



## TSMC 2021 Business Overview



**Taiwan Semiconductor  
Manufacturing Company, Ltd.**

8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu 300-096, Taiwan, R.O.C.

Tel: 886-3-5636688 Fax: 886-3-5637000

<https://www.tsmc.com>



# 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

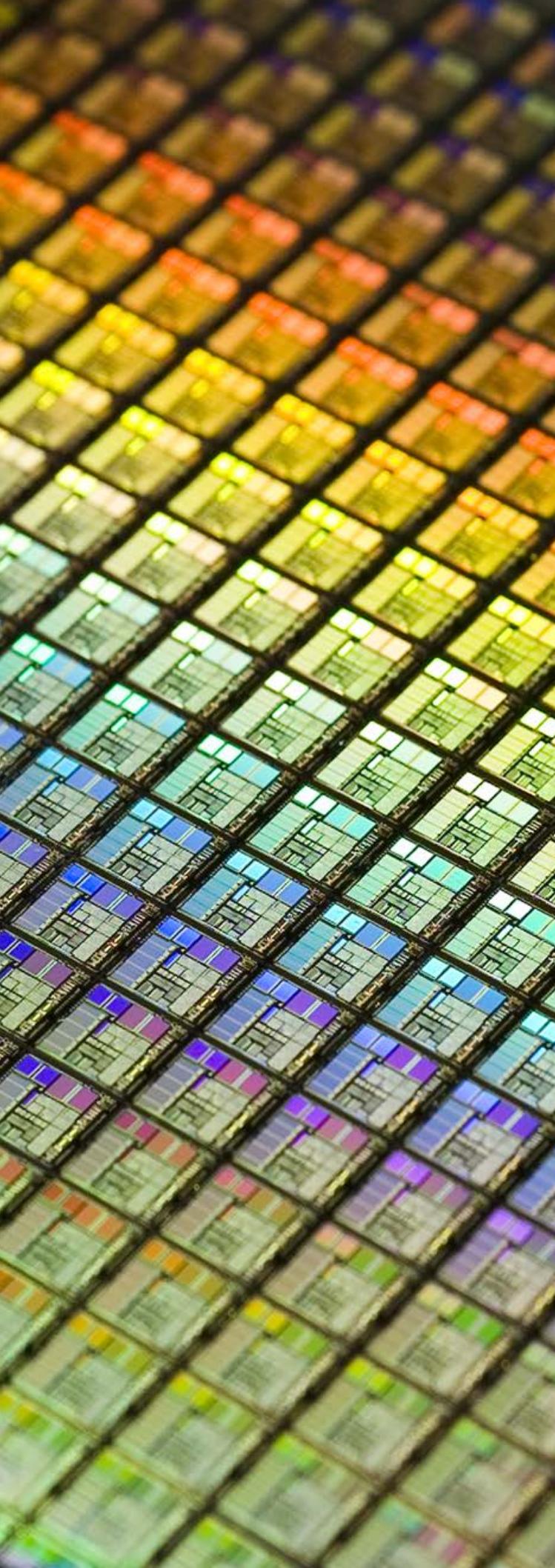
TSMC is committed to the welfare of customers, suppliers, employees, shareholders, and society. These stakeholders all contribute to TSMC's success, and TSMC is dedicated to serving their best interests. In return, TSMC hopes all these stakeholders will make a mutual commitment to the Company.

### 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.



## Table of Contents

1. Letter to Shareholders	3
2. Introduction	9
3. Market Overview	13
4. TSMC's Trinity of Strengths	15
5. Corporate Governance	18
6. Environmental, Social and Governance	19
7. Financial Statements	21



## 1. Letter to Shareholders

### Dear Shareholders,

2021 was a year full of challenges and opportunities for TSMC, as the COVID-19 pandemic persisted against a backdrop of strong semiconductor industry growth. Although the wide availability of vaccines has provided much-needed protection, outbreaks from new variants of the virus continued to lead to heavy health institution overloads, sporadic lockdowns and global supply chain disruptions in 2021. TSMC took stringent precautions to protect the health and safety of our employees, while safeguarding our fab operations to ensure we continue to support our customers amidst the pandemic. At the same time, global demand for semiconductors exceeded supply, driven by concerns of supply chain disruptions during the pandemic, and the accelerated digital transformation brought in by COVID-remote lifestyle. Thus, semiconductor shortages became an issue for many areas of the global supply chain in 2021.

To fulfill TSMC's mission of being the global logic IC industry's trusted technology and capacity provider, we focused diligently on improving our productivity and increasing our fab operations quality, to generate more wafer output from our existing capacity to support the fast-growing demand from our customers. We also continued to enhance our service, enrich our R&D infrastructure, expand our capacity, and invest to support our customers' growth. Our capital spending increased to US\$30 billion in 2021. Through our relentless efforts, we delivered a twelfth-consecutive year of record revenue, thanks to strong demand for our industry-leading advanced and specialty technologies, and our 2021 annual revenue increased 24.9% year-over-year in US dollar terms.

We believe TSMC is entering a period of higher structural growth, as the multi-year megatrends of 5G and High Performance Computing (HPC)-related applications are expected to fuel massive demand for computation power, which expand the use of leading-edge technologies. The structural increase in the long-term market demand profile will drive growth across our smartphone, HPC, IoT and Automotive platforms, and TSMC is working closely with our customers to plan our capacity, and accelerating our investments in both leading edge and specialty technologies to support their demand.

We are also expanding our global manufacturing footprint in the U.S., Japan and China to better serve our customers, reach for global talents, and sustain and enhance our competitive advantages. We are also aggressively accelerating our digital transformation in our company operations to support our fast expansion.

At the same time, we are committed to achieving a sustainable and proper return that enables us to invest to support our customers' growth. Our pricing strategy will remain strategic, not opportunistic, to reflect our value creation. We will also work diligently in our fab operations, and with our suppliers, to deliver on cost improvements. By taking such actions, we can continue to invest to support our customers' growth, and deliver long-term profitable growth for our shareholders.

To address the insatiable demand for energy-efficient computing power, customers rely on TSMC not only for reliable capacity, but also a predictable pace of technology development.

In its second year of volume ramp, our N5 technology has proven to be the industry's most competitive leading-edge technology. N5 demand continued to be very strong, driven by smartphone and HPC applications, and represented 19% of our total wafer revenue in 2021.

Our 3-nanometer technology development is on track with good progress, and we have developed complete platform support for HPC and smartphone applications in preparation for volume production in the second half of 2022.

Our 2nm development program is on track, including a new transistor structure, and we expect our N2 to deliver the best technology maturity, performance and cost for our customers when it is introduced.

In addition, to improve system level performance, TSMC continued to offer new 3DFabric™ design solutions, including TSMC-SoIC™ (System on Integrated Chip) for 3D chip stacking, and InFO (Integrated Fan Out) and CoWoS® (Chip on Wafer on Substrate) for 2.5D advanced packaging, to drive greater system performance, greater energy efficiency, greater compute density, smaller form factor and more cost effectiveness for our customers.

Highlights of TSMC's accomplishments in 2021:

- Total wafer shipments were 14.2 million 12-inch equivalent wafers as compared to 12.4 million 12-inch equivalent wafers in 2020.
- Advanced technologies (7-nanometer and beyond) accounted for 50 percent of total wafer revenue, up from 41 percent in 2020.
- We deployed 291 distinct process technologies, and manufactured 12,302 products for 535 customers.
- TSMC produced 26 percent of the world semiconductor excluding memory output value in 2021, as compared to 24 percent in the previous year.

## 2021 Financial Performance

Consolidated revenue reached NT\$1,587.42 billion, an increase of 18.5 percent over NT\$1,339.26 billion in 2020. Net income was NT\$596.54 billion and diluted earnings per share were NT\$23.01. Both increased 15.2 percent from the 2020 level of NT\$517.89 billion net income and NT\$19.97 diluted EPS.

TSMC generated net income of US\$21.35 billion on consolidated revenue of US\$56.82 billion, which increased 21.3 percent and 24.9 percent respectively from the 2020 level of US\$17.60 billion net income and US\$45.51 billion consolidated revenue.

Gross profit margin was 51.6 percent as compared with 53.1 percent in 2020, while operating profit margin was 40.9 percent compared with 42.3 percent a year earlier. Net profit margin was 37.6 percent, a decrease of 1.1 percentage points from 2020's 38.7 percent.

In 2021, the Company further raised its total cash dividend payments to NT\$10.25 per share, up from NT\$10.0 a year ago.

