Capital and a 10% stake to Taiwan Semiconductor Manufacturing Company. Net proceeds resulting from the minority stake sales totaled $1.4 billion, and our capital in excess of par value increased by $958 million, net of tax. We continue to consolidate the results of IMS into our consolidated financial statements.

Note 4 : Earnings (Loss) Per Share

We computed basic earnings (loss) per share of common stock based on the weighted average number of shares of common stock outstanding during the period. We computed diluted earnings (loss) per share of common stock based on the weighted average number of shares of common stock outstanding plus potentially dilutive shares of common stock outstanding during the period.

	Three Months Ended	
(In Millions, Except Per Share Amounts)	**Mar 30, 2024**	**Apr 1, 2023**
Net income (loss)	**$ (437)**	**$ (2,768)**
Less: Net income (loss) attributable to non-controlling interests	(56)	(10)
Net income (loss) attributable to Intel	**(381)**	**(2,758)**
Weighted average shares of common stock outstanding—basic	**4,242**	**4,154**
Weighted average shares of common stock outstanding—diluted	**4,242**	**4,154**
Earnings (loss) per share attributable to Intel—basic	**$ (0.09)**	**$ (0.66)**
Earnings (loss) per share attributable to Intel—diluted	**$ (0.09)**	**$ (0.66)**

Potentially dilutive shares of common stock from employee equity incentive plans are determined by applying the treasury stock method to the assumed exercise of outstanding stock options, the assumed vesting of outstanding RSUs, and the assumed issuance of common stock under the stock purchase plan.

Due to our net losses in the three months ended March 30, 2024 and April 1, 2023, the assumed exercise of outstanding stock options, the assumed vesting of outstanding RSUs, and the assumed issuance of common stock under the stock purchase plan had an anti-dilutive effect on diluted loss per share for the period and were excluded from the computation of diluted loss per share.

Note 5 : Other Financial Statement Details

Accounts Receivable

We sell certain of our accounts receivable on a non-recourse basis to third-party financial institutions. We record these transactions as sales of receivables and present cash proceeds as *cash provided by operating activities* in the Consolidated Condensed Statements of Cash Flows. Accounts receivable sold under non-recourse factoring arrangements were $500 million during the first three months of 2024 ($500 million in the first three months of 2023). After the sale of our accounts receivable, we expect to collect payment from the customers and remit it to the third-party financial institution.

Inventories

(In Millions)	**Mar 30, 2024**	**Dec 30, 2023**
Raw materials	$ 1,209	$ 1,166
Work in process	6,560	6,203
Finished goods	3,725	3,758
Total inventories	**$ 11,494**	**$ 11,127**

Other Accrued Liabilities

Other accrued liabilities include deferred compensation of $2.9 billion as of March 30, 2024 ($2.9 billion as of December 30, 2023).

Interest and Other, Net

	Three Months Ended	
(In Millions)	**Mar 30, 2024**	**Apr 1, 2023**
Interest income	$ 323	$ 334
Interest expense	(258)	(193)
Other, net	80	—
Total interest and other, net	**$ 145**	**$ 141**

Interest expense is net of $363 million of interest capitalized in the first three months of 2024 ($363 million in the first three months of 2023).

Note 6 : Restructuring and Other Charges

(In Millions)	Three Months Ended Mar 30, 2024	Apr 1, 2023
Employee severance and benefit arrangements	$ 129	$ (39)
Litigation charges and other	—	77
Asset impairment charges	219	26
Total restructuring and other charges	**$ 348**	**$ 64**

Employee severance and benefit arrangements includes a charge of $129 million in the first quarter of 2024 relating to actions taken to streamline operations and to reduce costs. We expect these actions to be substantially completed by the third quarter of 2024, but this is subject to change. Any changes to the estimates or timing will be reflected in our results of operations.

Asset impairment charges includes a goodwill impairment loss of $222 million in the first quarter of 2024 related to our new Intel Foundry reporting unit. Refer to "Note 2: Operating Segments" within Notes to Consolidated Condensed Financial Statements for further information on our business reorganization and goodwill impairment.

Note 7 : Income Taxes

(In Millions)	Three Months Ended Mar 30, 2024	Apr 1, 2023
Income (loss) before taxes	$ (719)	$ (1,158)
Provision for (benefit from) taxes	$ (282)	$ 1,610
Effective tax rate	39.2 %	(139.0)%

Our provision for, or benefit from, income taxes for an interim period has historically been determined using an estimated annual effective tax rate, adjusted for discrete items, if any. Under certain circumstances where we are unable to make a reliable estimate of the annual effective tax rate, we use the actual effective tax rate for the year-to-date period. During the first quarter of 2024, we used the actual effective tax rate approach due to the variability of the rate as a result of fluctuations in forecasted income and the effects of being taxed in multiple tax jurisdictions.

Note 8 : Investments

Short-term Investments

Short-term investments include marketable debt investments in corporate debt, government debt, and financial institution instruments, and are recorded within *cash and cash equivalents* and *short-term investments* on the Consolidated Condensed Balance Sheets. Government debt includes instruments such as non-US government bills and bonds and US agency securities. Financial institution instruments include instruments issued or managed by financial institutions in various forms, such as commercial paper, fixed- and floating-rate bonds, money market fund deposits, and time deposits. As of March 30, 2024, and December 30, 2023, substantially all time deposits were issued by institutions outside the US.

For certain of our marketable debt investments, we economically hedge market risks at inception with a related derivative instrument or the marketable debt investment itself is used to economically hedge currency exchange rate risk from remeasurement. These hedged investments are reported at fair value with gains or losses from the investments and the related derivative instruments recorded in *interest and other, net*. The fair value of our hedged investments was $13.8 billion as of March 30, 2024 ($17.1 billion as of December 30, 2023). For hedged investments still held at the reporting date, we recorded net losses of $307 million in the first three months of 2024 ($90 million of net gains in the first three months of 2023). We recorded net gains on the related derivatives of $345 million in the first three months of 2024 ($102 million of net losses in the first three months of 2023).

Our remaining unhedged marketable debt investments are reported at fair value, with unrealized gains or losses, net of tax, recorded in *accumulated other comprehensive income (loss)* and realized gains or losses recorded in *interest and other, net*. The adjusted cost of our unhedged investments was $4.0 billion as of March 30, 2024 ($4.7 billion as of December 30, 2023), which approximated the fair value for these periods.

The fair value of marketable debt investments, by contractual maturity, as of March 30, 2024, was as follows:

(In Millions)	Fair Value
Due in 1 year or less	$ 5,579
Due in 1–2 years	2,457
Due in 2–5 years	6,915
Due after 5 years	433
Instruments not due at a single maturity date[1]	2,460
Total	**$ 17,844**

[1] *Instruments not due at a single maturity date is comprised of money market fund deposits, which are classified as either short-term investments or cash and cash equivalents.*

Equity Investments

(In Millions)	Mar 30, 2024	Dec 30, 2023
Marketable equity securities[1]	$ 1,471	$ 1,194
Non-marketable equity securities	4,664	4,630
Equity method investments	4	5
Total	**$ 6,139**	**$ 5,829**

[1] *Approximately 90% of our marketable equity securities are subject to trading-volume or market-based restrictions, which limit the number of shares we may sell in a specified period of time, impacting our ability to liquidate these investments. Certain of the trading volume restrictions generally apply for as long as we own more than 1% of the outstanding shares. Market-based restrictions result from the rules of the respective exchange.*

The components of *gains (losses) on equity investments, net* for each period were as follows:

	Three Months Ended	
(In Millions)	Mar 30, 2024	Apr 1, 2023
Ongoing mark-to-market adjustments on marketable equity securities	$ (91)	$ 188
Observable price adjustments on non-marketable equity securities	24	10
Impairment charges	(69)	(36)
Sale of equity investments and other[1]	341	7
Total gains (losses) on equity investments, net	**$ 205**	**$ 169**

[1] *Sale of equity investments and other includes initial fair value adjustments recorded upon a security becoming marketable, realized gains (losses) on sales of non-marketable equity investments and equity method investments, and our share of equity method investee gains (losses) and distributions.*

Note 9 : Divestitures

NAND Memory Business

The NAND memory business included our NAND memory technology and manufacturing business (the NAND OpCo Business), which we deconsolidated upon closing the first phase of our sale agreement with SK hynix Inc (SK hynix) on December 29, 2021. We have a receivable within *other current assets* for the remaining proceeds of $2.0 billion, which remains outstanding as of March 30, 2024 and will be received upon the second closing of the transaction, expected to be in March 2025.

The wafer manufacturing and sale agreement includes incentives and penalties that are contingent on the cost of operation and output of the NAND OpCo Business. These incentives and penalties present a maximum exposure of up to $500 million annually, and $1.5 billion in the aggregate. We are currently in negotiations with SK hynix to update the operating plan of the NAND OpCo Business, which may impact the metrics associated with the incentives and penalties and our expectations of the performance of the NAND OpCo Business against those metrics.

We were reimbursed for costs that we incurred on behalf of the NAND OpCo Business for corporate function services, which include human resources, information technology, finance, supply chain, and other compliance requirements. We recorded a receivable related to these reimbursable costs due from the NAND OpCo Business, a deconsolidated entity, of $150 million within *other current assets* as of March 30, 2024 ($145 million recorded as of December 30, 2023).

Note 10 : Borrowings

In the first quarter of 2024, we issued a total of $2.6 billion aggregate principal amount of senior notes. We also expanded both our 5-year $5.0 billion revolving credit facility agreement and our 364-day $5.0 billion credit facility agreement, to $7.0 billion and $8.0 billion, respectively, and the maturity dates were extended by one year to February 2029 and January 2025, respectively. The revolving credit facilities had no borrowings outstanding as of March 30, 2024.

