

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 20-F

(Mark One)

☐ REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934
OR

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2024

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

☐ SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES ACT OF 1934

Commission file number: 001-16125

日月光投資控股股份有限公司

(Exact name of Registrant as specified in its charter)

ASE Technology Holding Co., Ltd.

(Translation of Registrant's name into English)

REPUBLIC OF CHINA

(Jurisdiction of incorporation or organization)

26, Chin 3rd Rd.,

Nanzih Dist.,

Kaohsiung, 811, Taiwan

Republic of China

(Address of principal executive offices)

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(Name, telephone, e-mail and/or facsimile number and address of company contact person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Shares, par value NT\$10.00 each	ASX	The New York Stock Exchange*
* Traded in the form of American Depositary Receipts evidencing American Depositary Shares (the "ADSs"), each representing two Common Shares of ASE Technology Holding Co., Ltd.		

Securities registered or to be registered pursuant to Section 12(g) of the Act:

None

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:

None

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

As of December 31, 2024, 4,414,930,537 Common Shares, par value NT\$10 each, were outstanding.**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes ☒ No ☐

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes ☐ No ☒

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, or a non-accelerated filer, or an emerging growth company. See definition of "large accelerated filer," "accelerated filer, and "emerging growth company" in Rule 12b-2 of the Exchange Act. (Check one):

Large Accelerated Filer ☒

Accelerated Filer ☐

Non-accelerated Filer ☐

Emerging growth company ☐

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, 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. ☐

[†] The term “new or revised financial accounting standard” refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management’s assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant’s executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP ☐

International Financial Reporting Standards as issued by the International Accounting Standards Board ☒

Other ☐

If “Other” has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

☐ Item 17

☐ Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes ☐

No ☒

** As a result of the exercise of employee share options subsequent to December 31, 2024, as of January 31, 2025, we had 4,416,485,537 Common Shares outstanding.

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USE OF CERTAIN TERMS

Unless the context otherwise requires, references in this annual report to:

- “Advanced Shanghai” are to ASE Advanced Semiconductor (Shanghai) Limited, a company incorporated under the laws of the P.R.C. that spun off from ASESH AT in November 2020 and was disposed of in December 2021;
- “AMPI” are to Advanced Microelectronic Products Inc., a company incorporated under the laws of the R.O.C.;
- “ASDI” are to ASDI Assistance Direction S.A.S., a simplified limited liability company (*societe par actions simplifiee*) organized under the laws of France;
- “ASE,” “ASE Inc.” or “ASE Group” are to Advanced Semiconductor Engineering Inc. and, unless the context requires otherwise, its subsidiaries;
- “ASEPCAYMAN” are to ASEP Cayman Ltd., a company incorporated under the laws of the Cayman Islands, including its branch office in the Philippines operating under the name of ASE Co., Ltd. - Philippines Branch that carries out its business activities and is registered with the Philippine government, and its subsidiaries.
- “ASE Chung Li” are to ASE (Chung Li) Inc., a company previously incorporated under the laws of the R.O.C. that merged into ASE Inc. in 2004;
- “ASE Electronics” are to ASE Electronics Inc., a company incorporated under the laws of the R.O.C.;
- “ASE Japan” are to ASE Japan Co. Ltd., a company incorporated under the laws of Japan;
- “ASE Korea” are to ASE (Korea) Inc., a company incorporated under the laws of the Republic of Korea;
- “ASE Material” are to ASE Material Inc., a company previously incorporated under the laws of the R.O.C. that merged into ASE Inc. in 2004;
- “ASE Shanghai” or “ASEMTL” are to ASE (Shanghai) Inc., a company incorporated under the laws of the P.R.C.;
- “ASE Test” are to ASE Test Limited, a company incorporated under the laws of Singapore;
- “ASE Malaysia” are to ASE Electronics (M) Sdn. Bhd., a company incorporated under the laws of Malaysia;
- “ASE Test Taiwan” or “ASET” are to ASE Test, Inc., a company incorporated under the laws of the R.O.C.;
- “ASEH,” the “Company,” “ASE Technology Holding,” “we,” “us” or “our” are to ASE Technology Holding Co., Ltd. and, unless the context requires otherwise, its subsidiaries;
- “ASEKS” are to ASE (Kunshan) Inc., a company incorporated under the laws of the P.R.C. and was disposed of in December 2021;
- “ASEN” are to Suzhou ASEN Semiconductors Co., Ltd., a company incorporated under the laws of the P.R.C. and was disposed of in December 2021;
- “ASESH AT” or “ASESH” are to ASE Assembly & Test (Shanghai) Limited, a company incorporated under the laws of the P.R.C.;

- “ASEWH” are to ASE (Weihai), Inc., a company incorporated under the laws of the P.R.C. and was disposed of in December 2021;
- “CHE” are to ASE Cheonan, Inc., a company incorporated under the laws of the Republic of Korea;
- “Deposit Agreement” are to the deposit agreement, dated April 30, 2018, by and among ASE Technology Holding Co., Ltd., a company organized under the laws of the R.O.C. and previously known as “ASE Industrial Holding Co., Ltd.,” Citibank, N.A., as Depositary, and the Holders and Beneficial Owners of American Depositary Shares issued thereunder;
- “DIR” are to the Department of Investment Review of the R.O.C. Ministry of Economic Affairs;
- “EMS” are to electronic manufacturing services;
- “EU” are to the European Union;
- “Exchange Act” are to the U.S. Securities Exchange Act of 1934, as amended;
- “FAFG” or “FAFG Group” are to Financiere AFG, a simplified limited liability company (*societe par actions simplifiee*) organized under the laws of France and, unless the context requires otherwise, its subsidiaries;
- “FSC” are to the Financial Supervisory Commission of the R.O.C.;
- “GAPT” are to Global Advanced Packaging Technology Limited, a company incorporated in Cayman Islands;
- “HCC,” “HCC Group,” or “Hirschmann” are to Hirschmann Car Communication Holding S.a.r.l., a company organized under the laws of Luxembourg and, unless the context requires otherwise, its subsidiaries;
- “Hung Ching” or “HC” are to Hung Ching Development & Construction Co. Ltd., a company incorporated under the laws of the R.O.C. Hung Ching is our equity method investee;
- “IFRS Accounting Standards” are to International Financial Reporting Standards, International Accounting Standards and Interpretations as issued by the International Accounting Standards Board;
- “ISE Shanghai” are to ISE Labs, China, Ltd., a company incorporated under the laws of the P.R.C.;
- “ISE Labs” are to ISE Labs, Inc., a corporation incorporated under the laws of the State of California;
- “Initial SPIL Tender Offer” are to ASE’s offer to purchase 779,000,000 common shares (including common shares represented by outstanding American depositary shares) of SPIL through concurrent tender offers in the R.O.C. and the U.S., at a price of NT\$45 per SPIL common share and NT\$225 per SPIL American depositary share, commenced on August 24, 2015 and expired on September 22, 2015;
- “Joint Share Exchange Agreement” are to the joint share exchange agreement entered into between ASE and SPIL on June 30, 2016;
- “Korea” or “South Korea” are to the Republic of Korea;
- “NYSE” are to New York Stock Exchange;
- “PCAOB” are to the Public Company Accounting Oversight Board (United States);
- “PowerASE” are to PowerASE Technology Inc., a company incorporated under the laws of the R.O.C., which was merged into ASE Inc. in 2012;

- “PPA Effects” are to the earnings effects from purchase price allocation (the “PPA”). “PPA of SPIL Acquisition” is the allocation of ASEH’s purchase price of SPIL into identifiable assets acquired and liabilities assumed from SPIL based on their fair values. The fair value write-up results in earnings effects over time which generate increased operating costs, operating expenses, other operating income and expenses and non-operating expenses;
- “P.R.C.” are to the People’s Republic of China, including Hong Kong and Macau;
- “P.R.C. Regulations” are to the Regulations Governing Securities Investment and Futures Trading in Taiwan by Mainland Area Investors;
- “QDII” are to qualified domestic institutional investors;
- “Republic of China,” “the R.O.C.” and “Taiwan” are to the Republic of China, including Taiwan and certain other possessions;
- “R.O.C. Trading Day” are to a day when TWSE is open for business;
- “SEC” are to the Securities and Exchange Commission of the United States;
- “Second SPIL Tender Offer” are to ASE’s offer to purchase 770,000,000 common shares (including common shares represented by outstanding American depositary shares) of SPIL through concurrent tender offers in the R.O.C. and the U.S., at a price of NT\$55 per SPIL common share and NT\$275 per SPIL American depositary share, commenced on December 29, 2015 and expired on March 17, 2016 due to failure to obtain regulatory approval from the Taiwan Fair Trade Commission (the “TFTC”) prior to the expiration of the Second SPIL Tender Offer;
- “Securities Act” are to the U.S. Securities Act of 1933, as amended;
- “Share Exchange” are to the statutory share exchange pursuant to the laws of the Republic of China, through which ASEH (i) acquired all issued shares of ASE in exchange for shares of ASEH using the share exchange ratio and (ii) acquired all issued shares of SPIL using the cash consideration;
- “SiP” are to system-in-package;
- “SPIL” or “SPIL Group” are to Siliconware Precision Industries Co., Ltd., and, unless the context requires otherwise, its subsidiaries;
- “SPIL Acquisition” are to ASEH’s effort to effect an acquisition of 100% of the common shares and American depositary shares of SPIL pursuant to the Joint Share Exchange Agreement;
- “SZ” are to Siliconware Technology (Suzhou) Limited, a company incorporated under the laws of the P.R.C.;
- “Taiwan-IFRS” are to the Regulations Governing the Preparation of Financial Reports by Securities Issuers, the IFRS Accounting Standards as well as related guidance translated by Accounting Research and Development Foundation and endorsed by the FSC;
- “TWSE” are to Taiwan Stock Exchange;
- “Universal Scientific Industrial” or “USI” are to Universal Scientific Industrial Co., Ltd., a company incorporated under the laws of the R.O.C.;
- “USIFR” are to Universal Scientific Industrial (France), a simplified limited liability company (*societe par actions simplifiee*) organized under the laws of France;
- “USI Shanghai” or “USISH” are to Universal Scientific Industrial (Shanghai) Co., Ltd., a company incorporated under the laws of the P.R.C.;

- “U.S.” refers to the United States of America;
- “USI Group” are to USI Inc. and its subsidiaries;
- “USI Inc.” are to USI Inc., a company incorporated under the laws of the R.O.C.;
- “Wuxi Tongzhi” are to Wuxi Tongzhi Microelectronics Co., Ltd., a company incorporated under the laws of the P.R.C.