## Technological Developments

In order to provide our customers with industry-leading technologies, we are committed to investments in R&D. In 2021, we increased our investment in R&D to US\$4.46 billion to extend our technology leadership, and enable the global pool of innovators to unleash their innovations and create value for the semiconductor industry.

Our N3 technology will use FinFET transistor structure, to deliver the best technology maturity, performance and density for our customers. Its volume production is scheduled for second half of 2022. We also introduced N3E as an extension to our N3 family, with enhanced performance, power and yield. N3E volume production is scheduled for one year after N3. With our technology leadership and strong customer demand, we are confident that our N3 family will be another large and long-lasting node for TSMC.

To further enhance our N5 family's performance, power and density, we also introduce N4P and N4X technologies, targeting next wave 5nm products. N4P offers 11% performance boost as compared to N5, while N4X is an offering tailored for workload-intensive HPC applications. N4X is the first in the 'X' lineage of TSMC's extreme performance semiconductor technologies, with a performance boost of 15% over N5. Our first N4P product tape-out is scheduled for the second half of 2022, and N4X is expected to enter risk production in the first half of 2023.

2nm technology has entered the technology development phase in 2021, focusing on test vehicle design and implementation, mask making, and Si pilot runs.

TSMC's 3DFabric™ design solutions will complement our transistor scaling to improve system-level performance. For TSMC-SoIC™, TSMC successfully demonstrated Chip on Wafer (CoW) technology with good electrical performance on a customer product in 2021. The CoWoS®-S, featuring a new embedded deep trench capacitor and an interposer up to 3-reticle size, was qualified in 2021. It enables more logic and high bandwidth memory (HBM) integration for customers' high performance computing applications. For InFO, TSMC successfully qualified our 7<sup>th</sup> generation InFO-PoP Gen-7 for mobile applications with enhanced thermal performance. We also initiated high-volume manufacturing of our 3<sup>rd</sup> generation of InFO-oS Gen-3 to enable larger package size and higher bandwidth.

TSMC's ecosystem, the Open Innovation Platform® (OIP), empowers our 535 distinct customers to design in a safe and secure cloud environment, to unleash their innovations with fast time-to-market. We also worked with our ecosystem partners to expand our libraries and silicon IP portfolio to over 40,000 items in 2021. More than 38,000 technology files and over 2,600 process design kits, from 0.5-micron to 3-nanometer, were made available to our customers.

## Environmental, Social and Governance

As a global semiconductor industry leader, we are deeply aware that the impact of our actions ripples out to affect customers, suppliers, the communities where we live and operate, consumers around the world, and the global climate and environment. With this responsibility in mind, we are focused on driving changes in Green Manufacturing, Responsible Supply Chain, Inclusive Workplace, Talent Development and Caring for the Underprivileged. In 2021, we also approved the issuance of restricted stock awards, to better align our executives' compensation with shareholder interests and our ESG achievements.

In 2021, TSMC committed to the 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 works to make its carbon emissions reduced to the 2020 level by 2030. We also published our Task Force on Climate-related Financial Disclosures (TCFD) Report, becoming an industry leader in climate disclosure.

To expand our influence in our massive global supply chain, we established the TSMC Supplier Sustainability Academy through our Supply Online 360 platform. The platform provides free learning resources to suppliers, and avails those resources to the general public. By designating required courses and tracking training status, the Company was able to ensure that tier-1 suppliers continued to improve their sustainability management capabilities, and help our suppliers adhere to their labor rights.

We are committed to diversity and inclusion, including gender diversity. Increasing female representation in our Company is an important focus, and we have introduced programs targeting female hiring, retention, and promotions to maximize our female employee's potential and valuable contributions to TSMC and society.

TSMC continues to invest in STEM education and semiconductor related research, as the collaboration between industry and academia is critical to nurture and create a sustainable talent pipeline for the semiconductor industry. TSMC is working closely with top universities in Taiwan and overseas, to set up semiconductor programs to help students seamlessly bridge the knowledge they learn at schools and the real practice of the industry. We also believe TSMC's global footprint expansion will not only enable us to better support our customers, but also give us more opportunities to reach for global talents.

Facing the global threats of the COVID-19 pandemic, TSMC has been devoting its knowledge and global logistics resources to support the worldwide anti-pandemic effort. In 2021, amidst the initial COVID outbreak in Taiwan, TSMC successfully purchased five million doses of BioNTech 162b2 vaccine and donated them to the Taiwan Centers for Disease Control (CDC) of the Ministry of Health and Welfare. The TSMC Charity Foundation also donated contactless testing stations to hospitals to protect healthcare workers. Extending its reach beyond Taiwan, the Charity Foundation donated 1,000 oxygen generators to India, offering relief as a severe wave of infections taxed the country's medical infrastructure.

## Corporate Developments

In December 2021, TSMC established a subsidiary, Japan Advanced Semiconductor Manufacturing, Inc. (JASM), in Kumamoto, Japan, with Sony Semiconductor Solutions Corporation and DENSO Corporation participating as minority shareholders. JASM will construct and operate a fab that utilizes 12/16- and 22/28-nanometer technology to address strong global market demand for specialty technologies. Production is targeted to begin by the end of 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*, *Asiamoney*, *FinanceAsia*, *CommonWealth Magazine*, and the Taiwan Stock Exchange. TSMC was also recognized by *TIME Magazine* as "2021 TIME100 Most Influential 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 21 consecutive years. We also received MSCI ESG Research's AAA Rating, S&P Global's "The Sustainability Yearbook Award 2021" Silver Class, ISS ESG's "Prime" status in the ESG Corporate Rating, and *Corporate Knight's* 2021 "Global 100 Most Sustainable Corporations". 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*.

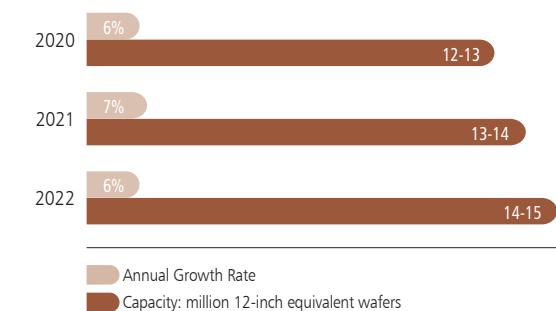
## Outlook

Although COVID-19 and cyclical-related uncertainties may persist in the near-term, the trend of technology becoming more pervasive and essential in people's lives, and the acceleration of digital transformation, is only becoming stronger. The semiconductor industry value in the supply chain is increasing. Semiconductor technology is becoming a foundational technology for the modern economy.

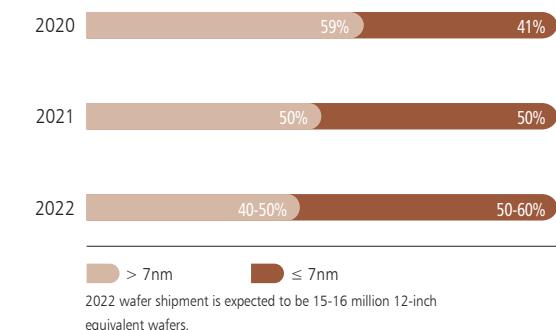
In the 5G era, an intelligent and more connected world will drive device unit volume growth, and more importantly, substantial semiconductor content enrichment is happening in HPC, smartphone, automotive and IoT applications. Our semiconductor manufacturing excellence will serve as an open platform for innovation, enabling more and more new applications and usage models, to create higher value for end-users at a faster rate than is possible today.

With TSMC's leadership in advanced and specialty technologies and 3DFabric™ solutions, our position as the world's largest, reliable and effective capacity provider, and our deep collaborative relationship with customers, we are well-positioned to capture the growth from these favorable industry megatrends.

## Capacity Plan



## Wafer Sales Plan



With our dedication to sound corporate governance, we will continue to make decisions that are in the best interests of the Company, and deliver long-term profitable growth for our shareholders. We will continue to focus on capturing our value, so that even as we shoulder a greater burden of capex investment for the industry, we can continue to invest to support our customers' growth, and earn a sustainable and proper return.

We recognize the important role of TSMC in the global semiconductor industry, and our impact to many of the world's economies. Our position as an industry leader has raised us to a new level of challenges, and with them, a new level of rewards, and we do not take such a responsibility lightly. We will hold steadfast to our dedicated foundry business model, and collaborate with all the IC innovators to unleash innovation. We will not deviate from our core values of Integrity, Commitment, Innovation and Customer Trust, which have faithfully guided us through the past 35 years.

As TSMC enters a new era of higher growth, we are excited about the opportunities ahead of us. We are honored that our shareholders have chosen to join us on this journey, and look forward to a long and prosperous future together.