We have an ongoing authorization from our Board of Directors to borrow up to $10.0 billion under our commercial paper program. We had $793 million of commercial paper outstanding as of March 30, 2024 (no commercial paper outstanding as of December 30, 2023).

Our senior fixed rate notes pay interest semiannually. We may redeem the fixed rate notes prior to their maturity at our option at specified redemption prices and subject to certain restrictions. The obligations under our senior fixed rate notes rank equally in the right of payment with all of our other existing and future senior unsecured indebtedness and effectively rank junior to all liabilities of our subsidiaries.

Note 11 : Fair Value

Assets and Liabilities Measured and Recorded at Fair Value on a Recurring Basis

	Mar 30, 2024				Dec 30, 2023			
	Fair Value Measured and Recorded at Reporting Date Using				Fair Value Measured and Recorded at Reporting Date Using			
(In Millions)	**Level 1**	**Level 2**	**Level 3**	**Total**	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets								
Cash equivalents:								
Corporate debt	$ —	$ 231	$ —	$ 231	$ —	$ 769	$ —	$ 769
Financial institution instruments[1]	2,438	787	—	3,225	2,241	835	—	3,076
Reverse repurchase agreements	—	2,370	—	2,370	—	2,554	—	2,554
Short-term investments:								
Corporate debt	—	6,298	—	6,298	—	6,951	—	6,951
Financial institution instruments[1]	22	3,777	—	3,799	33	4,215	—	4,248
Government debt[2]	—	4,291	—	4,291	—	6,756	—	6,756
Other current assets:								
Derivative assets	34	739	—	773	366	809	—	1,175
Marketable equity securities	1,471	—	—	1,471	1,194	—	—	1,194
Other long-term assets:								
Derivative assets	—	6	—	6	—	21	—	21
Total assets measured and recorded at fair value	**$ 3,965**	**$ 18,499**	**$ —**	**$ 22,464**	**$ 3,834**	**$ 22,910**	**$ —**	**$ 26,744**
Liabilities								
Other accrued liabilities:								
Derivative liabilities	$ —	$ 375	$ 118	$ 493	$ —	$ 541	$ 99	$ 640
Other long-term liabilities:								
Derivative liabilities	—	611	—	611	—	479	—	479
Total liabilities measured and recorded at fair value	**$ —**	**$ 986**	**$ 118**	**$ 1,104**	**$ —**	**$ 1,020**	**$ 99**	**$ 1,119**

[1] *Level 1 investments consist of money market funds. Level 2 investments consist primarily of certificates of deposit, time deposits, commercial paper, notes and bonds issued by financial institutions.*
[2] *Level 2 investments consist primarily of non-US government debt.*

Assets Measured and Recorded at Fair Value on a Non-Recurring Basis

Our non-marketable equity securities, equity method investments, and certain non-financial assets—such as intangible assets, goodwill, and property, plant, and equipment—are recorded at fair value only if an impairment or observable price adjustment is recognized in the current period. If an observable price adjustment or impairment is recognized on our non-marketable equity securities during the period, we classify these assets as Level 3.

Financial Instruments Not Recorded at Fair Value on a Recurring Basis

Financial instruments not recorded at fair value on a recurring basis include non-marketable equity securities and equity method investments that have not been remeasured or impaired in the current period, grants receivable, certain other receivables, and issued debt. We classify the fair value of grants receivable as Level 2. The estimated fair value of these financial instruments approximates their carrying value. The aggregate carrying value of grants receivable as of March 30, 2024 was $666 million (the aggregate carrying value as of December 30, 2023 was $559 million).

We classify the fair value of issued debt (excluding any commercial paper) as Level 2. The fair value of our issued debt was $48.7 billion as of March 30, 2024 ($47.6 billion as of December 30, 2023).

Note 12 : Derivative Financial Instruments

Volume of Derivative Activity

Total gross notional amounts for outstanding derivatives (recorded at fair value) at the end of each period were as follows:

(In Millions)	Mar 30, 2024	Dec 30, 2023
Foreign currency contracts	$ 27,942	$ 30,064
Interest rate contracts	18,611	18,363
Other	2,507	2,103
Total	**$ 49,060**	**$ 50,530**

The total notional amount of outstanding pay-variable, receive-fixed interest rate swaps was $12.0 billion as of March 30, 2024 and December 30, 2023.

Fair Value of Derivative Instruments in the Consolidated Condensed Balance Sheets

	Mar 30, 2024		Dec 30, 2023	
(In Millions)	Assets[1]	Liabilities[2]	Assets[1]	Liabilities[2]
Derivatives designated as hedging instruments:				
Foreign currency contracts[3]	$ 69	$ 307	$ 255	$ 142
Interest rate contracts	—	723	—	578
Total derivatives designated as hedging instruments	**$ 69**	**$ 1,030**	**$ 255**	**$ 720**
Derivatives not designated as hedging instruments:				
Foreign currency contracts[3]	$ 391	$ 65	$ 314	$ 363
Interest rate contracts	285	9	261	36
Equity contracts	34	—	366	—
Total derivatives not designated as hedging instruments	**$ 710**	**$ 74**	**$ 941**	**$ 399**
Total derivatives	**$ 779**	**$ 1,104**	**$ 1,196**	**$ 1,119**

[1] *Derivative assets are recorded as other assets, current and long-term.*
[2] *Derivative liabilities are recorded as other liabilities, current and long-term.*
[3] *A substantial majority of these instruments mature within 12 months.*

Amounts Offset in the Consolidated Condensed Balance Sheets

Agreements subject to master netting arrangements with various counterparties, and cash and non-cash collateral posted under such agreements at the end of each period were as follows:

	Mar 30, 2024					
				Gross Amounts Not Offset in the Balance Sheet		
(In Millions)	Gross Amounts Recognized	Gross Amounts Offset in the Balance Sheet	Net Amounts Presented in the Balance Sheet	Financial Instruments	Cash and Non-Cash Collateral Received or Pledged	Net Amount
Assets:						
Derivative assets subject to master netting arrangements	$ 632	$ —	$ 632	$ (350)	$ (282)	$ —
Reverse repurchase agreements	2,370	—	2,370	—	(2,370)	—
Total assets	**$ 3,002**	**$ —**	**$ 3,002**	**$ (350)**	**$ (2,652)**	**$ —**
Liabilities:						
Derivative liabilities subject to master netting arrangements	$ 1,097	$ —	$ 1,097	$ (350)	$ (620)	$ 127
Total liabilities	**$ 1,097**	**$ —**	**$ 1,097**	**$ (350)**	**$ (620)**	**$ 127**

	Dec 30, 2023					
				Gross Amounts Not Offset in the Balance Sheet		
(In Millions)	Gross Amounts Recognized	Gross Amounts Offset in the Balance Sheet	Net Amounts Presented in the Balance Sheet	Financial Instruments	Cash and Non-Cash Collateral Received or Pledged	Net Amount
Assets:						
Derivative assets subject to master netting arrangements	$ 1,047	$ —	$ 1,047	$ (617)	$ (430)	$ —
Reverse repurchase agreements	2,554	—	2,554	—	(2,554)	—
Total assets	**$ 3,601**	**$ —**	**$ 3,601**	**$ (617)**	**$ (2,984)**	**$ —**
Liabilities:						
Derivative liabilities subject to master netting arrangements	$ 1,111	$ —	$ 1,111	$ (617)	$ (399)	$ 95
Total liabilities	**$ 1,111**	**$ —**	**$ 1,111**	**$ (617)**	**$ (399)**	**$ 95**

We obtain and secure available collateral from counterparties against obligations, including securities lending transactions and reverse repurchase agreements, when we deem it appropriate.

Derivatives in Cash Flow Hedging Relationships

The before-tax net gains or losses attributed to cash flow hedges recognized in *other comprehensive income (loss)* were $431 million net loss in the first three months of 2024 ($53 million net gains in the first three months of 2023). Substantially all of our cash flow hedges were foreign currency contracts for all periods presented.

During the first three months of 2024 and 2023, the amounts excluded from effectiveness testing were insignificant.

Derivatives in Fair Value Hedging Relationships

The effects of derivative instruments designated as fair value hedges, recognized in *interest and other, net* for each period were as follows:

(In Millions)	Gains (Losses) on Derivatives Recognized in Consolidated Condensed Statements of Income — Three Months Ended Mar 30, 2024	Apr 1, 2023
Interest rate contracts	$ (144)	$ 192
Hedged items	144	(192)
Total	**$ —**	**$ —**

The amounts recorded on the Consolidated Condensed Balance Sheets related to cumulative basis adjustments for fair value hedges for each period were as follows:

Line Item in the Consolidated Condensed Balance Sheets in Which the Hedged Item is Included	Carrying Amount of the Hedged Item Assets/(Liabilities)		Cumulative Amount of Fair Value Hedging Adjustment Included in the Carrying Amount Assets/(Liabilities)	
(In Millions)	Mar 30, 2024	Dec 30, 2023	Mar 30, 2024	Dec 30, 2023
Long-term debt	$ (11,275)	$ (11,419)	$ 722	$ 578

Derivatives Not Designated as Hedging Instruments

The effects of derivative instruments not designated as hedging instruments on the Consolidated Condensed Statements of Income for each period were as follows:

(In Millions)	Location of Gains (Losses) Recognized in Income on Derivatives	Three Months Ended Mar 30, 2024	Apr 1, 2023
Foreign currency contracts	Interest and other, net	$ 346	$ 1
Interest rate contracts	Interest and other, net	117	(34)
Other	Various	137	115
Total		**$ 600**	**$ 82**

Note 13 : Contingencies

Legal Proceedings

We are regularly party to various ongoing claims, litigation, and other proceedings, including those noted in this section. We have accrued a charge of $1.0 billion related to litigation involving VLSI and a charge of $401 million related to an EC-imposed fine, both as described below. Excluding the VLSI claims, management at present believes that the ultimate outcome of these proceedings, individually and in the aggregate, will not materially harm our financial position, results of operations, cash flows, or overall trends; however, legal proceedings and related government investigations are subject to inherent uncertainties, and unfavorable rulings, excessive verdicts, or other events could occur. Unfavorable resolutions could include substantial monetary damages, fines, or penalties. Certain of these outstanding matters include speculative, substantial, or indeterminate monetary awards. In addition, in matters for which injunctive relief or other conduct remedies are sought, unfavorable resolutions could include an injunction or other order prohibiting us from selling one or more products at all or in particular ways, precluding particular business practices, or requiring other remedies. An unfavorable outcome may result in a material adverse impact on our business, results of operations, financial position, and overall trends. We might also conclude that settling one or more such matters is in the best interests of our stockholders, employees, and customers, and any such settlement could include substantial payments. Unless specifically described below, we have not concluded that settlement of any of the legal proceedings noted in this section is appropriate at this time.