We publish our financial statements in New Taiwan dollars, the lawful currency of the R.O.C. In this annual report, references to “United States dollars,” “U.S. dollars” and “US\$” are to the currency of the U.S.; references to “New Taiwan dollars,” “NT dollars” and “NT\$” are to the currency of the R.O.C.; references to “RMB” are to the currency of the P.R.C.; references to “JPY” are to the currency of Japan; references to “MYR” are to the currency of Malaysia; references to “SGD” are to the currency of the Republic of Singapore; references to “KRW” are to the currency of the Republic of Korea; references to “EUR” are to the currency of the EU; references to “PLN” are to the currency of Poland; references to “HKD” are to the currency of Hong Kong; references to “TND” are to the currency of Tunisia; and references to “MXN” are to the currency of Mexico. Unless otherwise noted, all translations from NT dollars to U.S. dollars were made at the exchange rate as set forth in the H.10 weekly statistical release of the Federal Reserve System of the United States (the “Federal Reserve Board”) as of December 31, 2024, which was NT\$32.79=US\$1.00, and all translations from RMB to U.S. dollars were made at the exchange rate as set forth in the H.10 weekly statistical release of the Federal Reserve Board as of December 31, 2024, which was RMB7.2993=US\$1.00. All amounts translated into U.S. dollars in this annual report are provided solely for your convenience and no representation is made that the NT dollar, RMB or U.S. dollar amounts referred to herein could have been or could be converted into U.S. dollars or NT dollars/RMB, as the case may be, at any particular rate or at all. On March 14, 2025, the exchange rate between NT dollars and U.S. dollars as set forth in the H.10 weekly statistical release by the Federal Reserve Board was NT\$32.97=US\$1.00. On March 14, 2025, the exchange rate between RMB and U.S. dollars as set forth in the H.10 weekly statistical release by the Federal Reserve Board was RMB7.2377=US\$1.00.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 20-F contains “forward-looking statements” within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act. Although these forward-looking statements, which may include statements regarding our future results of operations, financial condition, or business prospects, are based on our own information and information from other sources we believe to be reliable, you should not place undue reliance on these forward-looking statements, which apply only as of the date of this annual report. The words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “plan” and similar expressions, as they relate to us, are intended to identify these forward-looking statements in this annual report. Our actual results of operations, financial condition or business prospects may differ materially from those expressed or implied in these forward-looking statements for a variety of reasons, including risks associated with cyclicalities and market conditions in the semiconductor or electronics industry; changes in our regulatory environment, including our ability to comply with new or stricter environmental regulations and to resolve environmental liabilities; demand for the outsourced semiconductor packaging, testing and EMS we offer and for such outsourced services generally; the highly competitive semiconductor or manufacturing industry we are involved in; our ability to introduce new technologies in order to remain competitive; international business activities; our business strategy; our future expansion plans and capital expenditures; the strained relationship between the R.O.C. and the P.R.C.; general economic and political conditions; the recent global economic crisis; possible disruptions in commercial activities caused by natural or human-induced disasters; fluctuations in foreign currency exchange rates; and other factors. For a discussion of these risks and other factors, see “Item 3. Key Information—Risk Factors.”

PART I

Item 1. Identity of Directors, Senior Management and Advisers

Not applicable.

Item 2. Offer Statistics and Expected Timetable

Not applicable.

Item 3. Key Information

[RESERVED]

CAPITALIZATION AND INDEBTEDNESS

Not applicable.

REASON FOR THE OFFER AND USE OF PROCEEDS

Not applicable.

RISK FACTORS

Below please find a summary of the principal risks we face, organized under relevant headings.

Risks Relating to Our Business

- Since we are dependent on the highly cyclical semiconductor and electronics industries and conditions in the markets for the end-use applications of our products, our revenues and net income may fluctuate significantly.
- A reversal or slowdown in the outsourcing trend for semiconductor packaging and testing services and EMS could adversely affect our growth prospects and profitability.
- If we are unable to compete favorably in the highly competitive markets of semiconductor packaging and testing and EMS, our revenues and net income may decrease.
- Our profitability depends on our ability to respond to rapid technological changes in the semiconductor industry.
- Our operating results are subject to significant fluctuations, which could adversely affect the market value of our Common Shares and ADSs.
- Due to our high percentage of fixed costs, we may be unable to maintain our gross margin at past levels if we are unable to achieve relatively high capacity utilization rates.
- We may not be successful in pursuing mergers and acquisitions. Any mergers or acquisitions we make may lead to a diversion of management resources.
- The loss of a large customer or disruption of our strategic alliance or other commercial arrangements with semiconductor foundries and providers of other complementary semiconductor manufacturing services may result in a decline in our revenues and profitability.
- We rely on a limited number of key customers in certain products for our revenues, and our results of operations may be adversely affected by a reduction of our key customers' business.
- Our revenues and profitability may decline if we are unable to obtain adequate supplies of raw materials and energy in a timely manner and at a reasonable price.

- If we are unable to manage our expansion or investments effectively, our growth prospects may be limited, and our future profitability and core business operations may be adversely affected.
- If we are unable to obtain sufficient funding in a timely manner or on acceptable terms, our results of operations and financial conditions may be materially and adversely affected.
- Any global political, economic, or financial crisis, as well as trade barriers, could adversely affect our business, financial condition, and results of operations.
- Inflation and fluctuations in interest rates could adversely affect our business, financial condition, results of operations, and cash flows.
- Fluctuations in exchange rates could adversely affect our business, results of operations, or financial condition.
- Any impairment charges may have a material adverse effect on our income.
- Cyber-attacks could harm our business, financial condition, and results of operations.

Risks Relating to Taiwan, R. O. C.

- Strained relations between the R.O.C. and the P.R.C. and disruptions in Taiwan's political environment caused by domestic political events could negatively affect our business and the market value of our Common Shares and ADSs.
- As a substantial portion of our business and operations are located in Taiwan, we are vulnerable to natural disasters including earthquakes, typhoons, droughts, as well as power outages and other industrial incidents, which could severely disrupt the normal operation of our business and adversely affect our results of operations.

Risks Relating to Ownership of Our Common Shares and ADSs

- The market for our Common Shares and ADSs may not be liquid.
- If a non-R.O.C. holder of ADSs withdraws and holds Common Shares, such holder of ADSs will be required to appoint a tax guarantor, local agent, and custodian in the R.O.C. and register with the TWSE or the Taipei Exchange in order to buy and sell securities on the TWSE.
- We may not continue to declare cash dividends in any particular amount.
- Holders of Common Shares and ADSs may experience dilution if we issue stock bonuses, share options, or restricted stocks to employees or sell additional equity or equity-linked securities.

Below please find the detailed analysis of the principal risks we face.

Risks Relating to Our Business

Since we are dependent on the highly cyclical semiconductor and electronics industries and conditions in the markets for the end-use applications of our products, our revenues and net income may fluctuate significantly.

Our business is affected by market conditions in the highly cyclical semiconductor and electronics industries. Most of our customers operate in this industry, and variations in order levels from our customers and service fee rates may result in volatility in our revenues and net income. From time to time, the semiconductor and electronics industries experience significant, and sometimes prolonged, downturns. As our business is, and will continue to be, dependent on the requirements for independent packaging, testing and EMS, any future downturn in the industry would reduce demand for our services. If we cannot reduce our costs or adjust our product mix to sufficiently offset any decline in sales volumes, our profitability will suffer, and we may incur losses.

Market conditions in the semiconductor and electronics industries depend to a large degree on conditions in the markets for the end-use applications of various products, such as communications, computing, and consumer electronics products. Any deterioration of conditions in the markets for the end-use applications would reduce demand for our services and would likely have a material adverse effect on our financial condition and results of operations. In 2024, approximately 50.9%, 18.1% and 31.0% of our operating revenues from packaging and testing of semiconductors were attributed to communications, computing and consumer electronics/industrial/automotive/other applications, respectively. In the same year, approximately 34.7%, 10.1%, 31.7%, 11.6% and 11.9% of our operating revenues from EMS were attributed to communications, computing, consumer electronics applications, industrial, and automotive applications and others, respectively. Across end-use applications, our customers face intense competition and significant shifts in demand, which could put pricing pressure on our services and may adversely affect our revenues and net income.

A reversal or slowdown in the outsourcing trend for semiconductor packaging and testing services and EMS could adversely affect our growth prospects and profitability.

Semiconductor manufacturers that have their own in-house packaging and testing capabilities, known as integrated device manufacturers and original equipment manufacturers, have increasingly outsourced stages of the production process, including packaging, testing, electronic manufacturing, and assembly, to independent companies to reduce costs, eliminate product complexity, and meet fast-to-market requirements. In addition, the availability of advanced independent semiconductor manufacturing services has also enabled the growth of so-called “fabless” semiconductor companies that focus exclusively on design and marketing and outsource their manufacturing, packaging, and testing requirements to independent companies. We cannot ensure that these manufacturers and companies will continue to outsource their packaging, testing, and manufacturing requirements to third parties like us. Furthermore, during an economic downturn, these integrated device manufacturers typically rely more on their own in-house packaging and testing capabilities, therefore decreasing their need to outsource. A reversal of, or a slowdown in, this outsourcing trend could result in reduced demand for our services and adversely affect our growth prospects and profitability.

Global economic uncertainty could adversely affect the demand for our products and services, and a protracted global economic crisis would have a material adverse effect on us.