The signature of Mark Liu, Chairman of TSMC.

Mark Liu  
Chairman

The signature of C.C. Wei, Chief Executive Officer of TSMC.

C.C. Wei  
Chief Executive Officer

## 2. Introduction

### Company Profile

Established in 1987 and headquartered in Hsinchu Science Park, Taiwan, TSMC pioneered the pure-play foundry business model with an exclusive focus on manufacturing 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 focus on its customers' success. TSMC's foundry business model has enabled the rise of the global fabless industry, and, since its inception, TSMC has been the world's leading semiconductor foundry. In 2021, the Company manufactured 12,302 different products using 291 distinct technologies for 535 different customers.

TSMC-made semiconductors serve a global customer base that is large and diverse with a wide range of applications. These products are used in a variety of end markets including smartphones, high performance computing, 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 higher 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 13 million 12-inch equivalent wafers in 2021. 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, WaferTech in the United States and TSMC China Company Limited.

In December 2021, TSMC established a subsidiary, Japan Advanced Semiconductor Manufacturing, Inc. (JASM), in Kumamoto, Japan, with Sony Semiconductor Solutions Corporation and DENSO Corporation participating as minority shareholders. JASM will construct and operate a fab that utilizes 12/16- and 22/28-nanometer technology to address strong global market demand for specialty technologies. Production is targeted to begin by the end of 2024.

Meanwhile, the Company continued to execute its plan for an advanced semiconductor fab in Arizona, the United States, with production targeted for 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 2021, the Company and its subsidiaries employed more than 65,000 people worldwide.

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

## R&D Highlights in 2021

To meet our customer's needs in today's dynamic marketplace, TSMC is accelerating the pace of its innovation by offering leading-edge processes as well as a wide variety of specialty technologies to unleash their innovation. Many of our technological breakthroughs in materials, processing, and advanced lithography are enabling devices to be faster, smaller and more power efficient. In 2021, the Company developed or introduced a wide variety of technologies.

A summary of highlights is below:

### Advanced Technology Highlights

#### • 3nm Technology

In 2021, TSMC established platform support of N3 technology for both HPC and SOC applications, started risk production, and planned to launch volume production in the second half of 2022. The Company also started the development of the N3E technology, which features an improved manufacturing process window and better performance and power, with volume production scheduled for one year after N3.

#### • 2nm Technology

TSMC entered the development stage of 2nm technology in 2021, focusing on test vehicle design and implementation, mask making, and Si pilot runs. Major progress was made in enhancing baseline process setup, transistor and interconnect performance.

#### • Lithography Technology

In 2021, TSMC R&D achieved solid imaging with improved wafer yield for 3nm risk production. The Company also enhanced EUV application, material quality and planarization for 2nm technology development. In addition, TSMC R&D worked on reduction of mask defects in EUV scanner and overlay errors, while lowering overall cost. The Company's EUV program continued to make breakthroughs in EUV power output and stability, thereby further boosting productivity, with further progress made in EUV lithography process control, photoresist materials mask pellicle and mask manufacturing quality, thus improving yield to achieve HVM (high volume manufacturing) requirements.

### Specialty Technology Highlights

#### • Mixed Signal/Radio Frequency (MS/RF)

With the advent of the 5G mmWave (millimeter wave) era, TSMC has already delivered a number of competitive technology solutions leveraging RF design-technology co-optimization (DTCO). In 2021, TSMC continued to offer 6nm RF technology for 5G transceiver designs, 40nm special process for 5G RF frontend module (FEM) in sub-6 GHz designs, and 28nm HPC+ process for 5G mmWave FEM designs.

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

In 2021, TSMC made several major technical advances in CMOS image sensor technology including: (1) 13% pixel size scaling down on innovative quad phase detection (QPD) sensor structure for the mobile imaging market; (2) implementation of pixel-embedded 3D high density metal-insulator-metal (MiM) capacitors on dual conversion-gain and LOFIC (lateral overflow integrating capacitor) image sensors for high-dynamic-range machine vision and security camera applications; (3) production of a new generation automotive image sensors with 25dB higher dynamic range and three times lower dark current than those of previous generations, and the enablement of ADAS (advanced driver assistance systems) capability.

#### • Embedded Flash/Emerging Memory

TSMC reached several major milestones in embedded non-volatile memory (NVM) technologies in 2021. At the 28nm node, the Company's embedded flash development for high-performance (HP) mobile computing and HP low-leakage platforms maintained a stable high yield and achieved technical qualification for consumer electronics grade and automotive grade-1 applications. These NVMs are scheduled for technical and product qualification in automotive highest grade-0 in 2023. TSMC also offered RRAM as a low-cost embedded NVM solution for the price-sensitive IoT market. The Company's 40nm node entered mass production, while the 28nm and 22nm nodes were ready for production.

The Company also made several major accomplishments in embedded MRAM technology. Productivity was increased in the mass production of 22nm node MRAM by simplifying integration processes, with technical qualification in 2021. Stable high yield was maintained in the 16nm node for automotive applications, with technical qualification expected in 2023.

### Advanced Packaging Technology Highlights

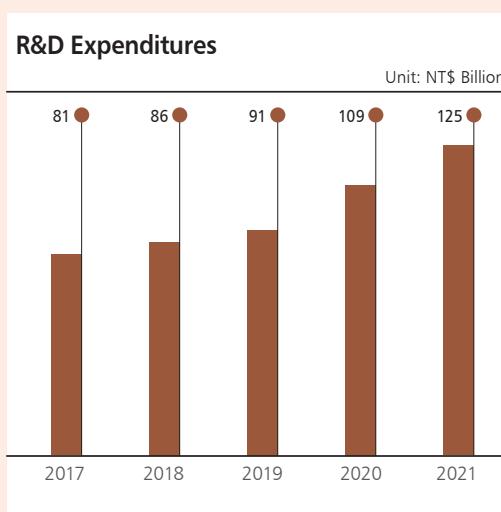
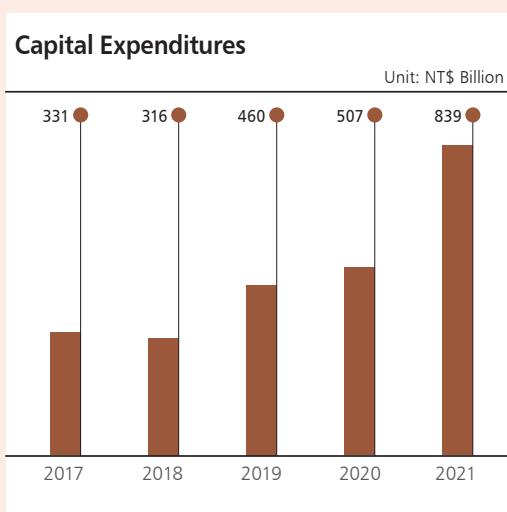
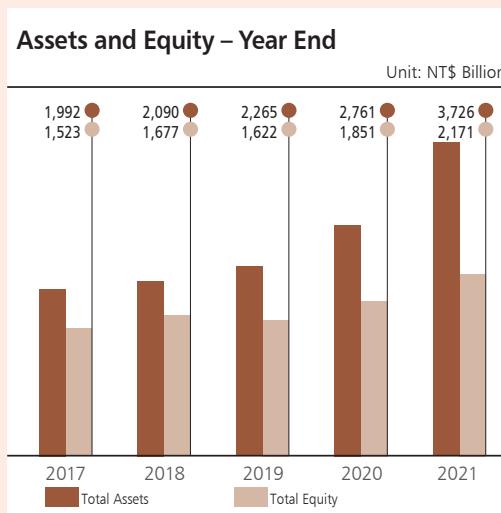
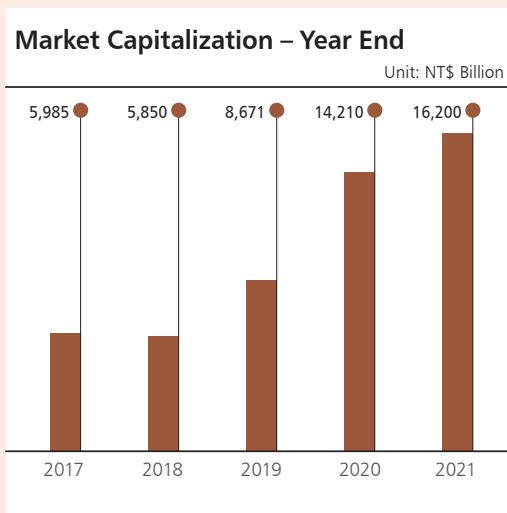
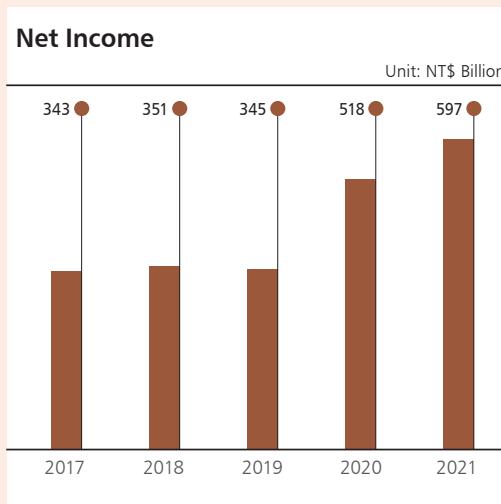
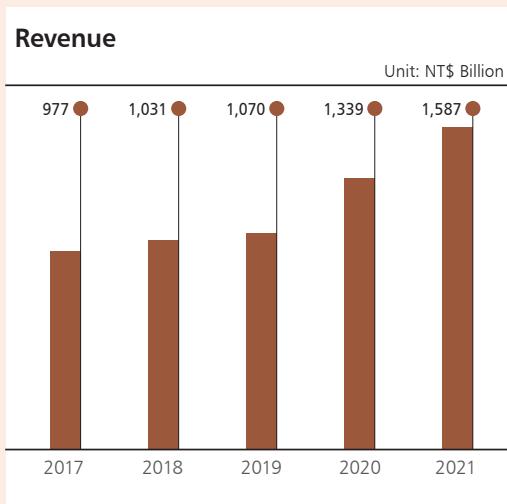
#### • 3DIC and TSMC-SoIC™