European Commission Competition Matter

In 2009, the EC found that we had used unfair business practices to persuade customers to buy microprocessors in violation of Article 82 of the EC Treaty (later renumbered Article 102) and Article 54 of the European Economic Area Agreement. In general, the EC found that we violated Article 82 by offering alleged “conditional rebates and payments” that required customers to purchase all or most of their x86 microprocessors from us and by making alleged “payments to prevent sales of specific rival products.” The EC ordered us to end the alleged infringement referred to in its decision and imposed a €1.1 billion fine, which we paid in the third quarter of 2009.

We appealed the EC decision to the European Court of Justice in 2014, after the General Court (then called the Court of First Instance) rejected our appeal of the EC decision in its entirety. In September 2017, the Court of Justice sent the case back to the General Court to examine whether the rebates at issue were capable of restricting competition. In January 2022, the General Court annulled the EC’s 2009 findings against us regarding rebates, as well as the €1.1 billion fine imposed on Intel, which was returned to us in February 2022. The General Court’s January 2022 decision did not annul the EC’s 2009 finding that we made payments to prevent sales of specific rival products.

In April 2022 the EC appealed the General Court’s decision to the Court of Justice. In addition, in September 2023 the EC imposed a €376 million ($401 million) fine against us based on its finding that we made payments to prevent sales of specific rival products. We have appealed the EC’s decision. We have accrued a charge for the fine and are unable to make a reasonable estimate of the potential loss or range of losses in excess of this amount given the procedural posture and the nature of these proceedings.

In a related matter, in April 2022 we filed applications with the General Court seeking an order requiring the EC to pay us approximately €593 million in default interest on the original €1.1 billion fine that was held by the EC for 12 years, which applications have been stayed pending the EC’s appeal of the General Court’s January 2022 decision.

Litigation Related to Security Vulnerabilities

In June 2017, a Google research team notified Intel and other companies that it had identified security vulnerabilities, the first variants of which are now commonly referred to as “Spectre” and “Meltdown,” that affect many types of microprocessors, including our products. As is standard when findings like these are presented, we worked together with other companies in the industry to verify the research and develop and validate software and firmware updates for impacted technologies. In January 2018, information on the security vulnerabilities was publicly reported, before software and firmware updates to address the vulnerabilities were made widely available.

As of April 24, 2024, consumer class action lawsuits against us were pending in the US and Canada. The plaintiffs, who purport to represent various classes of purchasers of our products, generally claim to have been harmed by our actions and/or omissions in connection with Spectre, Meltdown, and other variants of this class of security vulnerabilities that have been identified since 2018, and assert a variety of common law and statutory claims seeking monetary damages and equitable relief. In the US, class action suits filed in various jurisdictions between 2018 and 2021 were consolidated for all pretrial proceedings in the US District Court for the District of Oregon, which entered final judgment in favor of Intel in July 2022 based on plaintiffs’ failure to plead a viable claim. The Ninth Circuit Court of Appeals affirmed the district court’s judgment in November 2023, ending the litigation. In November 2023, new plaintiffs filed a consumer class action complaint in the US District Court for the Northern District of California with respect to a further vulnerability variant disclosed in August 2023 and commonly referred to as “Downfall.” We moved to dismiss that complaint in January 2024. In Canada, an initial status conference has not yet been scheduled in one case relating to Spectre and Meltdown pending in the Superior Court of Justice of Ontario, and a stay of a second case pending in the Superior Court of Justice of Quebec is in effect. In a class action relating to Spectre and Meltdown previously pending in Argentina, plaintiffs’ appeal of a May 2023 order dismissing their complaint for lack of standing was denied in February 2024, ending the lawsuit. Additional lawsuits and claims may be asserted seeking monetary damages or other related relief. Given the procedural posture and the nature of these cases, including that the pending proceedings are in the early stages, that alleged damages have not been specified, that uncertainty exists as to the likelihood of a class or classes being certified or the ultimate size of any class or classes if certified, and that there are significant factual and legal issues to be resolved, we are unable to make a reasonable estimate of the potential loss or range of losses, if any, that might arise from these matters.

Litigation Related to 7nm Product Delay Announcement

Multiple securities class action lawsuits were filed in the US District Court for the Northern District of California against us and certain officers following our July 2020 announcement of 7nm product delays. The court consolidated the lawsuits and appointed lead plaintiffs in October 2020, and in January 2021 plaintiffs filed a consolidated complaint. Plaintiffs purport to represent all persons who purchased or otherwise acquired our common stock from October 25, 2019 through October 23, 2020, and they generally allege that defendants violated the federal securities laws by making false or misleading statements about the timeline for 7nm products. In March 2023, the district court granted the defendants’ motion to dismiss the consolidated complaint, and in April 2023 entered judgment. Plaintiffs appealed, and on April 19, 2024 the Ninth Circuit affirmed the judgment; the Ninth Circuit’s ruling is subject to appeal. Given the procedural posture and the nature of the case, including that it is in the early stages, that alleged damages have not been specified, that uncertainty exists as to the likelihood of a class being certified or the ultimate size of any class if certified, and that there are significant factual and legal issues to be resolved, we are unable to make a reasonable estimate of the potential loss or range of losses, if any, that might arise from the matter. In July 2021, we introduced a new process node naming structure, and the 7nm process is now called Intel 4.

Litigation Related to Patent and IP Claims

We have had IP infringement lawsuits filed against us, including but not limited to those discussed below. Most involve claims that certain of our products, services, and technologies infringe others' IP rights. Adverse results in these lawsuits may include awards of substantial fines and penalties, costly royalty or licensing agreements, or orders preventing us from offering certain features, functionalities, products, or services. As a result, we may have to change our business practices, and develop non-infringing products or technologies, which could result in a loss of revenue for us and otherwise harm our business. In addition, certain agreements with our customers require us to indemnify them against certain IP infringement claims, which can increase our costs as a result of defending such claims, and may require that we pay significant damages, accept product returns, or supply our customers with non-infringing products if there were an adverse ruling in any such claims. In addition, our customers and partners may discontinue the use of our products, services, and technologies, as a result of injunctions or otherwise, which could result in loss of revenue and adversely affect our business.

VLSI Technology LLC v. Intel

In October 2017, VLSI Technology LLC (VLSI) filed a complaint against us in the US District Court for the Northern District of California alleging that various Intel FPGA and processor products infringe eight patents VLSI acquired from NXP Semiconductors, N.V. (NXP). Intel prevailed on all eight patents and the court entered final judgment in April 2024. Further appeals are possible. In April 2019, VLSI filed three infringement suits against us in the US District Court for the Western District of Texas accusing various of our processors of infringement of eight additional patents it had acquired from NXP:

- The first Texas case went to trial in February 2021, and the jury awarded VLSI $1.5 billion for literal infringement of one patent and $675 million for infringement of another patent under the doctrine of equivalents. In April 2022, the court entered final judgment, awarding VLSI $2.1 billion in damages and approximately $162.3 million in pre-judgment and post-judgment interest. We appealed the judgment to the Federal Circuit Court of Appeals, including the court's rejection of Intel's claim to have a license from Fortress Investment Group's acquisition of Finjan. The Federal Circuit Court heard oral argument in October 2023. In December 2023, the Federal Circuit reversed the finding of infringement as to the patent for which VLSI was awarded $675 million. The Federal Circuit affirmed the finding of infringement as to the patent for which VLSI had been awarded $1.5 billion, but vacated the damages award and sent the case back to the trial court for further damages proceedings on that patent. The Federal Circuit also ruled that Intel can advance the defense that it is licensed to VLSI's patents. In December 2021 and January 2022 the Patent Trial and Appeal Board (PTAB) instituted Inter Partes Reviews (IPR) on the claims found to have been infringed in the first Texas case, and in May and June 2023 found all of those claims unpatentable; VLSI has appealed the PTAB's decision. In March 2024, Intel filed a motion to stay the case pending appeals of the IPRs. In April 2024, Intel moved to add the defense that it is licensed to VLSI's patents.
- The second Texas case went to trial in April 2021, and the jury found that we do not infringe the asserted patents. VLSI had sought approximately $3.0 billion for alleged infringement, plus enhanced damages for willful infringement. The court has not yet entered final judgment.
- The third Texas case went to trial in November 2022, with VLSI asserting one remaining patent. The jury found the patent valid and infringed, and awarded VLSI approximately $949 million in damages, plus interest and a running royalty. The court has not yet entered final judgment. In February 2023, we filed motions for a new trial and for judgment as a matter of law notwithstanding the verdict on various grounds. Further appeals are possible. In April 2024, Intel moved to add the defense that it is licensed to VLSI's patents.