Global economic growth in recent years has faced more uncertainty. Our revenue and net income are impacted to a significant extent by economic and financial conditions in Asia and globally, as well as economic and financial conditions specific to our business. The global economy, markets and levels of spending by businesses and consumers are influenced by many factors beyond our control, including political instability, military conflicts (such as the ongoing Russia-Ukraine conflict), pandemics (such as coronaviruses and flu) and natural disasters (such as earthquakes, floods, and droughts).

There have been concerns about the relationships among the P.R.C. and other Asian countries, the relationship between the P.R.C. and the U.S., as well as the relationship between the U.S. and certain other Asian countries such as North Korea, which may result in or intensify potential conflicts in relation to territorial, regional security and trade disputes.

As of the date of this annual report, our business, results of operations, and financial condition have not been materially affected by the global trade tensions, military conflicts, pandemics or natural disasters. Nevertheless, any economic downturn or other future conflicts may cause our customers to cancel or reduce planned expenditures for our products and services. Any uncertainty or significant volatility in global economic conditions, including inflation, interest rates, and fluctuations in exchange rates, may negatively affect our business, results of operations, and financial condition.

If we are unable to compete favorably in the highly competitive markets of semiconductor packaging and testing and EMS, our revenues and net income may decrease.

The markets of semiconductor packaging and testing and EMS are very competitive. We face competition from many sources, including other independent semiconductor packaging and testing companies, integrated device manufacturers, and other EMS providers with large-scale manufacturing capabilities who can quickly react to market changes. In addition, some foundry players have actively invested and expanded their advanced packaging capacity and gained some customer bases with their services and solutions.

We believe that the principal competitive factors in our industry are:

- technological expertise;
- ability to provide total solutions to our customers, including integrated design, manufacturing, packaging and testing and EMS;
- ability to offer interconnect technologies at an optimal scale for our businesses;
- range of package types and testing platforms available;
- ability to work closely with our customers at the product development stage;
- responsiveness and flexibility;
- fast-to-market product development;
- capacity;
- diversity in facility locations;
- production yield; and
- prices.

We face increasing competition, as most of our customers obtain services from more than one source. Rapid technological advancements and aggressive pricing strategies by our competitors may continue to increase the level of competition. Our ability to successfully compete depends on factors both within and outside of our control and may be constrained by the distinct characteristics and production requirements of individual products. We cannot ensure that we will be able to continue to improve production efficiency and maintain reasonable profit for all our products.

In addition, some of our competitors may have superior financial, marketing, manufacturing, research and development and technological resources than we do. For example, the P.R.C. government has supported its domestic companies in the semiconductor industry, such as Jiangsu Changjiang Electronics Technology Co., Ltd. Similarly, our customers may face competition from their competitors in the P.R.C., and such competitors may also receive significant subsidies from the P.R.C. government. As we are upstream providers, the impact of such government policies on competition and price pressure of our customers may negatively impact our business. Increasing competition may lead to declines in product prices and profitability and could have a material adverse effect on our business, financial condition, results of operations, and future prospects.

Our profitability depends on our ability to respond to rapid technological changes in the semiconductor industry.

The semiconductor industry is characterized by rapid increases in the diversity and complexity of semiconductors. As a result, we expect that we will need to continually offer more sophisticated packaging and testing technologies and processes in order to respond to competitive industry conditions and customer requirements.

We dedicate substantial efforts to research and development and continue to develop new products in anticipation of future demand. However, there is no assurance that the launch of any new product will be successful or that we will be able to produce enough of these products to meet market demand. If we fail to develop, or obtain access to, advances technologies or processes or respond effectively to industry developments, we may become less competitive and less profitable. In addition, advances in technology typically lead to declining average selling prices for semiconductors packaged or tested with older technologies or processes. As a result, if we cannot reduce the costs associated with our services, the profitability of a given service and our overall profitability may decrease over time.

Our operating results are subject to significant fluctuations, which could adversely affect the market value of our Common Shares and ADSs.

Our operating results have varied significantly from period to period and may continue to vary in the future. Downward fluctuations in our operating results may result in decreases in the market price of our Common Shares and the ADSs. Among the more important factors affecting our quarterly and annual operating results are the following:

- changes in general economic and business conditions, particularly the cyclical nature of the semiconductor and electronics industries and the markets served by our customers;
- our ability to quickly adjust to unanticipated declines or shortfalls in demand and market prices;
- changes in prices for our products or services;
- volume of orders relative to our packaging, testing and manufacturing capacity;
- changes in costs and availability of raw materials, equipment and labor;
- our ability to obtain or develop substitute raw materials with lower cost;
- our ability to successfully develop or market new products or services;
- our ability to successfully manage product mix in response to changes in market demand and differences in margin associated with different products;
- timing of capital expenditures in anticipation of future orders;
- our ability to acquire, or design and produce, cost-competitive interconnect materials, and provide integrated solutions for EMS;
- fluctuations in the exchange rate;
- fluctuations in interest rates; and
- typhoons, earthquakes, droughts, epidemics, tsunamis and other natural disasters, as well as industrial and other incidents such as fires and power outages.

Due to the factors listed above, our future operating results or growth rates may be below the expectations of research analysts and investors. If so, the market price of our Common Shares and the ADSs, and thus the market value of your investment, may fall.

Due to our high percentage of fixed costs, we may be unable to maintain our gross margin at past levels if we are unable to achieve relatively high capacity utilization rates.

Our operations, in particular our testing operations and leading-edge advanced packaging, are characterized by relatively high fixed costs. We expect to continue to incur substantial depreciation and other expenses in connection with our acquisitions of equipment and facilities. Our profitability depends not only on the pricing levels for our services or products, but also on utilization rates for our machinery and equipment, commonly referred to as “capacity utilization rates.” Increases or decreases in our capacity utilization rates can significantly affect gross margins since the unit cost generally decreases as fixed costs are allocated over a larger number of units. In periods of low demand, we experience relatively low capacity utilization rates in our operations, which lead to reduced margins. We cannot ensure that we will be able to maintain or surpass our past gross margin levels if we cannot consistently achieve or maintain relatively high capacity utilization rates.

We may not be successful in pursuing mergers and acquisitions. Any mergers or acquisitions we make may lead to a diversion of management resources.

Our future success may depend on acquiring businesses and technologies, making investments, or forming joint ventures that complement, enhance, or expand our current product offerings or otherwise offer growth opportunities. In pursuing such acquisitions, we may face competition from other companies in the semiconductor industry. Our ability to acquire or invest in suitable targets may be limited by applicable laws and regulations in the R.O.C., P.R.C., U.S., European countries, and other jurisdictions where we do business. Even if we are successful in making such acquisitions or investments, we may have to expend substantial amounts of cash, incur debt, assume loss-making divisions, and incur other types of expenses. We may also face challenges in successfully integrating any acquired companies into our existing organization or in creating the anticipated synergistic benefits. Each of these risks could have a material adverse effect on our business, financial condition, and results of operations.

The loss of a large customer or disruption of our strategic alliance or other commercial arrangements with semiconductor foundries and providers of other complementary semiconductor manufacturing services may result in a decline in our revenues and profitability.

Although we have a large customer base, we have derived, and expect to continue to derive, a large portion of our revenues from a small group of customers during any particular period due in part to the concentration of market share in the semiconductor and electronics industries. Our five largest customers together accounted for approximately 50.2%, 48.0%, and 48.4% of our operating revenues in 2022, 2023, and 2024, respectively. One customer (including other customers for whom OEM services were provided on its behalf) accounted for more than 10.0% of our operating revenues in 2022, 2023, and 2024. The demand for our services from a customer is directly dependent upon that customer's level of business activity, which could vary significantly from year to year. Our key customers typically operate in the cyclical semiconductor and electronic business and order levels have significantly varied from period to period in the past and may vary in the future. Some of these companies are relatively small, have limited operating histories and financial resources, and are highly exposed to the cyclicity of the industry. We cannot ensure that these customers or any other customers will continue to place orders with us in the future at the same levels as in past periods. The loss of one or more of our significant customers, or reduced orders by any one of them, and our inability to replace these customers or make up for such orders, could adversely affect our revenues and profitability. In addition, we have in the past reduced, and may in the future be requested to reduce, our prices to limit the level of order cancellations. Any price reduction would likely reduce our margins and profitability.

Since 1997, we have maintained a strategic alliance with Taiwan Semiconductor Manufacturing Company Limited, or TSMC, one of the largest dedicated semiconductor foundries in the world. TSMC designates us as its non-exclusive preferred provider of packaging and testing services for semiconductors manufactured by TSMC. Such strategic alliances, as well as our other commercial arrangements with providers of other complementary semiconductor manufacturing services, enable us to offer total semiconductor manufacturing solutions to our customers. These strategic alliances and other commercial arrangements may not achieve their anticipated commercial benefits and may be terminated at any time. Any failure in successfully maintaining such alliances, any termination of such alliances or our failure to enter substantially similar strategic alliances or commercial arrangements may adversely affect our competitiveness, revenues, and profitability.

We rely on a limited number of key customers in certain products for our revenues, and our results of operations may be adversely affected by a reduction of our key customers' business.

Our results of operations also depend on the performance and business of our key customers. Accordingly, risks that could seriously harm our key customers could harm us as well, including:

- loss of market share for our key customers' products;
- recession in our key customers' markets;
- failure of their products to gain widespread commercial acceptance; and
- our key customers' inability to manage their operations efficiently and effectively.

The launch and market acceptance of our individual key customers' products could significantly impact our product and customer mix, resulting in significant volatility in the demand for the solutions we offer and our results of operations. It is also possible that a key customer's market share with respect to its product may decline as its competitors introduce new products, which could adversely affect our results of operations, particularly if we are unable to sell our solutions to such competitors. Furthermore, sales of our key customers' products are subject to seasonal fluctuation.

Our revenues and profitability may decline if we are unable to obtain adequate supplies of raw materials and energy in a timely manner and at a reasonable price.

Our operations, such as packaging operations, substrate operations, and EMS require that we obtain adequate supplies of raw materials on a timely basis. Shortages in the supply of raw materials have in the past resulted in occasional price increases and delivery delays. In addition, the operations of some of our suppliers are vulnerable to natural disasters, such as earthquakes and typhoons, the occurrences of which may deteriorate and prolong the shortage or increase the uncertainty of the supply of raw materials.