TSMC-SoIC™ 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. A SoIC integrated chip can be subsequently assembled using conventional packages or using TSMC's new 3DFabric™ technologies, such as CoWoS® or InFO, for next generation HPC, AI and mobile applications. Currently, TSMC's SoIC process is targeted to complete initial qualification in the second half of 2022. TSMC will continue pursue the scaling of SoIC technologies to align with the Company's advanced Si technologies for further gains in transistor density, system PPA (power, performance, area) and cost.

#### • Integrated Fan-Out (InFO)

In 2021, TSMC continued its industry leadership in high-volume manufacturing of InFO-PoP Gen-6 packaging for mobile applications and InFO-oS Gen-3 for HPC chip-partition applications. InFO-PoP Gen-7 was also successfully qualified for mobile applications and displayed enhanced thermal performance. InFO-oS Gen-4, which provides more chip-partition integration with larger package size and higher bandwidth, was developed on schedule.

### 3. Market Overview



TSMC estimates that the worldwide semiconductor market excluding memory reached US\$447 billion in revenue in 2021, representing a 25% increase from 2020. In the foundry segment of the semiconductor industry, total revenue rose to US\$102 billion in 2021, a robust growth over 2020.

In 2021, TSMC's solid growth in the foundry segment was fueled by strong, broad based market demand. Industry megatrends, such as 5G, artificial intelligence (AI) proliferation, and the accelerating digital transformation, drove increased demand across all major markets: smartphones, high performance computing (HPC), Internet of Things (IoT), and automotive. During this time, to cope with high demand amid supply uncertainties, the electronics supply chain took on higher inventory levels, which also contributed to foundry segment and TSMC growth.

For 2022, the industry megatrends are likely to continue and hence TSMC sees healthy increases in overall demand for electronic devices in general, resulting in projected growth in the low-teens for the worldwide semiconductor market excluding memory. For the longer term, fueled by increasing semiconductor content in most electronic devices, continued 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, TSMC expects foundry segment revenue to outpace the high single-digit compound annual growth rate projected for the worldwide semiconductor market excluding memory from 2021 through 2026.

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

#### Smartphones

Despite the severe impact of the COVID-19 pandemic, smartphone unit shipments grew 6% in 2021, reflecting accelerated 5G commercialization, as new 5G smartphones shortened the overall replacement cycle. As this trend continues, TSMC projects low-single-digit growth for the smartphone market in 2022. Over the longer term, the migration to 5G, together with improved performance, longer battery life, biosensors and more AI features will all continue to propel smartphone sales going forward.

High performance and power efficient integrated circuit (IC) technology is an essential requirement among handset manufacturers, while highly integrated chips and advanced 3D packaging design are the preferred solutions to optimize cost, power and form factor (IC footprint and thickness). Spurred by the need for higher performance to run AI applications, various complex software computations and higher resolution video, the migration to advanced process technologies will certainly continue. 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 smartphone market.

#### High Performance Computing (HPC)

The HPC platform includes PCs, tablets, game consoles, servers, base stations and more. Major HPC unit shipments grew 10% in 2021, driven by the COVID-19 pandemic "stay at home economy", server and data center upgrade cycle to accommodate rapidly growing data traffic and to fulfill the expanding needs of AI applications, and continued 5G base station deployment.

Following its strong performance in 2021, HPC unit shipment growth is projected to be low-single-digit in 2022. However, the accelerated-digitalization stimulated by COVID-19 pandemic had induced a structural increase in HPC-related semiconductor demand. As industry embarks upon the 5G era, an increasingly intelligent and more connected world will fuel massive requirements for computation power as well as a great need for energy-efficient computing. All these require higher performance and more power-efficient CPUs, GPUs, 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 our technology leadership in these areas.

### Internet of Things (IoT)

The IoT platform includes various types of connected devices, such as smart wearables, smart speakers, smart health devices, home automation devices, surveillance systems, smart city, and smart manufacturing. Boosted by the digital transformation, IoT unit shipments grew 30% in 2021, with home automation devices, smart watches and smart health devices as the major growth drivers

These same drivers are expected to continue their momentum in 2022, leading to a larger than 20% growth in IoT unit shipments. In addition, the COVID-19 pandemic continues to change consumers' life and work styles, spurring more applications for smart home and health management, while the enterprises also accelerate digital transformation, driving the demand for enterprise IoT devices. By adding more AI functions, IoT devices are becoming more intelligent IoT devices and further drive demand for more powerful yet lower power-consuming controllers, connectivity ICs and sensors. In addition to offering the industry's most leading technology, TSMC also offers customers ultra-low power process technologies to meet industry trends and help them succeed in the marketplace.

### Automotive

Worldwide car unit sales grew 3% in 2021, driven by strong end-demand recovery but constrained by unexpected chip shortages and supply-chain disruptions caused by several natural disasters including a snowstorm in Texas, fire accident in Japan, as well as the COVID-19 resurgence in Southeast Asia. In 2022, global car unit sales are expected to post growth between high-single-digit to low-teens driven by the pent-up demand, improved semiconductor supply, and better supply chain management.

The entire automotive industry is moving in the direction towards "greener, safer, and smarter," which will accelerate the adoption of electric vehicles (EVs), advanced driver assistance systems (ADAS), and smart cockpit/infotainment systems. All these will lead to increased demand for AP/MCU/ASIC processors, in-car networking, sensors, and Power Management ICs, thus continuously increasing the silicon content per car. TSMC offers a wide variety of process technologies to enable customers to deliver competitive products in the automotive market.

### Digital Consumer Electronics (DCE)

TV demand, although stimulated by the COVID-19 pandemic "stay at home economy," was curtailed by the increased cost of TV panels, resulting in a 3% decline in unit shipments in 2021.

While set-top box (STB) demand, bolstered by 4K and HDR upgrades, grew in 2021, other consumer products such as digital cameras and cordless phones continued to decline due to stagnant demand and cannibalization by smartphones. Overall, the DCE market is expected to decline low-single-digit in 2022, while certain higher-end segments such as mini-LED, OLED, high frame rate (HFR) 4K and smart TVs continue to show positive growth.

AI-enabled functions like picture quality enhancement, super resolution upscaling to 4K/8K, and voice control are increasingly incorporated in TVs. TSMC advanced technologies will continue to support customers in creating and differentiating their innovative products in this market.