In May 2019, VLSI filed a case in Shenzhen Intermediate People's Court against Intel, Intel (China) Co., Ltd., Intel Trading (Shanghai) Co., Ltd., and Intel Products (Chengdu) Co., Ltd. VLSI asserted one patent against certain Intel Core processors. Defendants filed an invalidation petition in October 2019 with the China National Intellectual Property Administration (CNIPA) which held a hearing in September 2021. The Shenzhen court held trial proceedings in July 2021, and September 2023. VLSI sought an injunction as well as RMB 1.3 million in costs and expenses, but no damages. In September 2023, the CNIPA invalidated every claim of the asserted patent. In November 2023, the trial court dismissed VLSI's case.

In May 2019, VLSI filed a case in Shanghai Intellectual Property Court against Intel (China) Co., Ltd., Intel Trading (Shanghai) Co., Ltd., and Intel Products (Chengdu) Co., Ltd. asserting one patent against certain Intel core processors. The court held a trial hearing in December 2020, where VLSI requested expenses (RMB 300 thousand) and an injunction. In December 2022, we filed a petition to invalidate the patent at issue. The court held a second trial hearing in May 2022, and in October 2023, issued a decision finding no infringement and dismissing all claims. In November 2023, VLSI appealed the finding of non-infringement.

As of March 30, 2024, we have accrued a charge of approximately $1.0 billion related to the VLSI litigation. While we dispute VLSI's claims and intend to vigorously defend against them, we are unable to make a reasonable estimate of losses in excess of recorded amounts given recent developments and future proceedings.

R2 Semiconductor Patent Litigation

In November 2022, R2 Semiconductor, Inc. (R2) filed a lawsuit in the High Court of Justice in the UK against Intel Corporation (UK) Limited and Intel Corporation, and a lawsuit in the Dusseldorf Regional Court in Germany against Intel Deutschland GmbH and certain Intel customers. R2 asserts one European patent is infringed by Intel's Ice Lake, Tiger Lake, Alder Lake and Ice Lake Server (Xeon) processors (the accused products), and customer servers and laptops that contain those processors. R2 seeks an injunction in both actions prohibiting the sale and requiring the recall of the alleged infringing products. Intel is indemnifying its customers in the German lawsuit.

Intel disputes R2's claims and intends to defend the lawsuits vigorously. In December 2022, Intel responded in the UK action that the asserted patent is not infringed and that the patent is invalid. In April 2023, defendants filed statements of defense in the German action that the asserted patent is not infringed and that an injunction would be a disproportionate remedy. In May 2023, defendants also filed a nullity action in the German Federal Patent Court on the ground that the asserted patent is invalid.

In December 2023, the German Federal Patent Court issued a preliminary opinion finding R2's patent valid. The German Federal Patent Court's final decision on invalidity is expected in October 2024. In December 2023, the court in Dusseldorf held a trial on the issue of infringement. In February 2024, the court found Intel's processors infringe and issued an injunction and recall order against Intel and its customers. R2 has not yet sought to enforce the order. Intel has appealed the decision. In April 2024, Intel also filed a complaint with the Constitutional Court seeking a stay and a reversal of the finding of infringement and filed additional evidence with the appeals court to demonstrate that it does not infringe R2's patent.

In March 2024, Intel filed an action in Milan, Italy seeking an order that it does not infringe R2's patent.

In April 2024, R2 filed an action against Intel and its customers Dell, HP, and HPE for patent infringement in Paris, France. Intel and its customers have filed a nullity action against the patent in France.

Trial in the UK matter is scheduled for April 2024.

We are unable to make a reasonable estimate of the potential loss or range of losses, if any, that might arise from these lawsuits and the injunction and order of the Dusseldorf Regional Court due to the procedural posture and the nature of these cases, including that there are significant factual and legal issues to be resolved and that uncertainty exists as to, among other things: (i) whether and, if so, at what point in time the order in Germany may take effect, including as a result of a potential stay; (ii) whether and, if so, at what point we may be successful in appealing the decisions in Germany as to infringement and validity, (iii) the extent to which we and our customers are able to mitigate the impact of the injunction of the Dusseldorf Regional Court, (iv) the costs of recalling products if the recall order of the Dusseldorf Regional Court is enforced, (v) the extent to which R2 may be awarded damages, and (vi) the extent to which we may agree to compensate our customers for losses in connection with the injunction and recall and any potential damage award.

Key Terms

We use terms throughout our document that are specific to Intel or that are abbreviations that may not be commonly known or used. Below is a list of these terms used in our document.

Term	Definition
5G	The fifth-generation mobile network, which brings dramatic improvements in network speeds and latency, and which we view as a transformative technology and opportunity for many industries
ADAS	Advanced driver-assistance systems
AI	Artificial intelligence
ASIC	Application-specific integrated circuit
ASP	Average selling price
Back end services	Includes assembly, test and packaging services
CCG	Client Computing Group operating segment
CODM	Chief operating decision maker
DCAI	Data Center and Artificial Intelligence operating segment
EC	European Commission
EPS	Earnings per share
Form 10-K	Annual Report on Form 10-K for the year ended December 30, 2023
Form 10-Q	Quarterly Report on Form 10-Q for the quarter ended March 30, 2024
FPGA	Field-programmable gate array
HPC	High performance computing
IDM 2.0	Evolution of our IDM model that combines our internal factory network, strategic use of foundry capacity and our IFS business to position us to drive technology and product leadership
IP	Intellectual property
IPO	Initial public offering
MD&A	Management's Discussion and Analysis
MG&A	Marketing, general, and administrative
NAND	NAND flash memory
NEX	Networking and Edge operating segment
nm	Nanometer
R&D	Research and development
RSU	Restricted stock unit
SEC	US Securities and Exchange Commission
Smart Capital	Our Smart Capital approach accelerates progress on our IDM 2.0 strategy. This approach is designed to enable us to adjust quickly to opportunities in the market, while managing our margin structure and capital spending. The elements of Smart Capital include capacity investments, government incentives, customer commitments, continued use of external foundries.
SoC	A system on a chip, which integrates most of the components of a computer or other electronic system into a single silicon chip. We offer a range of SoC products in CCG, DCAI, and NEX. Our DCAI and NEX businesses offer SoCs across many market segments for a variety of applications, including products targeted for 5G base stations and network infrastructure
US	United States
US GAAP	US Generally Accepted Accounting Principles
VIE	Variable interest entity
VLSI	VLSI Technology LLC

Management's Discussion and Analysis

This report should be read in conjunction with our Form 10-K where we include additional information on our business, operating segments, risk factors, critical accounting estimates, policies, and the methods and assumptions used in our estimates, among other important information.

"Note 2: Operating Segments" within Notes to Consolidated Condensed Financial Statements of this Form 10-Q provides additional information about our operating segments including the nature of segment revenues and expenses and reconciles our segment revenues presented below to our total consolidated net revenues, and our segment operating income (loss) presented below to our total consolidated operating income (loss), for each of the periods presented.

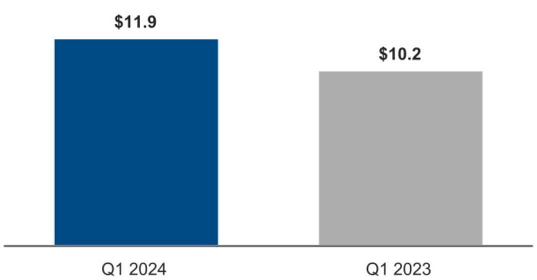
For additional key highlights of our results of operations, see "A Quarter in Review."

Intel Products

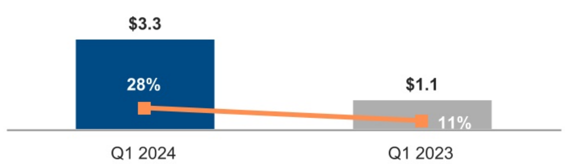
Intel Products consists substantially of design and development of CPUs and related solutions for third party customers. Intel Products is comprised of three operating segments: CCG, DCAI, and NEX.

Financial Performance

Intel Products Operating Segments Revenue $B



Intel Products Segments Operating Income $B



Operating Segments Revenue and Segments Operating Income Summary

Q1 2024 vs. Q1 2023

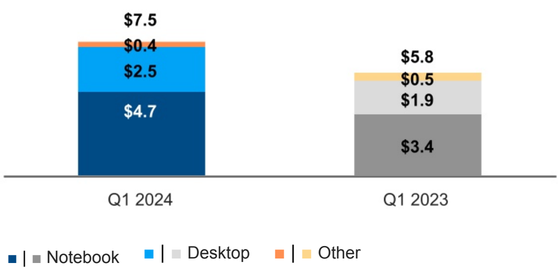
Total Intel Products revenue was $11.9 billion in Q1 2024 and $10.2 billion in Q1 2023. Revenue increased primarily due to our CCG operating segment. Total Intel Products operating income increased to $3.3 billion, or 28% operating margin for Q1 2024 from $1.1 billion or 11% operating margin in Q1 2023. This Q1 2024 increase is primarily due to higher CCG revenue, lower period charges across each of the Intel Products' operating segments due to the sell-through of previously reserved inventory and lower reserves taken, and lower CCG operating expenses and sample costs, partially offset by higher Q1 2024 unit costs in DCAI and CCG.

Client Computing Group

We are committed to advancing PC experiences by delivering an annual cadence of leadership products and deepening our relationships with industry partners to co-engineer and deliver leading platform innovation. We engage in an intentional effort to bring together the operating system, system architecture, hardware, and software application integration to enable industry-leading PC experiences. We embrace these opportunities by focusing our roadmap, delivering innovative PC capabilities, and designing advanced PC experiences. By doing this, we believe we help continue to fuel innovation across the industry, providing a solid source of IP, scale, and cash flow for Intel.