Raw materials such as IC substrates are prone to supply shortages since such materials are produced by a limited number of suppliers, such as Kinsus Interconnect Technology Corporation, Nan Ya Printed Circuit Board Corporation, and Unimicron Technology Corporation. The growing demand for high-performance computing driven by artificial intelligence (or "AI"), and the supporting infrastructure such as servers, data centers, and networking equipment has resulted in increased demand for semiconductor chips. However, this demand has also led to greater complexity in chip and substrate design. Specifically, the Ajinomoto Build-up Film (ABF) substrate, a crucial component for manufacturing high-performance chips, may face a higher risk of supply shortages or extended lead times due to potential strong demand for AI, elevated manufacturing difficulty, and heavy capital requirements for capacity expansion.

Operations conducted through our wholly owned subsidiaries, ASE Electronics and ASE Shanghai, have improved our ability to obtain IC substrates on a timely basis and at a reasonable cost. In 2024, our interconnect materials operations supplied approximately 6.8% of our consolidated substrate requirements by value. We do not expect that these internal interconnect materials operations will be able to meet all our interconnect materials requirements for the foreseeable future. Consequently, we will remain dependent on market supply and demand for our substrates.

In addition, recent fluctuations in prices of precious metals, such as gold, have affected the price at which we have been able to purchase the principal raw materials we use in our packaging processes. We cannot guarantee that we will not experience shortages in the future or that we will be able to obtain adequate supplies of raw materials in a timely manner or at a reasonable price. Our revenues and net income could also decline under these circumstances, or if there are significant increases in the costs of raw materials that we cannot pass on to our customers.

Moreover, energy prices fluctuate based on events outside of our control. Rising global energy prices in recent years pose a significant challenge to our operations. As AI becomes more prevalent and developed, we expect the demand for and consumption of electricity to further increase. Any energy price increases may raise our costs and lower our margins. Although we may be able to pass through the impact of some energy price charges to some of our customers, we may not be able to pass all of these cost increases on to our customers. As a result, our results of operations and financial performance may be adversely impacted by such cost increases.

If we are unable to manage our expansion or investments effectively, our growth prospects may be limited, and our future profitability and core business operations may be adversely affected.

We have significantly expanded our operations through acquisitions and joint ventures in recent years. We anticipate that further expansion will be required as we adapt to the changing needs of customers. For our expansions and investments, see "Item 4. Information on the Company—Business Overview—Strategy—Strategically Expand and Streamline Production Capacity."

Expansion in general increases the complexity of operations and places significant strains on our management, operational, and financial resources. We also face uncertainties in creating strategic and operational synergies as we combine existing operations with the new sites. Furthermore, we may have limited experience in operating business in certain new countries or regions. As a result of our expansion, we may incur additional costs and expenses, such as hiring and training additional employees, devoting more of management's attention to operations and compliance, and allocating additional resources in dealing with potential disputes relating to its operations. The expected growth and expansion of our business will place significant demands on our management and operations teams and require significant additional resources to meet our needs, which may not be available at a reasonable price. If we cannot effectively manage our expansion or investments, we may not be able to execute our business plan, respond to competitive pressures, take advantage of market opportunities, satisfy customer requirements, or maintain high-quality product offerings, any of which could lead to inefficiencies, redundancies, and result in reduced growth prospects and profitability. We cannot ensure that we will be able to deploy and manage new business initiatives successfully or effectively.

If we are unable to obtain sufficient funding in a timely manner or on acceptable terms, our results of operations and financial conditions may be materially and adversely affected.

Our businesses regularly require significant capital investments in order to support the expansion of our facilities both domestically and globally. If we are required to rapidly increase our current geographical footprint to fulfill our customers' needs, our capital requirements may increase suddenly and significantly. In addition to capacity expansion, we will also need increasing levels of resources to fund our research and development activities in order to remain competitive, and to support operations outside of its existing footprint. We believe that our existing cash and cash equivalents, marketable securities, expected cash flow from operations, and existing credit lines under our loan facilities will be sufficient to meet our capital expenditures, working capital, and cash obligations under our existing debt and lease arrangements, and other requirements for at least the next twelve months.

Our ability to obtain external financing in the future is subject to a variety of uncertainties, including:

- our future financial condition, results of operations, and cash flows;
- general market conditions for financing activities by semiconductor or electronics companies; and
- economic, political, and other conditions in Taiwan and elsewhere.

If we are unable to obtain new or additional land or land use rights, additional equipment, or facilities in a timely manner and at a reasonable cost, our competitiveness and future profitability may be adversely affected.

In order to meet customer demand, we need to expand existing facilities or obtain suitable land for construction of new facilities. Both expansion and construction projects are currently underway or being contemplated. Such expansion or construction requires us to obtain land use or development rights. If we are unable to obtain new or additional land or land use rights in a timely manner, we could experience significant fulfillment delays in our customers' orders, resulting in negative impacts on our results of operations. In addition, semiconductor businesses are capital intensive and require significant investment in expensive equipment manufactured by a limited number of suppliers. The market for semiconductor equipment is characterized by intense demand, limited supply, and long delivery cycles. Our operations and expansion plans depend on our ability to obtain a significant amount of such equipment from a limited number of suppliers. From time to time, we have also leased equipment. We have no binding supply agreements with any of our suppliers and acquire our equipment on a purchase order basis, which exposes us to changing market conditions and other substantial risks. For example, shortages of capital equipment could result in an increase in the price of equipment and longer delivery times. Semiconductor products and services also require sizeable facilities. If we are unable to obtain equipment or facilities in a timely manner, we may be unable to fulfill our customers' orders, which could adversely affect our growth prospects as well as financial condition and results of operations. See "Item 4. Information on the Company—Business Overview—Equipment."

Our global manufacturing and sales activities subject us to risks associated with legal, political, economic, or other conditions which could negatively affect our business, financial status, and the market value of our Common Shares and ADSs.

Our principal executive office and production facilities are in the R.O.C, and the majority of our net revenues are derived from our operations in the R.O.C. and the P.R.C. In addition, we have operations worldwide and a significant percentage of our revenue comes from sales to overseas locations. Changes in policies and laws, including environmental regulations, as well as general political and economic conditions, security risks, health conditions, and possible disruptions in transportation networks in the various countries in which we operate, could adversely affect our business, and negatively impact our results of operations as well as the market price and liquidity of our Common Shares and ADSs.

Any global political, economic, or financial crisis, as well as trade barriers, could adversely affect our business, financial condition, and results of operations.

Any future political turmoil could cause revenue or profits for the semiconductor industry as a whole to decline dramatically. If economic or financial conditions for our customers were to deteriorate, the demand for our products and services may decline, which could adversely affect our business, financial condition, and results of operations.

Political changes in the U.S. have created uncertainty regarding future U.S. trade policies. For example, uncertainties in the U.S.-P.R.C. relationship, the broader political environment, or international trade policies could lead to further revisions in laws or regulations, changes in their interpretation and enforcement, increased taxation, trade sanctions, import or export duties and tariffs, or restrictions on trade, all of which may adversely affect our results of operations. The U.S. government has also enacted trade measures, including licensing requirements on exporting certain advanced computing and semiconductor manufacturing items, as well as AI-related items to the P.R.C. or other designated countries. On the other hand, in response to U.S. trade restrictions, the P.R.C. government has intensified its efforts to support domestic semiconductor companies through financial incentives and policy measures aimed at achieving self-sufficiency in semiconductor production and reduce reliance on foreign suppliers amid its heightened rivalry with the U.S. These measures further increase the uncertainty of our business operations related to the P.R.C. supply chain.

Furthermore, increasing economic uncertainty and the related investment risk in the P.R.C. resulting from trade tensions have heightened customers' concerns regarding production in the region. We build flexible and resilient supply chains to address shifts in market conditions and to satisfy customer needs, broadening our markets through expansion of overseas operations, joint ventures, acquisitions, and other strategic investments. While we strive to maintain a cost-competitive manufacturing and attract customers through supply chain diversification, fragmented operations may increase our vulnerability to market disruptions and adversely affect our results of operations.

We do business within the P.R.C. This may expose us to additional political, regulatory, economic, and foreign investment risks.

We have packaging, testing, EMS, and real estate subsidiaries in the P.R.C. that require approval and compliance with regulatory requirements. However, P.R.C. laws and regulations are often subject to varying interpretations, means of enforcement, and additional approvals from the relevant governmental authorities, which may be delayed or denied. The P.R.C. government holds significant discretion in matters relating to foreign investment, which may adversely affect our operations.

In addition, our controlling interest in USI Shanghai, an entity currently listed on the Shanghai Stock Exchange under the symbol "601231," makes us vulnerable to extreme price and volume fluctuations in the P.R.C. stock market that may indirectly affect the market price of our Common Shares and ADSs.

Furthermore, we have made several investments in the real estate development businesses in the P.R.C. The P.R.C. property market is volatile and may experience undersupply or oversupply, as well as property price fluctuations. Central and local governments frequently adjust monetary and other fiscal policies to prevent or curtail the overheating of the economy. Such policies may lead to changes in market conditions, including price instability, and imbalance of supply and demand with respect to office, residential, retail, entertainment, cultural, and intellectual properties. Our exposure to risks related to real estate development may also increase over time as a result of our expansion into such a business. We may continue to make investments in this area in the future and our diversification in this industry may put pressure on our managerial, financial, operational, and other resources. There can be no assurance that our investments in such a business will yield the anticipated returns and that our expansion into such a business, including the resulting diversion of management's attention, will not adversely affect our core business operations.

The escalation of tensions between South Korea and North Korea could have an adverse effect on our operations in South Korea and the market value of our shares.

The political relationship between South Korea and North Korea has been tense throughout Korea's modern history. The level of tension between the two countries has heightened and may increase abruptly as a result of current or future events. In recent years, there have been increasing security concerns stemming from North Korea's nuclear weapons and long-range missile testing, and uncertainty regarding North Korea's actions and potential responses from the international community. Although we do not derive any revenue from, nor sell any products in, North Korea, any further rising tension on the Korean Peninsula could affect our results of operations. For example, if North Korea experiences a leadership crisis, high-level contacts between South Korea and North Korea break down or military conflicts occur, could have a material adverse effect on our South Korea subsidiary, our business, financial condition, results of operations, and the market value of our Common Shares and ADSs.