## 4. TSMC's Trinity of Strengths

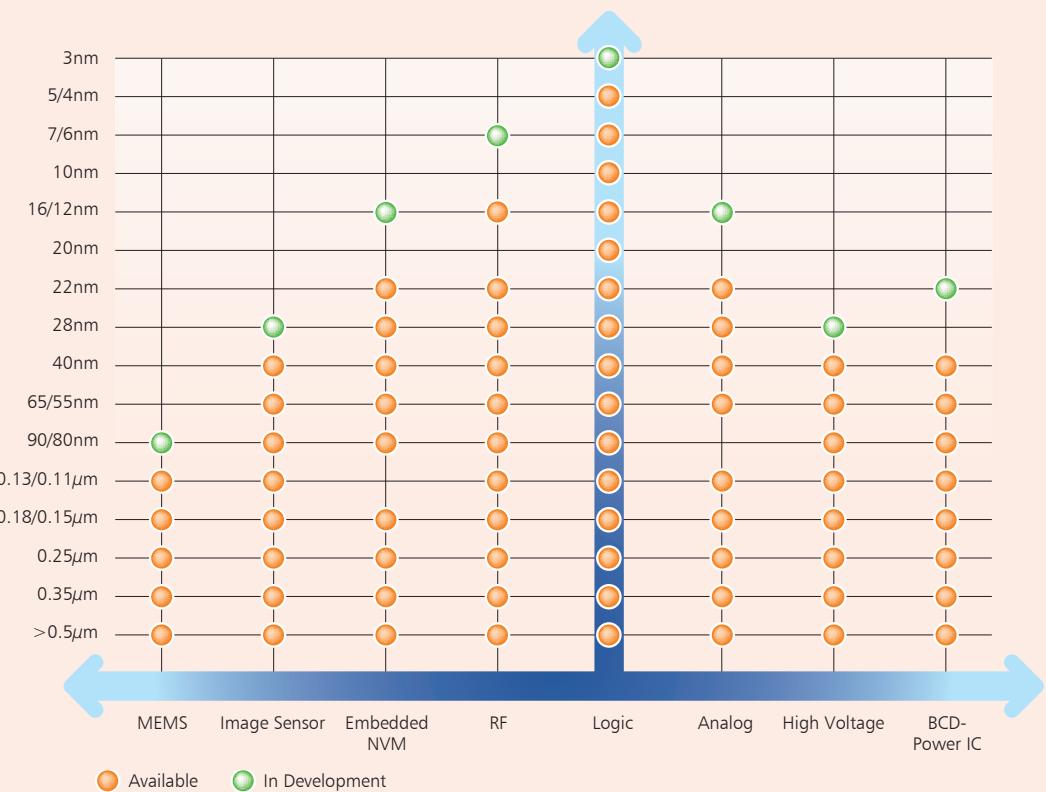
TSMC's growth has outperformed the overall semiconductor industry for all but two years since the company's founding. We have been able to achieve this track record by unleashing the innovation of our customers. We do not compete with our customers but support them as they grow, and participate in their success as they flourish. Our ability to unleash innovation is rooted in our trinity of strengths: Technology Leadership, Manufacturing Excellence, and Customer Trust.

Each component of the trinity plays a critical part. Our Technology Leadership allows us to provide leading-edge technologies to serve the most advanced product designs, and also enables a broad portfolio of specialty processes offerings for a diverse spectrum of IC designers. Our Manufacturing Excellence offers customers the fastest time-to-volume for their products and gives us the flexible capacity to not only manufacture for the foundry segment's largest customer base, but also to provide more capacity when their products succeed and begin to generate high demand. Finally, Customer Trust keeps the goals of TSMC and its customers aligned, because we do not believe long-term success is possible if our customers do not succeed.

### Technology Leadership

As a semiconductor industry leader, TSMC provides the broadest range of advanced, specialty and advanced packaging technology services. Our technology offerings possess the breadth of specialty technologies to suit the needs of a broad array of customers, and our leading-edge technology development has the depth to give customers a head start in the next wave of fast-growing product segments. We commit considerable resources to maintain this competitive advantage in technology: In 2021, TSMC's R&D spending totaled approximately US\$4.47 billion, or close to 8% of revenues.

### Comprehensive Technology Portfolio



TSMC has focused its R&D efforts on enabling the Company to continually offer its customers first-to-market, leading-edge technologies and design solutions that contribute to their product success. Following the successful volume production of 5nm technology, the Company's R&D organization continued to fuel the pipeline of technological innovation needed to maintain industry leadership. TSMC's 3nm technology entered risk production in 2021 and is on track to begin volume production in 2022. The Company plans to offer 2nm technology in 2025 and is continuing research and exploratory studies for nodes beyond 2nm.

7nm FinFET (N7), which has been in volume production for customers' 5G and high-performance computing products for several years, expanded to consumer and automotive products in 2021. 6nm FinFET (N6) technology, which started volume production in 2020, was widely adopted in mobile, high performance computing, and consumer products in 2021, and 4nm FinFET (N4) technology, an enhanced version of 5nm FinFET (N5) technology, started risk production for customer products in 2021 and volume production is expected in 2022.

In addition to CMOS logic, TSMC conducts R&D on a wide range of other semiconductor technologies that provide the functionality required by customers for mobile SoC and other applications. Highlights in 2021 include:

- Qualifying the fifth generation (Gen-5) chip on wafer on substrate (CoWoS®) with Si interposer area up to 2,500mm<sup>2</sup>, which can accommodate at least two SoC logic and eight HBM (high bandwidth memory) chiplet stacks
- Successfully qualifying InFO-PoP Gen-7 for mobile applications with enhanced thermal performance
- Entering volume production of 40nm resistive random access memory (RRAM), 28nm and 22nm nodes ready for production as a low-cost solution for the price sensitive IoT market
- Increasing productivity of 22nm magnetic random access memory (MRAM), and achieved technical qualification in 2021, for next generation embedded memory MCUs, automotive devices, IoT and AI applications
- Achieving 13% pixel size scaling down on Quad Phase Detection (QPD) CMOS image sensors structure for the mobile imaging market

TSMC's design enablement team also provides customers with comprehensive support to optimize design productivity and reduce cycle time, enabling their products to go from the designer's desk to the marketplace as short a time as possible. Our design support includes design flows for electronic design automation (EDA); silicon-proven IP building blocks, process design kits (PDKs), and technology files. As of 2021, the Company has expanded its library and silicon IP portfolio to contain more than 40,000 items, a 14% increase over 2020, and has provided customers more than 38,000 tech files and 2,600 PDKs.

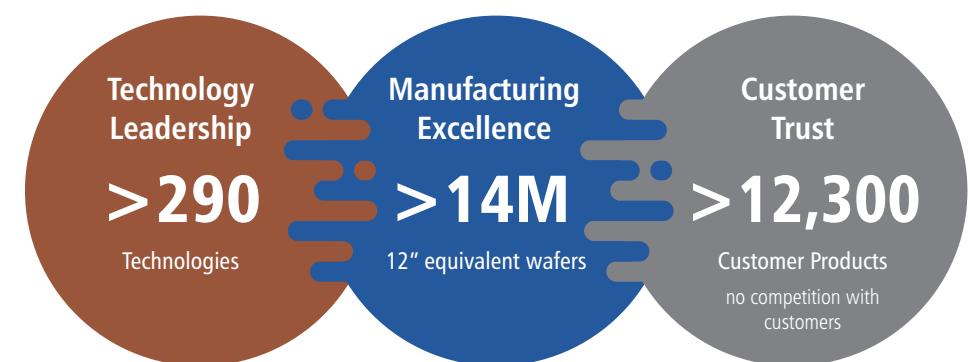
### Manufacturing Excellence

TSMC deployed 291 distinct process technologies, and manufactured 12,302 products for 535 customers in 2021, making it the world's most diversified and largest provider of logic IC capacity. TSMC's unique manufacturing system is tailored to manage the diverse manufacturing requirements of each customer, product, and technology without compromising speed, precision, and flexibility to adapt to changing circumstances. At the same time, our people and systems deliver these results in the leanest and most efficient way possible to support TSMC's profitability.

For each new technology node, TSMC has always been the first effective capacity provider in the foundry segment with the best yield and the fastest ramping speed, enabling customers' early time to market. TSMC has integrated intelligence of processes, machine tuning, manufacturing know-how, and AI technologies to create an intelligent manufacturing environment. Intelligent manufacturing

technologies are widely applied in scheduling and dispatching, employee productivity, equipment productivity, process and equipment control, quality defense, and robotic control in order to optimize quality, productivity, efficiency, and flexibility, while achieving real-time information analysis, improving forecast capability, maximizing cost effectiveness, and accelerating overall innovation. TSMC has also integrated new applications such as intelligent mobile devices, IoT, and mobile robots, and combined with intelligent automated material handling systems (AMHS) to consolidate wafer manufacturing data collection and analysis, utilize manufacturing resource efficiently, and maximize manufacturing effectiveness. TSMC continues to make semiconductor production smarter through AI that utilizes massive amounts of production data to achieve agile and intelligent operations. In addition, the Company has implemented augmented reality (AR) technology to diagnose remote equipment problems, and improve equipment installation efficiency during the pandemic period.