Financial Performance

CCG Operating Segment Revenue $B



CCG Segment Operating Income $B

Operating Segment Revenue Summary

Q1 2024 vs. Q1 2023

- Notebook revenue was $4.7 billion, up $1.3 billion from Q1 2023 and desktop revenue was $2.5 billion, up $582 million from Q1 2023. Notebook volume increased 39% in Q1 2024 and desktop volume increased 29% in Q1 2024 as customer inventory levels normalized compared to higher levels in Q1 2023. Notebook and desktop ASPs were roughly flat with Q1 2023.
- Other revenue was $391 million, down $90 million from Q1 2023 primarily driven by the exit of legacy businesses.

Segment Operating Income Summary

Operating income increased 124% from Q1 2023, with an operating margin of 35%.

(In Millions)		
$	2,645	**Q1 2024 Operating Income**
	987	Higher product profit primarily from higher notebook and desktop revenue
	285	Lower period charges primarily driven by the sell-through of previously reserved inventory
	163	Lower operating expenses driven by various cost-cutting measures
	154	Lower period charges primarily driven by lower product sample costs
	(124)	Higher unit costs primarily from increased mix of Intel 4 and Intel 7 products
$	1,180	**Q1 2023 Operating Income**

Data Center and AI

DCAI delivers cutting-edge workload-optimized solutions to cloud service providers and enterprises, along with silicon devices for communications service providers, network and edge, and HPC customers. Our unique capabilities enable us to help solve our customers' most complex challenges with the depth and breadth of our hardware and software portfolio, advanced packaging, and at-scale manufacturing made possible through a resilient, global supply chain. Our global customers and partners encompass cloud hyperscalers, multinational corporations, small-and medium-sized enterprises, independent software vendors, systems integrators, communications service providers, and governments.

Financial Performance

DCAI Operating Segment Revenue $B

DCAI Segment Operating Income $B

Operating Segment Revenue Summary

Q1 2024 vs. Q1 2023

Revenue was $3.0 billion, up $135 million from Q1 2023, driven by an increase in server revenue. Server ASPs increased 25% primarily due to a lower mix of hyperscale customer-related revenue and a higher mix of high core count products. Server volume decreased 13% in Q1 2024, due to lower demand in a competitive environment and a higher mix of high core count products.

Segment Operating Income Summary

Operating income increased $460 million from Q1 2023, with an operating margin of 16%.

(In Millions)	
$ 482	**Q1 2024 Operating Income**
429	Higher product profit primarily from higher server revenue
310	Lower period charges primarily driven by the sell-through of previously reserved inventory and lower reserves taken
(279)	Higher server unit cost primarily from increased mix of Intel 7 products
$ 22	**Q1 2023 Operating Income**

Network & Edge

NEX lifts the world's networks and edge compute systems from inflexible fixed-function hardware to general-purpose compute, acceleration, and networking devices running cloud native software on programmable hardware. We work with partners and customers to deliver and deploy intelligent edge platforms that allow software developers to achieve agility and to drive automation using AI for efficient operations while securing the integrity of their data at the edge. We have a broad portfolio of hardware and software platforms, tools, and ecosystem partnerships for the rapid digital transformation happening from the cloud to the edge. We are leveraging our core strengths in process, software, and manufacturing at scale to grow traditional markets and to accelerate entry into emerging ones.

Financial Performance

NEX Operating Segment Revenue $B

NEX Segment Operating Income (Loss) $B

Operating Segment Revenue Summary

Q1 2024 vs. Q1 2023

Revenue was $1.4 billion, down $125 million from Q1 2023 primarily due to 5G customers tempering purchases to reduce existing inventories, partially offset by higher Edge and Network revenue.

Segment Operating Income (Loss) Summary

Operating margin increased $253 million from Q1 2023, with an operating margin of 13%.

(In Millions)

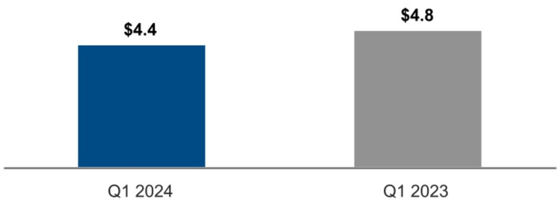
$ 184	**Q1 2024 Operating Income (Loss)**
185	Lower period charges driven by the sell-through of previously reserved inventory and lower reserves taken
68	Other
$ (69)	**Q1 2023 Operating Income (Loss)**

Intel Foundry

Intel Foundry, comprising our Foundry Technology Development, Foundry Manufacturing and Supply Chain, and Foundry Services organizations, is on a mission to deliver the best systems foundry capabilities to our customers and reshape the world's semiconductor industry. As the stewards of Moore's law, we continually innovate and advance world-class silicon process and advanced packaging technologies for customers. Our systems foundry offerings are strengthened by a robust design ecosystem with key industry partners, our systems of chips capabilities, and our secure, resilient and more sustainable supply chain. Our systems foundry is built on the foundation of our silicon process and advanced packaging technology offerings and enables co-optimized solutions for our customers in the AI era. We are strengthening the resilience of the global semiconductor supply chain for leading-edge and mature node semiconductor products by investing in geographically balanced and more sustainable manufacturing capacity. As a systems foundry for the AI era, Intel Foundry brings together these critical components to help our global customers drive the next phase of technology innovation.

Financial Performance

Intel Foundry Operating Segment Revenue $B



Intel Foundry Segment Operating Loss $B

Operating Segment Revenue Summary

Q1 2024 vs. Q1 2023

Revenue was $4.4 billion, down $462 million from Q1 2023. Intersegment revenue was $4.3 billion, down $371 million from Q1 2023, driven by lower back end services and product sample revenues. External revenue was $27 million, down $91 million from Q1 2023, driven by lower equipment sales and traditional packaging services.

Segment Operating Loss Summary

We had an operating loss of $2.5 billion, compared to an operating loss of $2.4 billion in Q1 2023.

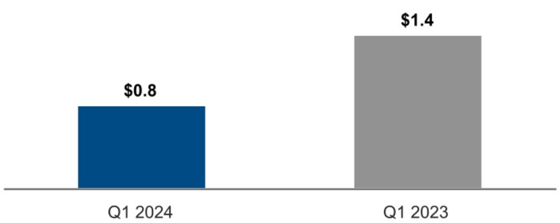
(In Millions)		
$	**(2,474)**	**Q1 2024 Operating Loss**
	(367)	Lower product and services profit primarily driven by lower revenue
	300	Lower period charges related to excess capacity charges
	209	Lower period charges primarily driven by lower intersegment inventory reserves taken
	(256)	Higher period charges primarily related to factory start-up costs and process development costs
$	**(2,360)**	**Q1 2023 Operating Loss**

All Other

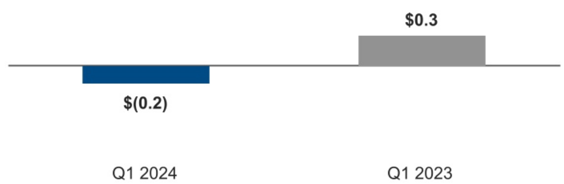
Our "all other" category includes results of operations from our Altera and Mobileye businesses, from "other" non-reportable segments not otherwise presented, from start-up businesses that support our initiatives, and historical results of operations from divested businesses. Altera offers programmable semiconductors, primarily FPGAs, CPLDs, acceleration platforms, software, IP, and related products, for a broad range of applications across our embedded, communications, cloud, and enterprise market segments. Mobileye is a global leader in driving assistance and self-driving solutions, with a product portfolio designed to encompass the entire stack required for assisted and autonomous driving, including compute platforms, computer vision, and machine learning-based perception, mapping and localization, driving policy, and active sensors in development.

Financial Performance

All Other Operating Segments Revenue $B



All Other Segments Operating Income (Loss) $B



Operating Segments Revenue and Segments Operating Income (Loss) Summary

Q1 2024 vs. Q1 2023

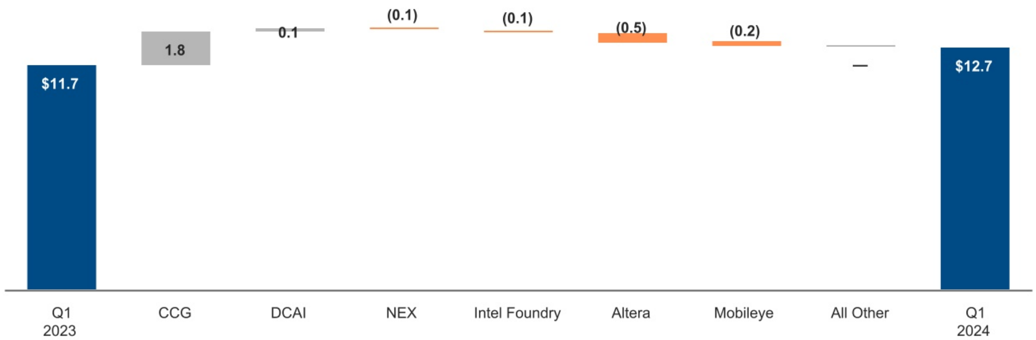
All other revenue was $775 million, down $665 million from Q1 2023. Altera revenue decreased $474 million from Q1 2023, as customers tempered purchases to reduce existing inventories across all product lines. Mobileye revenue decreased $219 million from Q1 2023, as customers tempered purchases to reduce existing inventories of EyeQ products. All other operating loss was $212 million in Q1 2024 compared to operating income of $347 million in Q1 2023 due primarily to lower Altera and Mobileye revenues.