We depend on selected personnel and could be negatively affected by the loss of their services.

We depend on the continued service of our executive officers and skilled technical personnel. Our business could suffer if we lose the services of any of these personnel and cannot adequately replace them. Although some of these management personnel have entered into employment agreements with us, they may nevertheless leave before the expiration of these agreements. We are not insured against the loss of the services of any of our personnel. In addition, the resulting disruption may shift these and other employees' attention from our business operations.

We may be required to increase substantially the number of employees as a result of our expansion plans, and there is intense recruiting and hiring competition in this industry. We may not be able to retain our present personnel or attract additional necessary qualified personnel. In addition, we may need to increase employee compensation levels in order to retain our existing officers and employees and attract the additional personnel that we expect to require. Recently, some companies have accelerated efforts to maliciously poach talented Taiwan semiconductor experts by offering high-level positions with substantial salaries. If the number of malicious acts involving technology theft increase, Taiwan's semiconductor industry would be seriously affected and our business would be adversely jeopardized.

Furthermore, a portion of the workforce at our facilities in Taiwan is foreign workers employed under work permits, which are subject to government regulations on renewal and other terms. Consequently, our business could suffer if Taiwan's regulations relating to the employment of foreign workers were to become significantly more restrictive or if we are otherwise unable to attract or retain these workers at a reasonable cost.

The ongoing legal proceeding involving Dr. Tien Wu may have an adverse impact on our business and cause our Common Shares and ADS price to decline.

On December 31, 2024 (the "December 31 judgment"), the Taiwan High Court Kaohsiung Branch Court issued a ruling in a criminal proceeding brought by the Taiwan Kaohsiung District Prosecutors Office, finding Dr. Tien Wu, our director and chief operating officer, guilty on certain charges and not guilty on others and sentencing him to 22 months of judicial custody. Dr. Tien Wu has filed an appeal against the portion of the judgment finding him guilty, and the case remains under the review of the Supreme Court of the R.O.C., with its final outcome still pending and uncertain. The Taiwan Kaohsiung District Prosecutors Office did not appeal the judgment, and the portion finding him not guilty has become final. If the December 31 judgment is not overturned on appeal, we may lose the services of Dr. Tien Wu moving forward. The case arises from an indictment filed in 2017 that alleged that Dr. Tien Wu violated Article 157-1 of the R.O.C. Securities and Exchange Act for insider trading activities involving SPIL's common shares conducted during the Initial SPIL Tender Offer, the Second SPIL Tender Offer, and negotiations of the memorandum of understanding in connection with the SPIL Acquisition. Dr. Tien Wu was accused of informing a friend about the aforementioned tender offers and negotiation ahead of the public announcements. After an investigation spanning over two years, the Taiwan Kaohsiung District Court, on February 5, 2020, found Dr. Tien Wu not guilty. On March 20, 2020, the Taiwan Kaohsiung District Prosecutors Office filed an appeal against the February 5, 2020 judgment, and the appeal was rejected by the Taiwan High Court Kaohsiung Branch Court on June 9, 2021 (the "June 9 judgment"). On July 2, 2021, the Kaohsiung Branch, Taiwan High Prosecutors Office filed another appeal against the June 9 judgment. The Supreme Court of the R.O.C. reversed the June 9 judgment and remanded this case to the Taiwan High Court Kaohsiung Branch Court on January 6, 2022. Upon remand, a trial was conducted, leading to the December 31 judgment. We have strengthened internal control measures after this incident, and no other directors or parties nor are expected to become a party to any current or future litigation in connection with this matter.

On October 26, 2018, the R.O.C. Securities and Futures Investors Protection Center (the “SFIPC”) filed a civil lawsuit against Dr. Tien Wu and ASEH, requesting the court to remove Dr. Tien Wu from ASEH’s board of directors based on Article 10-1 of the R.O.C. Securities Investor and Futures Trader Protection Act (the “Director Removal Case”). On August 25, 2020, the Taiwan Ciaotou District Court ruled in favor of Dr. Tien Wu. SFIPC filed an appeal against the August 25, 2020 judgment and the appeal was rejected by the Taiwan High Court Kaohsiung Branch Court on September 29, 2021 (the “September 29 judgment”). On October 20, 2021, SFIPC filed another appeal against the September 29 judgment. The Supreme Court of the R.O.C. reversed the September 29 judgment and remanded this case to the Taiwan High Court Kaohsiung Branch Court on May 25, 2022. On January 8, 2025, SFIPC’s appeal was rejected by the Taiwan High Court Kaohsiung Branch Court and SFIPC filed an appeal against the January 8, 2025 judgment which will be submitted to the Supreme Court of the R.O.C. for trial.

In addition to the Director Removal Case, on July 8, 2021, SFIPC filed an additional class action to request Dr. Tien Wu and other three defendants of the aforementioned criminal proceeding of insider trading to be jointly liable for the damages caused by the alleged insider trading activities. The Intellectual Property and Commercial Court of the R.O.C. ruled in favor of SFIPC and portion of the damages was awarded on August 18, 2022, and all defendants of this class action filed appeals against the August 18 judgment. The Supreme Court of the R.O.C. reversed the August 18 judgment and remanded the case to the Intellectual Property and Commercial Court on March 14, 2024, where it is now being tried. The proceedings in connection with this incident, or potential regulatory scrutiny, might attract further media attention. Any negative publicity in connection with the legal proceedings may adversely affect our brand and reputation, which might result in a material adverse impact on our business operations and prospects.

As we depend on the continuing service of our directors and executive officers, and we are not insured against the loss of service of any of our personnel, our business operations could suffer from the loss of services of any director or executive officer, including Dr. Tien Wu. There are no assurances that we will be able to find suitable replacement directors or executive officers.

Our insurance coverage may be inadequate to cover all our business risks.

Although we seek to obtain insurance for some of our primary operational risks, the amount of our insurance coverage may not be adequate to cover all potential claims or liabilities, and we may be forced to bear substantial costs resulting from the risks and uncertainties of our business. Especially in light of our increased focus on our automotive semiconductor business, there is also no guarantee that we will be able to obtain insurance coverage when desired or that insurance will be available on commercially attractive terms. Any failure to obtain adequate insurance coverage on terms favorable to us, or at all, could have a material adverse effect on our business, financial condition, and results of operations.

Inflation and fluctuations in interest rates could adversely affect our business, financial condition, results of operations, and cash flows.

We are exposed to economic and political conditions in the countries and regions where we operate. We are also affected by governmental policies regarding spending and investment, exchange controls, regulatory and taxation changes, and other adverse political, economic, or social developments in the countries and regions in which we operate. Like all companies with extensive operations, we are exposed to risks from fluctuations in inflation.

High inflation rates may adversely affect our business by increasing the cost of the raw materials, energy, labor, and transportation. Current or future efforts by various governments to stimulate their economies may increase the risk of inflation. In the event of an increase in inflation, we may need to increase the sales prices of our services in order to maintain satisfactory profits; however, such increases may not be accepted by our customers, and may not sufficiently compensate for the negative impacts of inflation. At a macro level, inflation might reduce households’ disposable income and reduce people’s savings, which may decrease discretionary spending and negatively impact the sales of our customers’ products and, correspondingly, their demand for our manufacturing services. If we are unable to fully offset the effects of increased inflation, we may have material adverse impacts on our business, financial condition, results of operations, and cash flows.

As a result of inflationary pressure and macroeconomic instability, various governments may adopt monetary policies that will lead to higher interest rates. Higher interest rates may adversely affect our financing costs, including the costs of our current debt and leasing payments. There is no assurance that we will be able to effectively mitigate the interest rate risk, even after utilizing certain financing instruments. Further, in higher interest rate environments, our customers may reduce their overall investment in product development by cutting their capital expenditures and R&D expenses. Such reductions in capital expenditures and R&D expenses by our customers may reduce the amount of business that we receive from them and adversely affect our results of operations.

Fluctuations in exchange rates could adversely affect our business, results of operations, or financial condition.

Within our global operations, significant transactions and balances are denominated in currencies other than the NT dollar. A significant portion of our revenues are denominated in U.S. dollars, with the remaining portion denominated in NT dollars and Japanese yen. Our operating costs and operating expenses are also incurred in several currencies, primarily NT dollars, U.S. dollars, RMB, Japanese yen, Korean won, EUR, as well as, to a lesser extent, Singapore dollars, Malaysian ringgit, and Polish zloty. In addition, a substantial portion of our capital expenditures, primarily for the purchase of equipment, has been, and is expected to continue to be, denominated in U.S. dollars, with the remainder in Japanese yen. As a result, fluctuations in exchange rates, primarily among the U.S. dollar and Japanese yen against the NT dollar, RMB and EUR, will affect our financial condition and results of operations. In addition, these fluctuations could result in exchange losses in NT dollar and other local currency terms, even if we have implemented hedging and mitigating techniques. We recorded net foreign exchange losses of NT\$2,459.5 million in 2022, net foreign exchange gains of NT\$998.1 million in 2023, and net foreign exchange losses of NT\$5,538.4 million (US\$168.9 million) in 2024, respectively. See “Item 11. Quantitative and Qualitative Disclosures about Market Risk— Market Risk—Foreign Currency Exchange Rate Risk.”

The financial performance of our equity method investments could adversely affect our results of operations.

As part of our business strategy, we have and may continue to pursue acquisitions of businesses and assets, strategic alliances, and investments in associates and joint ventures. We currently have equity investments in certain entities and the accounting treatment applied for these investments varies depending on several factors, including, but not limited to, our percentage of ownership, our percentage of membership of the investee’s board, and the level of influence we have over the relevant entity. Any losses experienced by these entities could adversely affect our results of operations and the value of our investment. In addition, if these entities were to fail and cease operations, we may lose the entire value of our investment and the stream of any shared profits.