### TSMC Trinity of Strengths Enables Us to be Everyone's Foundry



### Customer Trust

Customer Trust is deeply ingrained as one of TSMC's four core values and is our keystone to unleashing innovation. It ensures that we win together with our customers in long-term relationships that last from one generation of technology to another. A critical foundation stone for customer trust is a commitment TSMC made when it first opened for business: to never compete with customers. As a result, TSMC does not design IC products, but chooses to focus all of its resources on serving as the trusted foundry partner for its customers.

The dedicated foundry business model gives TSMC a distinct advantage over IDM foundries which give priority to manufacturing its own IC products over those of its customers. Customers that work with TSMC will not need to be concerned that their products will compete with their foundry's products in the marketplace. Nor will they need to worry that their capacity needs will take a back seat to the capacity needs of the IDM's products.

TSMC's engagement with customers begins at the earliest stages of R&D to understand their technology needs, and continues through to design support, mask making, manufacturing, and packaging and testing. Along the way, customers can call on the support of a dedicated customer service team, as well as 24-hour a day, seven-day-a-week access to real-time information through TSMC-Online, a suite of web-based applications that facilitates design, engineering, and logistics collaboration. From the fundamental tenets of TSMC's business model to the fine-grained details of doing business together, customers can be assured that TSMC is committed to winning together with them.

## 5. Corporate Governance

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, the TSMC Board delegates various responsibilities and authority to two Board Committees: the Audit Committee and the Compensation Committee. Each Committee has a written charter approved by the Board. Each Committee's chairperson regularly reports to the Board on the activities and actions of the relevant committee.

### Board of Directors

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 the 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; current Chairman of Delta Electronics Inc., Mr. Yancey Hai; and current 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.

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 Committee and the Compensation Committee, the hiring of a financial expert consultant for the Audit Committee, and coordination with our Internal Audit department.

The second duty of the Board of Directors is to evaluate the management's performance and to appoint and dismiss officers of the Company when necessary. 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 important, concrete matters, such as capital appropriations, investment activities, dividends, etc.

The fourth duty of the Board of Directors is to provide guidance to the management team of the Company. Quarterly, TSMC's management reports to the Board on a variety of subjects, including ESG programs. The management also reviews the Company's business strategies with the Board and updates TSMC's Board on the progress of those strategies, obtaining Board guidance as appropriate.

## 6. Environmental, Social and Governance

As a global leader in the semiconductor industry, TSMC is dedicated to environmental, social and governance (ESG) issues. The Company collaborates with all stakeholders – employees, shareholders, customers, suppliers, government and society – to drive positive change for society by pursuing three primary missions: acting with integrity, strengthening environmental protection, and caring for the disadvantaged.

### TSMC's ESG Management

The ESG Steering Committee is committed to aligning TSMC closely with best practices in international sustainability. TSMC's Chairman leads the Steering committee, while the Chairperson of the ESG committee serves as Executive Secretary. Together with senior executives from a wide variety of functions, they work together to set the short-, medium- and long-term ESG strategic directions that link to the UN's sustainable development goals (SDGs).

The ESG Department coordinates a quarterly meeting on behalf of the ESG Committee that facilitates cross-divisional communication and issue-based discussions among cross-organizational teams, where committee members jointly set the Company's ESG strategies and targets, identify key issues for the year, draft ESG-related budgets, coordinate resource deployment and carry out annual projects. The committee pursues sustainability in the interest of all stakeholders and ensures the strategies are implemented effectively in daily operations.

The Board of Directors supervises the Company's sustainability management, strategies, and goals as well as performance measurement. The ESG Committee Chairperson reports quarterly to the Board of Directors on the implementation of plans and results.

In 2021, TSMC focused primarily on climate change strategy (including net zero emission, carbon footprint, and supply chain carbon emission management), human rights protection under the pandemic, maintaining a diverse and inclusive workplace, making sustainability disclosures and performing sustainable culture advocacy (i.e., TSMC ESG awards). At the same time, to attract and retain corporate executives and to link their compensation with shareholders' interests and ESG achievements, the Board of Directors approved 2021 Employee Restricted Stock Awards Rules and the issuance of 2021 employee restricted stock awards (RSAs). The issuance of the RSAs was approved at the 2021 Annual Shareholders' Meeting. The number of shares to be vested by corporate executives will be subject to a modifier to increase or decrease up to 10% based on the Compensation Committee's evaluation of the Company's ESG achievements.

### ESG Highlights in 2021

#### Net Zero Commitment

TSMC marked the International Day for the Preservation of the Ozone Layer on September 16, 2021, with a commitment to reach net zero emissions by 2050. To achieve its goal of net zero by 2050, TSMC will set related mitigation measures, continue to strengthen its wide variety of green innovations, and actively adopt renewable energy. The Company has set the short-term goals of zero emissions growth by 2025, and reducing emissions to year 2020 levels by 2030. TSMC also published its Task Force on Climate-related Financial Disclosures (TCFD) Report, becoming a semiconductor industry frontrunner in climate disclosure while taking actions towards the Company's environmental sustainability goals.

## 7. Financial Statements

### Vaccine Donation to Taiwan CDC

Throughout the COVID-19 pandemic, TSMC has leveraged its global logistics resources to support regions in need. As the pandemic intensified in Taiwan, TSMC took action to fulfill its corporate social responsibility, and purchased five million doses of BioNTech (BNT) 162b2 vaccine for donation to the Taiwan Centers for Disease Control (CDC) for public use. With support from multiple parties, including the Office of the President, Executive Yuan, Ministry of Health and Welfare, and the Taiwan CDC for authorization, contracts for the BNT162b2 vaccine were signed, and all purchased BNT162b2 vaccine were successfully donated to the Taiwan CDC.

### Supplier Sustainability Academy

Through its Supply Online 360 platform, TSMC established the TSMC Supplier Sustainability Academy, which provides free online learning resources to suppliers and makes those resources available to the general public. These courses provide lively interactive experiences on topics including environmental protection, ethics, labor, safety and health and include exams to optimize learning effectiveness. The TSMC Supplier Sustainability Academy provides a diverse range of courses and will continue to expand its curriculum. TSMC also plans to cooperate with external organizations, including SEMI and the Corporate Synergy Development Center (CSD), to develop courses based on the needs of the industry.

### Upholding Rights of Migrant Workers During the Pandemic

As a global semiconductor industry leader, TSMC believes that respecting human rights and promoting a decent work environment are important to the Company and the supply chain. TSMC issued the statement "Supply Chain Partners Should Ensure Protection of Human Rights During the COVID-19 Pandemic" in July 2021 so that our subsidiaries and supply chain partners carry out anti-pandemic measures for migrant workers in an appropriate fashion. To broaden communication channels, TSMC translated its statement to migrant workers' native languages, and inspected the working environment and dormitories of migrant workers employed by domestic supply chain partners.



### Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries Consolidated Condensed Balance Sheets

December 31, 2017 - 2021

(In Millions of New Taiwan Dollars (NTD) and U.S. Dollars (USD))