Consolidated Condensed Results of Operations

	Three Months Ended			
	Q1 2024		Q1 2023	
(In Millions, Except Per Share Amounts)	Amount	% of Net Revenue	Amount	% of Net Revenue
Net revenue	$ **12,724**	**100.0 %**	$ **11,715**	**100.0 %**
Cost of sales	7,507	59.0 %	7,707	65.8 %
Gross margin	**5,217**	**41.0 %**	**4,008**	**34.2 %**
Research and development	4,382	34.4 %	4,109	35.1 %
Marketing, general, and administrative	1,556	12.2 %	1,303	11.1 %
Restructuring and other charges	348	2.7 %	64	0.5 %
Operating income (loss)	**(1,069)**	**(8.4)%**	**(1,468)**	**(12.5)%**
Gains (losses) on equity investments, net	205	1.6 %	169	1.4 %
Interest and other, net	145	1.1 %	141	1.2 %
Income (loss) before taxes	**(719)**	**(5.7)%**	**(1,158)**	**(9.9)%**
Provision for (benefit from) taxes	(282)	(2.2)%	1,610	13.7 %
Net income (loss)	**(437)**	**(3.4)%**	**(2,768)**	**(23.6)%**
Less: Net income (loss) attributable to non-controlling interests	(56)	(0.4)%	(10)	(0.1)%
Net income (loss) attributable to Intel	$ **(381)**	**(3.0)%**	$ **(2,758)**	**(23.5)%**
Earnings (loss) per share attributable to Intel—diluted	$ **(0.09)**		$ **(0.66)**	

Consolidated Revenue

Consolidated Revenue Walk $B[1]



Q1 2024 vs. Q1 2023

Our Q1 2024 revenue was $12.7 billion, up $1.0 billion or 9% from Q1 2023. CCG revenue increased 31% from Q1 2023 primarily due to higher notebook and desktop volumes as customer inventory levels normalized compared to higher levels in Q1 2023. Notebook and desktop ASPs were roughly flat with Q1 2023. DCAI revenue increased 5% from Q1 2023 due to higher server ASPs primarily due to a lower mix of hyperscale customer-related revenue and a higher mix of high core count products, partially offset by lower server volume due to lower demand in a competitive environment. NEX revenue decreased 8% primarily due to 5G customers tempering purchases to reduce existing inventories, partially offset by higher Edge and Network Xeon revenue. Altera revenue decreased 58% from Q1 2023 as customers tempered purchases to reduce existing inventories across all product lines and Mobileye revenue decreased 48% from Q1 2023 as customers tempered purchases to reduce existing inventories across EyeQ products. External Intel Foundry revenue decreased 77% from Q1 2023 due to lower multi-beam mask writer tool sales.

Incentives offered to certain customers to accelerate purchases and to strategically position our products with customers for market segment share purposes, particularly in CCG, contributed approximately $1.6 billion to our revenue during Q1 2024 compared to approximately $900 million during Q1 2023. The impacts of these Q1 2024 incentives were contemplated in our financial guidance for Q2 2024, as included in our Form 8-K dated April 25, 2024.

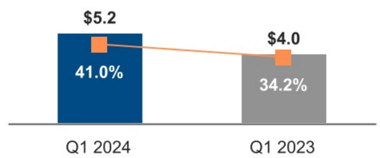
[1] *Excludes intersegment revenue*

Consolidated Gross Margin

We derived a substantial majority of our overall gross margin in Q1 2024 primarily from our Intel Products business sales through our CCG, DCAI, and NEX operating segments. Our overall gross margin dollars in Q1 2024 increased by $1.2 billion, or 30%, compared to Q1 2023.

Consolidated Gross Margin $B[1]

(Percentages in chart indicate gross margin as a percentage of total revenue)



(In Millions)

$	**5,217**	**Q1 2024 Gross Margin**
	1,079	Higher product profit primarily from higher notebook and desktop revenue
	553	Lower period charges driven by the sell-through of previously reserved inventory and lower reserves taken
	407	Higher product profit primarily due to higher server revenue
	300	Lower period charges related to excess capacity charges
	138	Lower period charges primarily driven by a decrease in product sample costs
	(540)	Lower product profit primarily from lower Altera and Mobileye revenue
	(313)	Higher unit cost primarily from increased mix of Intel 7 and Intel 4 products
	(213)	Higher period charges primarily related to factory start-up costs and process development costs
	(202)	Other
$	**4,008**	**Q1 2023 Gross Margin**

[1] *Excludes intersegment activity*

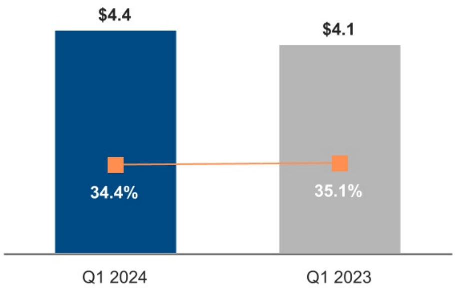
Consolidated Operating Expenses

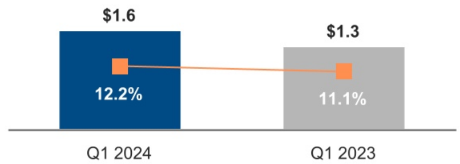
Total R&D and MG&A expenses for Q1 2024 were $5.9 billion, up 10% from Q1 2023. These expenses represent 46.7% of revenue for Q1 2024 and 46.2% of revenue for Q1 2023. In support of our strategy, described in our 2023 Form 10-K, we continue to make significant investments to accelerate our process technology roadmap. This requires continued investments in R&D and focused efforts to attract and retain talent. We continue to focus on cost efficiency initiatives that may offset some of the incremental costs that may be required periodically as we continue to improve our product execution and cost structure.

Research and Development $B

Marketing, General, and Administrative $B

(Percentages in chart indicate operating expenses as a percentage of total revenue)





Research and Development

Q1 2024 vs. Q1 2023

R&D increased by $273 million, or 7%, driven by the following:

+ Higher share-based compensation and incentive-based cash compensation
- The effects of various cost-cutting measures

Marketing, General, and Administrative

Q1 2024 vs. Q1 2023

MG&A increased by $253 million, or 19%, driven by the following:

+ Higher share-based compensation and incentive-based cash compensation
+ Increase in corporate spending, primarily from higher marketing expenses

Restructuring and Other Charges

(In Millions)	Q1 2024	Q1 2023
Employee severance and benefit arrangements	$ 129	$ (39)
Litigation charges and other	—	77
Asset impairment charges	219	26
Total restructuring and other charges	**$ 348**	**$ 64**

Employee severance and benefit arrangements includes a charge of $129 million in Q1 2024 relating to actions taken to streamline operations and to reduce costs.

Asset impairment charges includes a goodwill impairment loss of $222 million in Q1 2024 related to our new Intel Foundry reporting unit. Refer to "Note 2: Operating Segments" within Notes to Consolidated Condensed Financial Statements for further information.

Gains (Losses) on Equity Investments and Interest and Other, Net

(In Millions)	Q1 2024	Q1 2023
Ongoing mark-to-market adjustments on marketable equity securities	$ (91)	$ 188
Observable price adjustments on non-marketable equity securities	24	10
Impairment charges	(69)	(36)
Sale of equity investments and other	341	7
Total gains (losses) on equity investments, net	**$ 205**	**$ 169**
Interest and other, net	**$ 145**	**$ 141**

Ongoing mark-to-market adjustments for Q1 2024 were primarily driven by our interests in Astera Labs, Inc and Montage Technology Co., Ltd; Q1 2023 was primarily related to our interest in Montage Technology Co., Ltd and others.

In Q1 2024, we recognized a $336 million initial fair value adjustment within *sale of equity investments and other* upon Astera Labs, Inc shares becoming marketable.

Provision for (Benefit from) Taxes

(In Millions)	Q1 2024	Q1 2023
Income (loss) before taxes	$ (719)	$ (1,158)
Provision for (benefit from) taxes	$ (282)	$ 1,610
Effective tax rate	39.2 %	(139.0)%

In Q1 2024, we recognized a benefit from taxes as we applied our year-to-date actual effective tax rate to our year-to-date measure of ordinary income (loss) before taxes, which reflects our jurisdictional mix of ordinary income and losses.

Our provision for, or benefit from, income taxes for an interim period has historically been determined using an estimated annual effective tax rate, adjusted for discrete items, if any. Under certain circumstances where we are unable to make a reliable estimate of the annual effective tax rate, we use the actual effective tax rate for the year-to-date period. In Q1 2024, we used the actual effective tax rate approach due to the variability of the rate as a result of fluctuations in forecasted income and the effects of being taxed in multiple tax jurisdictions.

Liquidity and Capital Resources

We consider the following when assessing our liquidity and capital resources:

(In Millions)	Mar 30, 2024	Dec 30, 2023
Cash and cash equivalents	$ 6,923	$ 7,079
Short-term investments	14,388	17,955
Total cash and short-term investments	**$ 21,311**	**$ 25,034**
Total debt	**$ 52,450**	**$ 49,266**

We believe we have sufficient sources of funding to meet our business requirements for the next 12 months and in the longer term. Cash generated by operations, and total cash and short-term investments as shown in the preceding table, are our primary sources of liquidity for funding our strategic business requirements. These sources are further supplemented by our committed credit facilities and other borrowing capacity and certain other Smart Capital initiatives that we have undertaken. Our short-term funding requirements include capital expenditures for worldwide manufacturing and assembly and test, including investments in our process technology roadmap; working capital requirements; and potential acquisitions, strategic investments, and dividends. Our long-term funding requirements incrementally contemplate investments in significant manufacturing expansion plans and investments to accelerate our process technology.

Our total cash and short-term investments and related cash flows may be affected by certain discretionary actions we may take with customers and suppliers to accelerate or delay certain cash receipts or payments to manage liquidity for our strategic business requirements. These actions can include, among others, negotiating with suppliers to optimize our payment terms and conditions, adjusting the timing of cash flows associated with customer sales programs and collections, managing inventory levels and purchasing practices, and selling certain of our accounts receivables on a non-recourse basis to third party financial institutions.