There can be no assurance that we will be able to maintain or enhance the value or performance of our investee companies or that we will achieve the returns or benefits sought from such investments. If our interests differ from those of other investors in our investee companies, we may not be able to enjoy synergies with the investee and it may adversely affect our financial results or condition.

We recognized impairment charges of NT\$61.2 million in 2022, nil in 2023, and NT\$42.1 million (US\$1.3 million) in 2024, respectively, in our investments under the equity method.

Any impairment charges may have a material adverse effect on our income.

Under IFRS Accounting Standards, we are required to evaluate our assets, such as property, plant and equipment, investment properties, intangible assets, including goodwill, and investments in financial instruments, for possible impairment at least annually or whenever there is an indication of impairment. If certain criteria are met, we are required to record an impairment charge.

With respect to assets, we recognized impairment charges of NT\$388.8 million, NT\$146.6 million, and NT\$176.0 million (US\$5.4 million) in 2022, 2023, and 2024, respectively, primarily as a result of impairment charges related to property, plant and equipment, and other intangible assets as well as investments under the equity method.

We are unable to estimate the extent and timing of any impairment charges for future years and we cannot give any assurance that impairment charges will not be required in periods subsequent to December 31, 2024. Any impairment charge could have a material adverse effect on our net income. The determination of an impairment charge at any given time is based significantly on our expected results of operations over several years in the future. As a result, an impairment charge is more likely to occur during a period in which our operating results and outlook are otherwise already depressed.

Any failure to achieve and maintain effective internal controls could have a material adverse effect on our business and results of operations.

Our management has concluded that our internal control over financial reporting was effective as of December 31, 2024. Our evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2024, excluded the internal control over financial reporting of CHE and ASEPCAYMAN, because CHE and ASEPCAYMAN were acquired on August 1, 2024. CHE and ASEPCAYMAN are expected to conduct certain measures to transition and integrate into our framework of internal controls over financial reporting. Please refer to “Item 15. Controls and Procedures” for details on our internal control over financial reporting.

We are required to comply with various R.O.C. and the U.S. laws and regulations on internal controls, including but not limited to Section 404 of the Sarbanes-Oxley Act. However, internal controls over financial reporting may not prevent or detect misstatements because of its inherent limitations. Any failure to maintain effective internal control over financial reporting could harm our business, erode investor confidence in our financial statements, and negatively impact the trading price of our Common Shares and ADSs. Furthermore, we could be subject to criminal penalties or shareholder litigation if we fail to remedy any deficiencies or maintain the adequacy of our internal controls.

Restrictive covenants and broad default provisions in our existing debt agreements may materially restrict our operations as well as adversely affect our liquidity, financial condition, and results of operations.

We are a party to numerous loans and other agreements relating to the incurrence of debt, which may include restrictive covenants and broad default provisions. Covenants in the agreements governing our existing debt, and debt we may incur in the future, may materially restrict our operations, including our ability to incur debt, pay dividends, and make certain investments and payments, other than in connection with restructurings of consolidated entities, and encumbering or disposing of assets. In addition, any global economic deterioration or ineffective expansion may cause us to incur significant net losses or force us to assume considerable liabilities. We cannot ensure that we will be able to remain in compliance with our financial covenants, which, as a result, may lead to a default. This may thereby restrict our ability to access unutilized credit facilities or the global capital markets to meet our liquidity needs. Furthermore, a default under any agreement by us or our subsidiaries may trigger cross-defaults under our other agreements. In the event of default, we may not be able to cure the default or obtain a waiver on a timely basis. An event of default under any agreement governing our existing or future debt, if not cured or waived, could have a material adverse effect on our liquidity, financial condition, and results of operations.

As of December 31, 2024, we were not in breach of any of the financial covenants under our existing loan agreements. We cannot provide any assurance that we will not breach any such financial covenants under our loan agreements in the future or that we will obtain a waiver from the relevant bank for any future breaches in a timely manner.

We could potentially face tax uncertainties arising from our decisions, activities, and operations or any changes in tax laws in jurisdictions in which we operate, which may adversely affect our operations.

There are many activities in our daily operations that may give rise to tax issues, ranging from procurement, research and development activities, manufacturing to product storage and distribution, among others. Additional tax liabilities such as double taxation, inapplicability of tax incentives, tax adjustment, and related interest and penalties may arise if tax issues are not dealt with appropriately. The development and evolution of tax laws and regulations present considerable variations in interpretation and enforcement, which could result in more stringent compliance measures and tax audits in the jurisdictions in which we operate. Failure to comply with any change in tax laws could result in unfavorable tax consequences to us and have an adverse impact on our business, financial condition, and results of operations.

We have business operations in multiple countries and our worldwide operations are taxed under the laws of the jurisdictions in which we operate. However, the integrated nature of our worldwide operations can produce conflicting claims from revenue authorities in different countries as to the profits to be taxed in the individual countries, which could increase our effective tax rate and adversely affect our reputation and operations. Furthermore, our tax expense and effective tax rate could be affected by several other factors, including changes in tax laws and their interpretation, ongoing international tax reform work led by the Organization for Economic Co-operation and Development, such as the Global Minimum Tax under the Base Erosion and Profit Shifting Action Plan, as well as the impact of acquisitions, disposals, and any restructuring of our businesses.

We may be subject to intellectual property rights disputes, which could adversely affect our business.

Our ability to compete successfully and achieve future growth depends in part on developing and safeguarding our proprietary technologies while securing commercially acceptable terms for non-owned technologies. Our failure to do so may seriously harm our competitive position.

Our ability to compete successfully also depends in part on operating without infringing others' proprietary rights. In particular, the semiconductor and electronics industries are characterized by frequent litigation regarding patent and other intellectual property rights. We have received communication alleging infringement of others' technologies and may receive more in the future. Infringement claims have resulted in, or could result in acquiring licenses, discontinuing certain technologies, paying damages or settlement payments, or unfeasibly seeking to develop alternative technologies, which could result in financial consequences.

Any litigation, whether as plaintiff or defendant and regardless of the outcome, is costly and diverts company resources. Any of the foregoing could harm our competitive position and render us unable to fully provide our services operations.

Regulations related to conflict minerals could adversely affect our business, financial condition and results of operations.

In August 2012, the SEC adopted annual disclosure and reporting requirements, as mandated by the Dodd-Frank Wall Street Reform and Consumer Protection Act, for companies that use conflict minerals in their products. These rules require companies that manufacture or contract to manufacture products for which conflict minerals are necessary for functionality or production to begin scrutinizing the origin of conflict minerals in their products. We filed a specialized disclosure report on Form SD in accordance with the requirements and we have retained an independent auditing firm to conduct audits on our due diligence framework to provide a private sector report for our specialized disclosure report on Form SD. There will be costs associated with complying with these disclosure requirements, including costs for diligence to determine the sources of conflict minerals used in our products and other potential changes to products, processes, or sources of supply as a consequence of the results of such verification activities. The implementation of these rules could adversely affect the sourcing, supply, and pricing of materials used in our products.

As there may be only a limited number of suppliers offering "conflict free" minerals, we cannot be sure that we will be able to obtain necessary "conflict free" minerals from such suppliers in sufficient quantities or at competitive prices. Also, we may face adverse effects to our reputation if we determine that certain of our products contain minerals not determined to be conflict free or if we are unable to sufficiently verify the origins for all conflict minerals used in our products.

Any environmental claims or failure to comply with any present or future environmental laws and regulations, as well as any fire or other industrial accident, may require us to spend additional funds and may materially and adversely affect our financial condition and results of operations.

We are subject to various laws and regulations relating to the use, storage, discharge, and disposal of chemical by-products of, and water used in, our packaging and interconnect materials production processes, and the emission of volatile organic compounds and the discharge and disposal of solid industrial wastes. In recent years, we have been subject to environmental administrative actions and judicial proceedings related to certain wastewater discharge incidents that occurred at our facilities. As a result of these proceedings, we have been subject to monetary fines as well as sanctions, including orders to suspend or limit our operations and criminal charges against us. For further details, see "Item 4. Information on the Company—Business Overview—Environmental Matters," and "Item 8. Financial Information—Consolidated Statements and Other Financial Information—Legal Proceedings."

In addition, increasing global efforts to combat climate change may lead to the enactment of stricter laws and regulations aimed at reducing carbon emissions. With an increasing number of governments likely to adopt carbon tax mechanisms, we may be forced to incur significant expenses to comply with applicable environmental and climate-related laws and regulations. These potential expenses include, but are not limited to, paying any incurred carbon taxes if our emission levels exceed applicable thresholds; obtaining renewable energy sources, renewable energy certificates or carbon credits; and substituting more environmentally-friendly raw materials to use in our operations, which may be more costly or less readily available than our existing raw materials.

Climate change, water shortages and other environmental concerns could negatively affect our business and financial planning.

Anthropogenic greenhouse gas emissions could adversely and irreversibly affect the global economy if substantial remediation is not taken. Even a modest change in average global temperatures could result in increased coastal flooding, altered precipitation patterns, and increased risk of biodiversity loss for vulnerable species. Climate change can also cause extreme weather conditions, such as heat, droughts, and floods, that can impact business operations and financial performance. For example, our business operations depend on adequate supplies of water, so an extended drought may affect our ability to obtain sufficient amounts of water and threaten our production capability.

We believe that we should play our part in the mitigation of man-made climate change. For example, we have incorporated green design standards and building concepts into the construction of our facilities. We have transformed existing facilities and built new facilities and offices that comply with international low carbon building standards. Through quantifying and analyzing the entire life cycle of building carbon emissions, carbon reduction was driven from the design stage and promoted along the value chain to build sustainable factories.

Public expectations for reductions in greenhouse gas emissions could result in increased energy, transportation, and raw material costs. Changes in scientific findings, political attention, and regulations related to the existence and extent of man-made climate change may also result in increased production costs due to higher energy prices or the introduction of energy or carbon taxes, as described above. Regulations and further legislation aimed at reducing greenhouse gas emissions may require companies to purchase emission credits at higher cost, new equipment, or raw materials with lower carbon footprints, which could negatively affect our operations and financial performance. Additionally, changes in environmental regulations, such as those regarding the use of perfluorinated compounds (commonly known as the “PFCs”), could increase our production costs, which may adversely affect our results of operation and financial results.