	2021		2020		2019		2018		2017	
	USD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD
<b>ASSETS</b>										
Current Assets										
Cash and Cash Equivalents	\$ 38,484	\$ 1,064,990	\$ 660,171	\$ 455,399	\$ 577,815	\$ 553,392				
Investments in Marketable Financial Instruments	4,461	123,465	131,306	128,049	117,367	95,967				
Accounts Receivable	7,166	198,302	146,038	139,771	129,198	122,317				
Inventories	6,978	193,102	137,353	82,981	103,231	73,881				
Other Current Assets	983	27,214	17,317	16,414	24,069	11,646				
Total Current Assets	58,072	1,607,073	1,092,185	822,614	951,680	857,203				
Non-current Assets										
Long-term Investments	1,062	29,384	27,728	30,172	29,305	41,569				
Property, Plant and Equipment	71,371	1,975,119	1,555,589	1,352,377	1,072,050	1,062,543				
Right-of-use, Intangible and Other Non-current Assets	4,116	113,927	85,209	59,642	37,093	30,547				
Total Non-current Assets	76,549	2,118,430	1,668,526	1,442,191	1,138,448	1,134,659				
Total Assets	\$ 134,621	\$ 3,725,503	\$ 2,760,711	\$ 2,264,805	\$ 2,090,128	\$ 1,991,862				
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>										
Current Liabilities										
Short-term Loans	\$ 4,153	\$ 114,921	\$ 88,559	\$ 118,522	\$ 88,755	\$ 63,767				
Accounts Payable	1,761	48,723	41,095	40,206	34,357	30,069				
Payables to Contractors and Equipment Suppliers	5,266	145,742	157,805	140,811	43,134	55,724				
Cash Dividends Payable	5,153	142,617	129,652	129,652	-	-				
Accrued Expenses and Other Current Liabilities	10,224	282,933	197,440	129,745	139,397	150,746				
Current Portion of Bonds Payable and Bank Loans	165	4,567	2,600	31,800	34,900	58,401				
Total Current Liabilities	26,722	739,503	617,151	590,736	340,543	358,707				
Non-current Liabilities										
Bonds Payable	22,045	610,071	254,105	25,100	56,900	91,800				
Other Non-current Liabilities	7,415	205,196	38,833	26,874	15,189	18,595				
Total Non-current Liabilities	29,460	815,267	292,938	51,974	72,089	110,395				
Total Liabilities	56,182	1,554,770	910,089	642,710	412,632	469,102				
<b>Equity Attributable to Shareholders of the Parent</b>										
Capital Stock at Par Value	9,370	259,304	259,304	259,304	259,304	259,304				
Capital Surplus	2,340	64,762	56,347	56,340	56,316	56,310				
Legal Capital Reserve	11,243	311,147	311,147	311,147	311,147	276,034				
Special Capital Reserve	2,143	59,304	42,259	10,675	26,907	-				
Unappropriated Earnings	55,517	1,536,378	1,235,280	1,011,513	1,073,706	991,639				
Others	(2,262)	(62,609)	(54,680)	(27,569)	(15,450)	(26,918)				
Equity Attributable to Shareholders of the Parent	78,351	2,168,286	1,849,657	1,621,410	1,676,817	1,522,058				
Noncontrolling Interests	88	2,447	965	685	679	702				
Total Shareholders' Equity	78,439	2,170,733	1,850,622	1,622,095	1,677,496	1,522,760				
Total Liabilities & Shareholders' Equity	\$ 134,621	\$ 3,725,503	\$ 2,760,711	\$ 2,264,805	\$ 2,090,128	\$ 1,991,862				

Note: Amounts in New Taiwan dollars have been translated into U.S. dollars at the rate of NT\$27.674 as of December 31, 2021.

**Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries**

**Consolidated Condensed Statements of Comprehensive Income**

For the Years Ended December 31, 2017 - 2021

(In Millions of New Taiwan Dollars (NTD) and U.S. Dollars (USD), Except for Earnings Per Share)

	2021		2020		2019		2018		2017	
	USD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD
Net Revenue	\$ 56,822	\$ 1,587,415	\$ 1,339,255	\$ 1,069,985	\$ 1,031,474	\$ 977,447				
Cost of Revenue	(27,487)	(767,878)	(628,125)	(577,283)	(533,600)	(482,621)				
Gross Profit	29,335	819,537	711,130	492,702	497,874	494,826				
Operating Expenses										
Research and Development Expenses	(4,465)	(124,735)	(109,486)	(91,419)	(85,895)	(80,733)				
Sales, General and Administrative Expenses	(1,592)	(44,488)	(35,570)	(28,086)	(26,254)	(27,169)				
Total Operating Expenses	(6,057)	(169,223)	(145,056)	(119,505)	(112,149)	(107,902)				
Other Operating Income and Expenses	(12)	(333)	710	(496)	(2,101)	(1,365)				
Income from Operations	23,266	649,981	566,784	372,701	383,624	385,559				
Non-operating Income and Expenses										
Share of Profits of Associates	201	5,603	3,593	2,844	3,058	2,986				
Net Interest Income (Expenses)	10	294	6,937	12,939	11,643	6,134				
Other Gains and Losses	259	7,248	7,463	1,361	(815)	1,454				
Total Non-operating Income and Expenses	470	13,145	17,993	17,144	13,886	10,574				
Income before Income Tax	23,736	663,126	584,777	389,845	397,510	396,133				
Income Tax Expenses	(2,364)	(66,053)	(66,619)	(44,501)	(46,326)	(52,986)				
Net Income	21,372	597,073	518,158	345,344	351,184	343,147				
Other Comprehensive Income (Losses)	(273)	(7,619)	(30,322)	(11,824)	9,837	(28,822)				
Comprehensive Income	\$ 21,099	\$ 589,454	\$ 487,836	\$ 333,520	\$ 361,021	\$ 314,325				
Net Income Attributable to:										
Shareholders of the Parent	\$ 21,353	\$ 596,540	\$ 517,885	\$ 345,264	\$ 351,131	\$ 343,111				
Noncontrolling Interests	19	533	273	80	53	36				
Earnings per Share - Diluted (NT\$)	\$ 0.82	\$ 23.01	\$ 19.97	\$ 13.32	\$ 13.54	\$ 13.23				
Earnings per ADR - Diluted (US\$)		\$ 4.12	\$ 3.39	\$ 2.15	\$ 2.24	\$ 2.17				

Note: Amounts in New Taiwan dollars have been translated into U.S. dollars at the weighted average rate of NT\$27.937 for the year ended December 31, 2021.

**Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries**

**Consolidated Condensed Cash Flow Statements**

For the Years Ended December 31, 2017 - 2021

(In Millions of New Taiwan Dollars (NTD) and U.S. Dollars (USD))

	2021		2020		2019		2018		2017	
	USD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD	NTD
Cash Flows from Operating Activities:										
Income Before Income Tax	\$ 23,736	\$ 663,126	\$ 584,777	\$ 389,845	\$ 397,510	\$ 396,133				
Depreciation & Amortization	15,120	422,395	331,725	286,884	292,546	260,143				
Share of Profits of Associates	(200)	(5,603)	(3,593)	(2,844)	(3,058)	(2,986)				
Income Taxes Paid	(2,989)	(83,498)	(51,362)	(52,044)	(45,383)	(63,620)				
Changes in Working Capital & Others	4,143	115,741	(38,880)	(6,702)	(67,661)	(4,352)				
Net Cash Generated by Operating Activities	39,810	1,112,161	822,667	615,139	573,954	585,318				
Cash Flows from Investing Activities:										
Interest Received	214	5,991	9,775	16,875	14,660	9,526				
Cash Dividend Received	89	2,499	3,487	2,039	3,421	4,391				
Acquisitions of:										
Property, Plant and Equipment	(30,039)	(839,196)	(507,239)	(460,422)	(315,582)	(330,588)				
Marketable Financial Instruments	(9,295)	(259,688)	(266,940)	(257,997)	(99,017)	(102,508)				
Financial Assets Carried at Cost	-	-	-	-	-	(1,313)				
Proceeds from Disposal or Redemption of:										
Property, Plant and Equipment	14	390	607	287	181	326				
Marketable Financial Instruments	9,449	263,973	267,247	247,212	89,159	87,461				
Financial Assets Carried at Cost	-	-	-	-	-	58				
Others	(370)	(10,335)	(12,719)	(6,796)	(7,091)	(3,518)				
Net Cash Used In Investing Activities	(29,938)	(836,366)	(505,782)	(458,802)	(314,269)	(336,165)				
Cash Flows from Financing Activities:										
Increase (Decrease) in Short-term Loans	1,277	35,668	(31,572)	31,804	23,923	10,394				
Proceeds from Issuance of Bonds	13,051	364,593	236,726	-	-	-				
Repayment of Bonds	(93)	(2,600)	(31,800)	(34,900)	(58,025)	(38,100)				
Repayment of Long-term Bank Loans	-	-	-	-	-	(31)				
Interest Paid	(137)	(3,834)	(1,781)	(3,597)	(3,233)	(3,483)				
Cash Dividends Paid for Common Stock	(9,514)	(265,786)	(259,304)	(259,304)	(207,443)	(181,513)				
Others	306	8,567	(884)	(3,642)	(346)	(2,964)				
Net Cash Used in Financing Activities	4,890	136,608	(88,615)	(269,639)	(245,124)	(215,697)				
Effect of Exchange Rate Changes on Cash and Cash Equivalents and Others	(272)	(7,584)	(23,498)	(9,114)	9,862	(21,318)				
Net Increase (Decrease) in Cash and Cash Equivalents	14,490	404,819	204,772	(122,416)	24,423	12,138				
Cash and Cash Equivalents at Beginning of Period	23,631	660,171	455,399	577,815	553,392	541,254				
Cash and Cash Equivalents at End of Period	\$ 38,121	\$ 1,064,990	\$ 660,171	\$ 455,399	\$ 577,815	\$ 553,392				

Note: Amounts in New Taiwan dollars have been translated into U.S. dollars at the weighted average rate of NT\$27.937 for the year ended December 31, 2021.