We expect to continue to benefit from government incentives, and any incentives above our current expectations would enable us to increase the pace and size of our IDM 2.0 investments. Conversely, incentives below our expectations would increase our anticipated cash requirements and/or potentially curtail planned investments.

In April 2024 our Board of Directors declared a quarterly dividend of $0.125 per share on the company's common stock, which will be payable on June 1, 2024, to stockholders of record as of May 7, 2024. Future declarations of dividends and the establishment of future record and payment dates are subject to the final determination of our Board of Directors.

In Q1 2024, we issued a total of $2.6 billion aggregate principal amount of senior notes for general corporate purposes, including, but not limited to, refinancing of outstanding debt and funding for working capital and capital expenditures. We also expanded both our 5-year $5.0 billion revolving credit facility agreement and our 364-day $5.0 billion credit facility agreement, to $7.0 billion and $8.0 billion, respectively, and the maturity dates were extended by one year to February 2029 and January 2025, respectively. We have other potential sources of liquidity including our commercial paper program and our automatic shelf registration statement on file with the SEC, pursuant to which we may offer an unspecified amount of debt, equity, and other securities. Under our commercial paper program, we have an ongoing authorization from our Board of Directors to borrow up to $10.0 billion. As of March 30, 2024, we had $793 million of commercial paper obligations outstanding. As of March 30, 2024, we had no outstanding borrowings on the revolving credit facilities.

We maintain a diverse investment portfolio that we continually analyze based on issuer, industry, and country. Substantially all of our investments in debt instruments were in investment-grade securities.

Cash flows from operating, investing and financing activities for Q1 2024 and Q1 2023 were as follows:

	Three Months Ended	
(In Millions)	Mar 30, 2024	Apr 1, 2023
Net cash provided by (used for) operating activities	$ (1,223)	$ (1,785)
Net cash provided by (used for) investing activities	(2,563)	(8,521)
Net cash provided by (used for) financing activities	3,630	7,394
Net increase (decrease) in cash and cash equivalents	**$ (156)**	**$ (2,912)**

Operating Activities

Operating cash flows consist of net income adjusted for certain non-cash items and changes in certain assets and liabilities.

The decrease in cash used for operations in the first three months of 2024 was primarily driven by a lower net operating loss compared to the first three months of 2023, partially offset by certain cash unfavorable changes in working capital.

Investing Activities

Investing cash flows consist primarily of capital expenditures; investment purchases, sales, maturities, and disposals; and proceeds from capital-related government incentives.

Cash used for investing activities was lower in the first three months of 2024 compared to the first three months of 2023, primarily due to lower purchases of short-term investments; lower additions to property, plant, and equipment; and increased proceeds from capital-related government incentives. These favorable cash impacts were partially offset by lower maturities and sales of short-term investments and certain other cash unfavorable investing activities during the first three months of 2024.

Financing Activities

Financing cash flows consist primarily of payment of dividends to stockholders, issuance and repayment of short-term and long-term debt, and proceeds from partner contributions and equity-related issuances.

Cash provided by financing activities was lower in the first three months of 2024 compared to the first three months of 2023. This decrease was primarily due to a reduction in net proceeds from our debt and commercial paper issuances, net of commercial paper repayments; partially offset by the cash favorable impacts of reduced dividend payments in the first three months of 2024.

Non-GAAP Financial Measures

In addition to disclosing financial results in accordance with US GAAP, this document contains references to the non-GAAP financial measures below. We believe these non-GAAP financial measures provide investors with useful supplemental information about our operating performance, enable comparison of financial trends and results between periods where certain items may vary independent of business performance, and allow for greater transparency with respect to key metrics used by management in operating our business and measuring our performance. These non-GAAP financial measures are used in our performance-based RSUs and our cash bonus plans.

Our non-GAAP financial measures reflect adjustments based on one or more of the following items, as well as the related income tax effects. Income tax effects are calculated using a fixed long-term projected tax rate of 13% across all adjustments. We project this long-term non-GAAP tax rate on an annual basis using a five-year non-GAAP financial projection that excludes the income tax effects of each adjustment. The projected non-GAAP tax rate also considers factors such as our tax structure, our tax positions in various jurisdictions, and key legislation in significant jurisdictions where we operate. This long-term non-GAAP tax rate may be subject to change for a variety of reasons, including the rapidly evolving global tax environment, significant changes in our geographic earnings mix, or changes to our strategy or business operations. Management uses this non-GAAP tax rate in managing internal short- and long-term operating plans and in evaluating our performance; we believe this approach facilitates comparison of our operating results and provides useful evaluation of our current operating performance.

Our non-GAAP financial measures should not be considered a substitute for, or superior to, financial measures calculated in accordance with US GAAP, and the financial results calculated in accordance with US GAAP and reconciliations from these results should be carefully evaluated.

Non-GAAP adjustment or measure	Definition	Usefulness to management and investors
Acquisition-related adjustments	Amortization of acquisition-related intangible assets consists of amortization of intangible assets such as developed technology, brands, and customer relationships acquired in connection with business combinations. Charges related to the amortization of these intangibles are recorded within both cost of sales and MG&A in our US GAAP financial statements. Amortization charges are recorded over the estimated useful life of the related acquired intangible asset, and thus are generally recorded over multiple years.	We exclude amortization charges for our acquisition-related intangible assets for purposes of calculating certain non-GAAP measures because these charges are inconsistent in size and are significantly impacted by the timing and valuation of our acquisitions. These adjustments facilitate a useful evaluation of our current operating performance and comparison to our past operating performance and provide investors with additional means to evaluate cost and expense trends.
Share-based compensation	Share-based compensation consists of charges related to our employee equity incentive plans.	We exclude charges related to share-based compensation for purposes of calculating certain non-GAAP measures because we believe these adjustments provide comparability to peer company results and because these charges are not viewed by management as part of our core operating performance. We believe these adjustments provide investors with a useful view, through the eyes of management, of our core business model, how management currently evaluates core operational performance, and additional means to evaluate expense trends, including in comparison to other peer companies.
Restructuring and other charges	Restructuring charges are costs associated with a restructuring plan and are primarily related to employee severance and benefit arrangements. Other charges include periodic goodwill and asset impairments, certain pension charges, and costs associated with restructuring activity.	We exclude restructuring and other charges, including any adjustments to charges recorded in prior periods, for purposes of calculating certain non-GAAP measures because these costs do not reflect our core operating performance. These adjustments facilitate a useful evaluation of our core operating performance and comparisons to past operating results and provide investors with additional means to evaluate expense trends.
(Gains) losses on equity investments, net	(Gains) losses on equity investments, net consists of ongoing mark-to-market adjustments on marketable equity securities, observable price adjustments on non-marketable equity securities, related impairment charges, and the sale of equity investments and other.	We exclude these non-operating gains and losses for purposes of calculating certain non-GAAP measures because it provides comparability between periods. The exclusion reflects how management evaluates the core operations of the business.

(Gains) losses from divestiture	(Gains) losses are recognized at the close of a divestiture, or over a specified deferral period when deferred consideration is received at the time of closing. Based on our ongoing obligation under the NAND wafer manufacturing and sale agreement entered into in connection with the first closing of the sale of our NAND memory business on December 29, 2021, a portion of the initial closing consideration was deferred and will be recognized between first and second closing.	We exclude gains or losses resulting from divestitures for purposes of calculating certain non-GAAP measures because they do not reflect our current operating performance. These adjustments facilitate a useful evaluation of our current operating performance and comparisons to past operating results.
Adjusted free cash flow	We reference a non-GAAP financial measure of adjusted free cash flow, which is used by management when assessing our sources of liquidity, capital resources, and quality of earnings. Adjusted free cash flow is operating cash flow adjusted for (1) additions to property, plant, and equipment, net of proceeds from capital-related government incentives and partner contributions, and (2) payments on finance leases.	This non-GAAP financial measure is helpful in understanding our capital requirements and sources of liquidity by providing an additional means to evaluate the cash flow trends of our business.

Following are the reconciliations of our most comparable US GAAP measures to our non-GAAP measures presented:

	Three Months Ended	
	Mar 30, 2024	Apr 1, 2023
Gross margin percentage	**41.0 %**	**34.2 %**
Acquisition-related adjustments	1.8 %	2.8 %
Share-based compensation	2.3 %	1.4 %
Non-GAAP gross margin percentage	**45.1 %**	**38.4 %**
Earnings (loss) per share attributable to Intel—diluted	**$ (0.09)**	**$ (0.66)**
Acquisition-related adjustments	0.06	0.09
Share-based compensation	0.28	0.18
Restructuring and other charges	0.08	0.01
(Gains) losses on equity investments, net	(0.05)	(0.04)
(Gains) losses from divestiture	(0.01)	(0.01)
Adjustments attributable to non-controlling interest	—	—
Income tax effects	(0.09)	0.39
Non-GAAP earnings (loss) per share attributable to Intel—diluted	**$ 0.18**	**$ (0.04)**

	Three Months Ended	
(In Millions)	**Mar 30, 2024**	**Apr 1, 2023**
Net cash provided by (used for) operating activities	**$ (1,223)**	**$ (1,785)**
Net additions to property, plant, and equipment	(4,955)	(6,964)
Payments on finance leases	—	(15)
Adjusted free cash flow	**$ (6,178)**	**$ (8,764)**
Net cash provided by (used for) investing activities	**$ (2,563)**	**$ (8,521)**
Net cash provided by (used for) financing activities	**$ 3,630**	**$ 7,394**

Risk Factors and Other Key Information

Risk Factors

The risks described in "Risk Factors" within Other Key Information in our 2023 Form 10-K could materially and adversely affect our business, financial condition, and results of operations, and the trading price of our common stock could decline. These risk factors do not identify all risks that we face—our operations could also be affected by factors that are not presently known to us or that we currently consider to be immaterial to our operations. Due to risks and uncertainties, known and unknown, our past financial results may not be a reliable indicator of future performance and historical trends should not be used to anticipate results or trends in future periods. Refer also to the other information set forth in this Form 10-Q, including in the Forward-Looking Statements, MD&A, and the Consolidated Condensed Financial Statements and Supplemental Details sections.