Stable water supply of sufficient amounts of good-quality freshwater plays a critical role for us. Taiwan is also susceptible to typhoons and droughts, which may cause damage and business interruptions to facilities. Since our business operations depend on adequate supplies of water, an extended drought may affect our ability to obtain sufficient water and threaten our production capability. Although we have not yet been directly affected by droughts, we are dependent upon water for our packaging and substrate operations and a drought could interrupt such operations. To address related risks, we have established a wastewater reclamation recycling system and implemented three water use strategies, including reduce, reuse, and recycle, to prevent water shortages. These actions will enable us to respond effectively to climate change.

Considering the relatively high prices of renewable energy in Taiwan, transitioning towards net-zero emissions presents a significant challenge to us. However, in order to meet the demand for sustainable energy in our production processes and fulfill our commitments to our domestic and foreign customers, our major subsidiaries have established the Taiwan Renewable Energy Platform to negotiate renewable energy procurement. Through the platform, we plan to continue to purchase solar photovoltaic and onshore wind power, and negotiate with the government for purchases of Phase 3-1 and Phase 3-2 offshore wind power. We also purchase green power certificates from overseas facilities to increase our use of renewable energy. The implementation of these goals and initiatives may require considerable investments, and our goals, with all of their contingencies, dependencies, and in certain cases, reliance on third-party performance, are complex and may change. We cannot guarantee that our goals and initiatives will be fully realized in a timely manner or at all, and projects that are completed as planned may not achieve the results we anticipate. Any failure, or perceived failure, by us to adhere to our public statements, comply fully with developing interpretations of ESG laws and regulations, or meet evolving and varied stakeholder expectations and standards could harm our business, reputation, financial condition, and operating results.

Cyber-attacks could harm our business, financial condition, and results of operations.

As technology advances, cyberattacks become more frequent and sophisticated. Attackers are organized, well-funded, and are developing increasingly sophisticated systems to attack and evade detection. While we take strict measures to protect our trade secrets and customer data, a security breach or failure could expose us and our customers, dealers, and suppliers to risks such as unauthorized access to information technology systems, misuse and compromise of confidential information, and manipulation and destruction of data. Such incidents could potentially disrupt our business operations, harm our reputation, weaken our competitive position, and adversely affect our financial condition and results of operations. Additionally, security breaches could lead to litigation with third parties, regulatory actions, and higher costs of implementing additional data protection measures. Furthermore, geopolitical tensions or conflicts may increase the risk of cyberattacks. While we continuously review and strengthen our information security policies and procedures, we cannot guarantee that we will be immune to new and emerging risks and attacks in the constantly evolving landscape of cybersecurity threats. For further details, see “Item 4. Information on the Company—Business Overview—Information Security Management” and “Item 16K. Cybersecurity.”

Failure to grasp the future development or application of AI could adversely affect our business, financial condition, and results of operations.

As the markets for AI solutions continue to develop rapidly, demand for these products may be unpredictable and may vary significantly over time. These factors may adversely impact demand for our products that support AI solutions. We dedicate substantial efforts to research and development in order to meet customers’ evolving needs. We also make investments in AI technologies to drive greater efficiency and optimize manufacturing process in our smart factories. The development and use of AI technologies are complex and involve significant costs and risks. However, there is no assurance that these investments will be successful or will achieve the benefits we anticipated. Any failure to respond effectively to industry developments may significantly impair our business operations.

Negative publicity may adversely affect our brand and reputation, which may result in a material adverse impact on our business, results of operations and business prospects, and cause fluctuations in the trading price of our Common Shares and ADSs.

In addition, any change in policy or the direction in which we carry our corporate social responsibility or sustainability activities may also have an adverse effect on our business reputation. In recent years, we have experienced and may continue to experience negative publicity in connection with administrative penalties and criminal charges related to alleged violations of environmental regulations and laws. For further details, see “Item 4. Information on the Company—Business Overview—Environmental Matters,” and “Item 8. Financial Information—Consolidated Statements and Other Financial Information—Legal Proceedings.”

We face risks related to public health epidemics, natural disasters, and other disruptive events.

Our business could be materially and adversely affected by the outbreak of a 1) widespread health epidemic, such as COVID-19, swine flu, avian influenza, severe acute respiratory syndrome, Ebola, or Zika; 2) natural disasters, such as earthquakes, fires, floods, and the effects of climate change, such as drought, floods and increased storm severity; or 3) other events, such as wars, acts of terrorism, environmental accidents, power shortages, or communication interruptions. Disruptive events may have a material adverse effect on our business, financial condition, and results of operations. For example, these events could cause a temporary closure of the facilities we use for our operations, significantly disrupt supply chains and logistics services, or severely impact consumer behaviors and the operations of merchants, business partners, and other participants in our ecosystem. Our operations could also be disrupted if any of our employees or employees of our business partners contract or are suspected of contracting an epidemic disease, since this could require us or our business partners to quarantine some or all these employees or disinfect the facilities used for operations. In addition, our revenue and profitability could be materially reduced to the extent that a natural disaster, health epidemic, or other outbreak harms the global economy in general.

Risks Relating to Taiwan, R.O.C.

Strained relations between the R.O.C. and the P.R.C. and disruptions in Taiwan's political environment caused by domestic political events could negatively affect our business and the market value of our Common Shares and ADSs.

Our principal executive offices and facilities are located in Taiwan and approximately 58.5%, 55.4%, and 55.1% of our operating revenues in 2022, 2023, and 2024, respectively, were derived from our operations in Taiwan. Accordingly, our business and financial condition may be affected by changes in local governmental policies and political and social instability.

The R.O.C. has a unique international political status. Although significant economic and cultural relations have been established in recent years between the R.O.C. and the P.R.C., relations have often been strained. Any major change in the Taiwanese political environment, including the outcome of presidential or municipal elections, or potential shifts in government policy, may affect the direction of economic and political developments and negatively impact the economic and political environment in Taiwan. Past developments related to the interaction between the two governments, domestic political events, or election results have on occasion depressed the market prices of the securities of Taiwanese or Taiwan-related companies, including our own. Relations between the R.O.C. and the P.R.C. and other factors affecting the political or economic conditions in Taiwan could have a material adverse effect on our financial condition and results of operations, as well as the market price and the liquidity of our Common Shares and ADSs.

We manufacture interconnect materials in the P.R.C. through our wholly owned subsidiary, ASE Shanghai. We also provide packaging and testing services, develop real estate, and manufacture computer peripherals and electronic components through our subsidiaries in the P.R.C. See "Item 4. Information on the Company—Organizational Structure—Our Consolidated Subsidiaries." The R.O.C. government restricts certain types of investments in the P.R.C. We do not know when or if such laws and policies governing investment in the P.R.C. will be amended, and we cannot ensure that such R.O.C. investment laws and policies will permit us to make certain beneficial investments in the P.R.C. in the future. Our growth prospects and profitability may be adversely affected if we are restricted from making certain additional investments in the P.R.C. and are not able to fully capitalize on the growth of the semiconductor industry in the P.R.C.

To address customer concerns regarding potential operational impacts in Taiwan stemming from regional political risks, we conduct evaluations and planning for possible overseas plant expansions. These potential expansion locations may encompass Southeast Asia, Northeast Asia, Europe and the Americas in order to better accommodate our customers' needs. However, there is no assurance that any of these expansions would be as effective as expected. Our growth prospects and profitability may be adversely affected if we could not effectively adjust our plant expansion in a timely manner, or at all. Despite our efforts to uphold cost-competitive manufacturing standards and enhance customer appeal through supply chain diversification, fragmented operations could heighten our susceptibility to market disruptions. Any failure to mitigate these disruptions could adversely affect our business, financial condition, and results of operations.

As a substantial portion of our business and operations are located in Taiwan, we are vulnerable to natural disasters including earthquakes, typhoons, droughts, as well as power outages and other industrial incidents, which could severely disrupt the normal operation of our business and adversely affect our results of operations.

Taiwan is in a region that is prone to typhoons and earthquakes, and these natural disasters have caused significant property damage, business disruptions at operating facilities, and loss of life in the past. The semiconductor and electronics industries are particularly vulnerable to disruptions caused by earthquakes. While we have not experienced any structural damage to our facilities or damage to our machinery and equipment due to earthquakes, we have experienced interruptions to our production schedule in the past, primarily as a result of power outages caused by earthquakes. In the event of a major earthquake, we could experience significant disruptions to our operations, which could have a material adverse effect on our business, financial condition, and results of operations. We seek to continuously enhance our disaster preparedness and business continuity plans to minimize the impact of earthquakes and other natural disasters on our operations, but we cannot guarantee that such plans will be effective in all circumstances. The supply of electrical power in Taiwan, which is primarily provided by Taiwan Power Company, is susceptible to power disruptions that could be prolonged and frequent, caused by overload as a result of high demand or other reasons. Such power disruptions could further be exacerbated as the government of Taiwan is committed to phasing out nuclear power in Taiwan by 2025.

Additionally, Taiwan has experienced severe droughts in the past and future droughts could significantly impact our operations. Our manufacturing process is heavily reliant on freshwater. We primarily recycle using ultra-filtration systems, chemical mechanical polishing wastewater recycling, and reverse osmosis water recycling. We also collect rainwater for scrubbing and cooling towers. We regularly monitor our water storage and recycling equipment, and prepare truckloads of water to meet future water demand. We also refine our manufacturing capacity in response to water allocation to minimize the impact of water risks.

Although we have not experienced direct impacts from droughts, a drought could interrupt our packaging and substrate operations, which rely heavily on water. In addition, a drought could disrupt the manufacturing processes at other parts of the supply chain including our foundry partners, leading to potential production delays for our customers and a decline in demand for our services. While we are proactive in managing water risks and planning to mitigate their impact, we cannot guarantee that insufficient water storage will not affect our operations.