# Contact Information

## Taiwan

### Corporate Headquarters & Fab 12A

8, Li-Hsin Rd. 6, Hsinchu Science Park, Hsinchu 300-096, Taiwan, R.O.C.  
Tel: +886-3-5636688 Fax: +886-3-5637000

### R&D Center & Fab 12B

168, Park Ave. 2, Hsinchu Science Park, Hsinchu 300-091, Taiwan, R.O.C.  
Tel: +886-3-5636688 Fax: +886-3-6687827

### Fab 2, Fab 5

121, Park Ave. 3, Hsinchu Science Park, Hsinchu 300-096, Taiwan, R.O.C.  
Tel: +886-3-5636688 Fax: +886-3-5781546

### Fab 3

9, Creation Rd. 1, Hsinchu Science Park, Hsinchu 300-092, Taiwan, R.O.C.  
Tel: +886-3-5636688 Fax: +886-3-5781548

### Fab 6

1, Nan-Ke North Rd., Southern Taiwan Science Park, Tainan 741-014, Taiwan, R.O.C.  
Tel: +886-6-5056688 Fax: +886-6-5052057

### Fab 8

25, Li-Hsin Rd., Hsinchu Science Park, Hsinchu 300-094, Taiwan, R.O.C.  
Tel: +886-3-5636688 Fax: +886-3-5662051

### Fab 14A

1-1, Nan-Ke North Rd., Southern Taiwan Science Park, Tainan 741-014, Taiwan, R.O.C.  
Tel: +886-6-5056688 Fax: +886-6-5051262

### Fab 14B

17, Nan-Ke 9th Rd., Southern Taiwan Science Park, Tainan 741-014, Taiwan, R.O.C.  
Tel: +886-6-5056688 Fax: +886-6-5055217

### Fab 15A

1, Keya Rd. 6, Central Taiwan Science Park, Taichung 428-303, Taiwan, R. O. C.  
Tel: +886-4-27026688 Fax: +886-4-25607548

### Fab 15B

1, Xinko Rd., Central Taiwan Science Park, Taichung 407-728, Taiwan, R. O. C.  
Tel: +886-4-27026688 Fax: +886-4-24630372

### Fab 18A

8, Beiyuan Rd. 2, Southern Taiwan Science Park, Tainan 745-093, Taiwan, R.O.C.  
Tel: +886-6-5056688 Fax: +886-6-5050363

### Fab 18B

8, Beiyuan Rd. 2, Southern Taiwan Science Park, Tainan 745-093, Taiwan, R.O.C.  
Tel: +886-6-5056688

### Advanced Backend Fab 1

6, Creation Rd. 2, Hsinchu Science Park, Hsinchu 300-093, Taiwan, R.O.C.  
Tel: +886-3-5636688 Fax: +886-3-5773628

### Advanced Backend Fab 2

1-1, Nan-Ke North Rd., Southern Taiwan Science Park, Tainan 741-014, Taiwan, R.O.C.  
Tel: +886-6-5056688 Fax: +886-6-5051262

### Advanced Backend Fab 3

101, Longyuan 6th Rd., Longtan Dist., Taoyuan City 325-002, Taiwan, R.O.C.  
Tel: +886-3-5636688 Fax: +886-3-4804250

### Advanced Backend Fab 5

5, Keya W. Rd., Central Taiwan Science Park, Taichung 428-303, Taiwan, R.O.C.  
Tel: +886-4-27026688 Fax: +886-4-25609631

### Advanced Backend Fab 6

No.1, Kezhan 1st Rd., Zhunan Township, Miaoli County 350-012, Taiwan, R.O.C.

### VisEra Technologies Company Limited

12, Dusing Rd. 1, Hsinchu Science Park, Hsinchu 300-096, Taiwan, R.O.C.  
Tel: +886-3-6668788 Fax: +886-3-6662858

## Europe/North America

### TSMC Europe B.V.

World Trade Center, Zuidplein 60, 1077 XV Amsterdam, The Netherlands  
Tel: +31-20-3059900

### TSMC Design Technology Canada Inc.

1000 Innovation Drive, Suite 400, Kanata, ON K2K 3E7, Canada  
Tel: +613-576-1990

### TSMC North America

2851 Junction Avenue, San Jose, CA 95134, U.S.A.  
Tel: +1-408-3828000 Fax: +1-408-3828008

### TSMC Technology, Inc

TTI  
2851 Junction Avenue, San Jose, CA 95134, U.S.A.  
Tel: +1-408-3828000

### WaferTech, LLC

5509 N.W. Parker Street, Camas, WA 98607-9299, U.S.A.  
Tel: +1-360-8173000 Fax: +1-360-8173009

### TSMC Arizona Corporation

2510 W. Dunlap Avenue, #600, Phoenix, AZ 85021, U.S.A.  
Tel: +1 602-567-1688

### Common Share Transfer Agent and Registrar

Company: The Transfer Agency Department of CTBC Bank  
Address: 5F, 83, Sec. 1, Chung-Ching S. Rd., Taipei 100-003, Taiwan R.O.C.  
Tel: +886-2-66365566 Fax: +886-2-23116723  
Website: <http://www.ctbcbank.com>

### ADR Depository Bank

Company: Citibank, N.A.  
Depository Receipts Services  
Address: 388 Greenwich Street, New York, NY 10013, U.S.A.  
Website: <http://www.citi.com/dr>  
Tel: +1-877-2484237 (toll free)  
Tel: +1-781-5754555 (out of US) Fax: +1-201-3243284  
E-mail: [citibank@shareholders-online.com](mailto:citibank@shareholders-online.com)

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 <http://www.nyse.com> and <http://mops.twse.com.tw>

## Asia

### TSMC China Company Limited

4000, Wen Xiang Road, Songjiang, Shanghai, China  
Postcode: 201616  
Tel: +86-21-57768000 Fax: +86-21-57762525

### TSMC Nanjing Company Limited

16, Zifeng Road, Pukou Economic Development Zone, Nanjing, Jiangsu Province, China  
Postcode: 211806  
Tel: +86-25-57668000 Fax: +86-25-57712395

### TSMC Korea Limited

Rm 2104-2105 west, Hanshin Inter Valley 24 Building, 322, Teheran-ro, Gangnam-gu, Seoul 06211, Korea  
Tel: +82-2-20511688

### TSMC Japan Limited

21F, Queen's Tower C, 2-3-5, Minatomirai, Nishi-ku, Yokohama, Kanagawa, 220-6221, Japan  
Tel: +81-45-6820670

### TSMC Design Technology Japan, Inc.

10F, Minatomirai Grand Central Tower, 4-6-2, Minatomirai, Nishi-ku, Yokohama, Kanagawa, 220-0012, Japan  
Tel: +81-45-6644500

### TSMC Japan 3DIC R&D Center, Inc.

2F, 7D Bldg., West, 16-1 Onogawa, Tsukuba, Ibaraki, 305-8569, Japan  
Tel: +81 45 682 0670

### Japan Advanced Semiconductor Manufacturing, Inc.

6F, Shimotori NS Building 1-3-8 Shimotori, Chuo-ku, Kumamoto-shi, Kumamoto 860-0807, Japan

### Safe Harbor Notice:

The statements included in this business overview that are not historical in nature are "forward-looking statements" within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. TSMC cautions readers that forward-looking statements are subject to significant risks and uncertainties and are based on TSMC's current expectations. Actual results may differ materially from those contained in such forward-looking statements for a variety of reasons including, among others, risks associated with cyclical and market conditions in the semiconductor industry; demand and supply for TSMC's foundry manufacturing capacity in particular and for foundry manufacturing capacity in general; intense competition; the failure of one or more significant customers to continue to place the same level of orders with us; TSMC's ability to remain a technological leader in the semiconductor industry; TSMC's ability to manage its capacity; TSMC's ability to obtain, preserve and defend its intellectual property rights; natural disasters and other unexpected events which may disrupt production; and exchange rate fluctuations. Additional information as to these and other risk factors that may cause TSMC's actual results to differ materially from TSMC's forward-looking statements may be found in TSMC's Annual Report on Form 20-F, filed with the United States Securities and Exchange Commission (the "SEC") on April 14, 2022, and such other documents as TSMC may file with, or submit to, the SEC from time to time. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.

"TSMC", "tsmc", "Open Innovation Platform", "Open Innovation", "GIGAFAB", "CoWoS", "TSMC-SoIC", "3DFabric", "TSMC 3DFabric" and "N12e" are some of TSMC's registered and/or pending trademarks used by the Company in various jurisdictions, including Taiwan. All rights reserved.

Copyright © 2021 by Taiwan Semiconductor Manufacturing Company, Ltd. All rights reserved.