Quantitative and Qualitative Disclosures About Market Risk

We are affected by changes in currency exchange and interest rates, as well as equity and commodity prices. Our risk management programs are designed to reduce, but may not entirely eliminate, the impacts of these risks. For a discussion about market risk and sensitivity analysis related to changes in currency exchange rates, interest rates, equity prices, and commodity prices refer to "Quantitative and Qualitative Disclosures About Market Risk" within MD&A in our 2023 Form 10-K.

Controls and Procedures

Inherent Limitations on Effectiveness of Controls

Our management, including the principal executive officer and principal financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all errors and all fraud. A control system, no matter how well-designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, have been detected.

Evaluation of Disclosure Controls and Procedures

Based on management's evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act)), were effective to provide reasonable assurance that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms, and is accumulated and communicated to management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Changes in Internal Control Over Financial Reporting

There were no changes to our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended March 30, 2024 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Issuer Purchases of Equity Securities

We have an ongoing authorization, originally approved by our Board of Directors in 2005 and subsequently amended, to repurchase shares of our common stock in open market or negotiated transactions. No shares were repurchased during the quarter ending March 30, 2024. As of March 30, 2024, we were authorized to repurchase up to $110.0 billion, of which $7.2 billion remained available.

We issue RSUs as part of our equity incentive plans. In our Consolidated Condensed Financial Statements, we treat shares of common stock withheld for tax purposes on behalf of our employees in connection with the vesting of RSUs as common stock repurchases because they reduce the number of shares that would have been issued upon vesting. These withheld shares of common stock are not considered common stock repurchases under our authorized common stock repurchase program.

Rule 10b5-1 Trading Arrangements

Our directors and officers (as defined in Rule 16a-1 under the Exchange Act) may from time to time enter into plans or other arrangements for the purchase or sale of our shares that are intended to satisfy the affirmative defense conditions of Rule 10b5–1(c) or may represent a non-Rule 10b5-1 trading arrangement under the Exchange Act. During the quarter ended March 30, 2024, no such plans or arrangements were adopted or terminated, including by modification.

Disclosure Pursuant to Section 13(r) of the Securities Exchange Act of 1934

Section 13(r) of the Exchange Act requires an issuer to disclose certain information in its periodic reports if it or any of its affiliates knowingly engaged in certain activities, transactions, or dealings with individuals or entities subject to specific US economic sanctions during the reporting period, even when the activities, transactions, or dealings are conducted in compliance with applicable law. On March 2, 2021, the US Secretary of State designated the Federal Security Service of the Russian Federation (FSB) as a party subject to one such sanction. Though Intel has suspended sales in Russia, there may be a need to file documents or engage with FSB as Intel winds up our local Russian offices. All such dealings are explicitly authorized by General License 1B issued by the US Department of the Treasury's Office of Foreign Assets Control (OFAC), and there are no gross revenues or net profits directly associated with any such dealings by us with the FSB.

On April 15, 2021, the US Department of the Treasury designated Pozitiv Teknolodzhiz, AO (Positive Technologies), a Russian IT security firm, as a party subject to one of the sanctions specified in Section 13(r). Prior to the designation, we communicated with Positive Technologies regarding its IT security research and coordinated disclosure of security vulnerabilities identified by the firm. Based on a license issued by OFAC, we resumed such communications. There are no gross revenues or net profits directly associated with any such activities. We plan to continue these communications in accordance with the terms and conditions of the OFAC license.

Exhibits

		Incorporated by Reference				
Exhibit Number	Exhibit Description	Form	File Number	Exhibit	Filing Date	Filed or Furnished Herewith
3.1	Corrected Third Restated Certificate of Incorporation of Intel Corporation, dated October 23, 2023	10-Q	000-06217	3.1	10/27/2023	
3.2	Intel Corporation Bylaws, as amended and restated on November 29, 2023	8-K	000-06217	3.2	12/5/2023	
4.1	Twentieth Supplemental Indenture, dated as of February 21, 2024, between Intel Corporation and Computershare Trust Company, National Association (as successor to Wells Fargo Bank, National Association), as trustee	8-K	000-06217	4.1	2/21/2024	
10.1†	Executive Officer Cash Severance Policy of Intel Corporation, dated February 16, 2024	8-K	000-06217	10.1	2/16/2024	
31.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a) of the Exchange Act					X
31.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a) of the Exchange Act					X
32.1	Certification of the Chief Executive Officer and the Chief Financial Officer pursuant to Rule 13a-14(b) of the Exchange Act and 18 U.S.C. Section 1350					X
101	Inline XBRL Document Set for the consolidated condensed financial statements and accompanying notes in Consolidated Condensed Financial Statements and Supplemental Details					X
104	Cover Page Interactive Data File - formatted in Inline XBRL and included as Exhibit 101					X

† *Management contracts or compensation plans or arrangements in which directors or executive officers are eligible to participate.*

Form 10-Q Cross-Reference Index

Signatures

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

			INTEL CORPORATION (Registrant)
Date:	April 25, 2024	By:	/s/ DAVID ZINSNER
			David Zinsner
			Executive Vice President, Chief Financial Officer, and Principal Financial Officer
Date:	April 25, 2024	By:	/s/ SCOTT GAWEL
			Scott Gawel
			Corporate Vice President, Chief Accounting Officer, and Principal Accounting Officer

Exhibit 31.1

CERTIFICATION

I, Patrick P. Gelsinger, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Intel Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 25, 2024

By: /s/ PATRICK P. GELSINGER

Patrick P. Gelsinger

Chief Executive Officer, Director and Principal Executive Officer

Exhibit 31.2

CERTIFICATION

I, David Zinsner, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Intel Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: April 25, 2024

By: /s/ DAVID ZINSNER
David Zinsner
Executive Vice President, Chief Financial Officer and
Principal Financial Officer

Exhibit 32.1

CERTIFICATION

Each of the undersigned hereby certifies, for the purposes of section 1350 of chapter 63 of title 18 of the United States Code, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, in his capacity as an officer of Intel Corporation (Intel), that, to his knowledge, the Quarterly Report of Intel on Form 10-Q for the period ended March 30, 2024, fully complies with the requirements of Section 13(a) of the Securities Exchange Act of 1934 and that the information contained in such report fairly presents, in all material respects, the financial condition and results of operations of Intel. This written statement is being furnished to the Securities and Exchange Commission as an exhibit to such Form 10-Q. A signed original of this statement, which may be electronic, has been provided to Intel and will be retained by Intel and furnished to the Securities and Exchange Commission or its staff upon request.

Date:	April 25, 2024	By: /s/ PATRICK P. GELSINGER Patrick P. Gelsinger Chief Executive Officer, Director and Principal Executive Officer
Date:	April 25, 2024	By: /s/ DAVID ZINSNER David Zinsner Executive Vice President, Chief Financial Officer, and Principal Financial Officer

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d) of The Securities Exchange Act of 1934

April 10 , 2024
Date of Report (date of earliest event reported)

MICRON TECHNOLOGY, INC.
(Exact name of registrant as specified in its charter)

Delaware	**1-10658**	**75-1618004**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

8000 South Federal Way
Boise, Idaho 83716-9632
(Address of principal executive offices and Zip Code)

(208) 368-4000
(Registrant's telephone number, including area code)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading symbol	Name of each exchange on which registered
Common Stock, par value $0.10 per share	MU	Nasdaq Global Select Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure

On April 10, 2024, Micron Technology, Inc. (the "Company", "we" or "our") announced further information regarding the impact of the April 3, 2024 earthquake in Taiwan on the Company’s operations and supply chain. As the Company announced in its press release issued April 3, 2024, all Micron team members are safe. The Company further notes that there is no permanent impact on facilities, infrastructure or tools and there is no impact to our long-term DRAM supply capability.

As of the date hereof, Micron is not yet at full DRAM production following the earthquake, but its fab activity is recovering well, aided by the dedicated efforts of its Taiwan operations team. Micron believes that past investment to make its infrastructure more robust and resilient has been beneficial in this recovery.

Micron currently estimates that the earthquake will result in an impact of up to a mid-single digit percentage of a calendar quarter’s Company-level DRAM supply.

Forward-Looking Statements

This Current Report on Form 8-K contains forward-looking statements regarding the expected impact of the earthquake in Taiwan on the Company, including its facilities, infrastructure, tools, supply capability and fab activity, as well as the impact of the earthquake on DRAM supply. These forward-looking statements are subject to a number of risks and uncertainties that could cause actual results to differ materially. Please refer to the documents we file with the Securities and Exchange Commission, including our most recent Form 10-K and Form 10-Q. These documents contain and identify important factors that could cause our actual results to differ materially from those contained in these forward-looking statements. These certain factors can be found at investors.micron.com/risk-factor. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. We are under no duty to update any of the forward-looking statements to conform these statements to actual results.

The information in Item 7.01 of this Current Report on Form 8-K shall not be deemed "filed" for the purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities of that section. The information in Item 7.01 of this Current Report on Form 8-K shall not be incorporated by reference into any filing or other document pursuant to the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing or document.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

MICRON TECHNOLOGY, INC.

Date:	April 10, 2024	By:	*/s/ Michael Ray*
		Name:	Michael Ray
		Title:	Senior Vice President, Chief Legal Officer and Corporate Secretary