In addition, we are also subject to the risk of industrial and workplace accidents that could lead to injury or loss of life, damages to our facilities, and adversely impact our business reputation, commercial prospects, and operations.

Our production facilities, as well as many of our suppliers, customers, and providers of complementary semiconductor manufacturing services, including wafer foundries, are located in Taiwan. If our customers are impacted by natural disasters such as earthquakes, typhoons, droughts, or industrial incidents including power outage and labor strikes, these events could cause a decline in the demand for our services. If our suppliers or providers of complementary semiconductor manufacturing services are affected by such events, our production schedule could be interrupted, which might adversely impact our financial condition and results of operations.

Risks Relating to Ownership of Our Common Shares and ADSs

The market for our Common Shares and ADSs may not be liquid.

Active, liquid trading markets generally result in lower price volatility and more efficient execution of buy and sell orders for investors, compared to less active and less liquid markets. Liquidity of a securities market is often a function of the volume of the underlying shares that are publicly held by unrelated parties.

There has been no trading market outside the R.O.C. for our Common Shares and the only trading market for our Common Shares is the TWSE. The outstanding ADSs are listed on the NYSE. There is no assurance that the market for our Common Shares or the ADSs will be active or liquid.

Although ADS holders are entitled to withdraw our Common Shares underlying the ADSs from the depository at any time, the R.O.C. law requires that our Common Shares be held in an account in the R.O.C. or sold for the benefit of the holder on the TWSE. In connection with any withdrawal of Common Shares from our ADS facility, the ADSs evidencing these Common Shares will be canceled. Unless additional ADSs are issued, the effect of withdrawals will be to reduce the number of outstanding ADSs. If a significant number of withdrawals are affected, the liquidity of our ADSs will be substantially reduced. We cannot ensure that the ADS depository will be able to arrange for a sale of deposited shares in a timely manner or at a specified price, particularly during periods of illiquidity or volatility.

If a non-R.O.C. holder of ADSs withdraws and holds Common Shares, such holder of ADSs will be required to appoint a tax guarantor, local agent, and custodian in the R.O.C. and register with the TWSE or the Taipei Exchange in order to buy and sell securities on the TWSE.

When a non-R.O.C. holder of ADSs elects to withdraw and hold Common Shares represented by ADSs, such holder of the ADSs will be required to appoint an agent for filing tax returns and making tax payments in the R.O.C. Such agent will be required to meet the qualifications set by the R.O.C. Ministry of Finance and, upon appointment, becomes the guarantor of the withdrawing holder's tax payment obligations. Evidence of the appointment of a tax guarantor, the approval of such appointment by the R.O.C. tax authorities, and tax clearance certificates or evidentiary documents issued by such tax guarantor may be required as conditions to such holder repatriating the profits derived from the sale of Common Shares. We cannot ensure that a withdrawing holder will be able to appoint, and obtain approval for, a tax guarantor in a timely manner.

In addition, under current R.O.C. law, such withdrawing holder is required to register with the TWSE or the Taipei Exchange and appoint a local agent in the R.O.C. to, among other things, open a bank account and open a securities trading account with a local securities brokerage firm, pay taxes, remit funds, and exercise such holder's rights as a shareholder. Furthermore, such withdrawing holder must appoint a local bank or a local securities firm to act as custodian for confirmation and settlement of trades, safekeeping of securities and cash proceeds, and reporting and declaration of information. Without satisfying these requirements, non-R.O.C. withdrawing holders of ADSs would not be able to hold or otherwise subsequently sell our Common Shares on the TWSE or otherwise.

Pursuant to P.R.C. Regulations, only QDIIs or persons that have otherwise obtained the approval from the DIR and registered with the TWSE are permitted to withdraw and hold our shares from a depository receipt facility. In order to hold our shares, such QDIIs are required to appoint an agent and custodian as required by the P.R.C. Regulations. If the aggregate amount of our shares held by any QDII or shares received by any QDII upon a single withdrawal or in the aggregate accounts for 10.0% of our total issued and outstanding shares, such QDII must obtain the prior approval from the DIR. We cannot ensure that such approval would be granted.

The market value of our ADSs may fluctuate due to the volatility of the R.O.C. securities market.

The trading price of our ADSs may be affected by the trading price of our Common Shares on the TWSE. The R.O.C. securities market is smaller and more volatile than the securities markets in the U.S. and in many European countries. The TWSE has experienced substantial fluctuations in the prices and volumes of sales of listed securities and there are currently limits on the range of daily price movements on the TWSE. During 2024, the TWSE Weighted Index peaked at 24,390.03 on July 11, 2024, and reached a low of 17,161.79 on January 17, 2024, and the trading price of our Common Shares ranged from NT\$123.0 per Share to NT\$193.5 per Share. On March 14, 2025, the TWSE Weighted Index closed at 21,968.05 and the closing value of our Common Shares was NT\$155.0 per Share.

The TWSE is particularly volatile during times of political instability, including when relations between the R.O.C. and the P.R.C. are strained. Several investment funds affiliated with the R.O.C. government have also from time to time purchased securities from the TWSE to support the trading level of the TWSE. Moreover, the TWSE has experienced problems such as market manipulation, insider trading, and settlement defaults. The recurrence of these or similar problems could have an adverse effect on the market price and liquidity of the securities of R.O.C. companies, including our Common Shares and ADSs, in both the domestic and international markets.

We may not continue to declare cash dividends in any particular amount.

We intend to continue to pay dividends. However, future dividends may be affected by, among other things, the best interests of our Company and our shareholders, our results of operations, cash balances and future cash requirements, financial condition, investments and acquisitions, legal risks, and other factors that the board of directors may consider relevant. Our dividend payments may change occasionally, and we cannot ensure that we will continue to declare dividends in any particular amount. A reduction in, a delay of, or elimination of our dividend payments could adversely affect our share price.

Our major shareholders may take actions that are not in, or may conflict with, our public shareholders' best interests.

Members of the Chang family own, directly or indirectly, a significant interest in our outstanding Common Shares. See "Item 7. Major Shareholders and Related Party Transactions—Major Shareholders." Accordingly, these shareholders will continue to have the ability to exercise a significant influence over our business, including matters relating to:

- our operation, management, and policies;
- the timing and distribution of dividends; and

- the election of our directors.

Members of the Chang family may take actions that public shareholders may not agree with or that are not in alignment with our or our public shareholders' best interests.

We are an R.O.C. company and, because the rights of shareholders under R.O.C. law differ from those under U.S. law and the laws of certain other countries, our shareholders may have difficulty protecting their shareholder rights.

Our corporate affairs are governed by our Articles of Incorporation and by the laws governing corporations incorporated in the R.O.C. The rights of shareholders and the responsibilities of management and the members of the board of directors under R.O.C. law are different from those applicable to a corporation incorporated in the U.S. and certain other countries. As a result, public shareholders of R.O.C. companies may experience increased difficulty in protecting their interests in connection with actions taken by management or members of the board of directors than they would as public shareholders of a corporation in the U.S. or certain other countries.

Holders of Common Shares and ADSs may experience dilution if we issue stock bonuses, share options, or restricted stocks to employees or sell additional equity or equity-linked securities.

Like other R.O.C. technology companies, we periodically issue bonuses in the form of Common Shares. Bonuses in the form of our Common Shares are valued at the closing price of our Common Shares on the day prior to our meeting of the board of directors. Therefore, the issuance of our Common Shares pursuant to stock bonuses, share options and restricted stock awards may have a dilutive effect on the holders of outstanding Common Shares and ADSs. In addition, the issuance of additional equity or equity-linked securities may result in additional dilution to our shareholders.

As of December 31, 2024, a total of approximately 227,621 thousand share options and restricted stocks assumed and issued by ASEH were outstanding. See "Item 6. Directors, Senior Management and Employees—Compensation—Share-Based Payment Arrangements."

Restrictions on the ability to deposit our Common Shares into our ADS facility may adversely affect the liquidity and price of our ADSs.

The ability to deposit Common Shares into our ADS facility is restricted by R.O.C. law. A significant number of withdrawals of Common Shares underlying our ADSs would reduce the liquidity of the ADSs by reducing the number of ADSs outstanding. As a result, the prevailing market price of our ADSs may differ from the prevailing market price of our Common Shares on the TWSE. Under current R.O.C. law, no person or entity, including shareholders and ourselves, may deposit our Common Shares in our ADS facility without specific approval of the FSC, unless:

- (1) we pay stock dividends on our Common Shares;
- (2) we make a free distribution of Common Shares;
- (3) holders of ADSs exercise preemptive rights in the event of capital increases; or
- (4) to the extent permitted under the deposit agreement and the relevant custody agreement and within the amount of depositary receipts which have been withdrawn, investors purchase our Common Shares, directly or through the depositary, on the TWSE, and deliver our Common Shares to the custodian for deposit into our ADS facility, or our existing shareholders deliver our Common Shares to the custodian for deposit into our ADS facility.

With respect to item (4) above, the depositary may issue ADSs against the deposit of those Common Shares only if the total number of ADSs outstanding following the deposit will not exceed the number of ADSs previously approved by the FSC, plus any ADSs issued pursuant to the events described in items (1), (2) and (3) above.

In addition, in the case of a deposit of our Common Shares requested under item (4) above, the depositary will refuse to accept deposit of our Common Shares if such deposit is not permitted under any legal, regulatory, or other restrictions notified by us to the depositary, which restrictions may include blackout periods during which deposits may not be made, minimum and maximum amounts, and frequency of deposits.

The depositary will not offer holders of ADSs preemptive rights unless the distribution of both the rights and the underlying Common Shares to our ADS holders are either registered under the Securities Act or exempt from registration under the Securities Act.

Holders of ADSs will not have the same voting rights as our shareholders, which may affect the value of their ADSs.

The voting rights of a holder of ADSs as to our Common Shares represented by its ADSs are governed by the deposit agreement. Holders of ADSs will not be able to exercise voting rights on an individual basis. If holders representing at least 51% of the ADSs outstanding at the relevant record date instruct the depositary to vote in the same manner regarding a resolution, including the election of directors, the depositary will cause all Common Shares represented by the ADSs to be voted in that manner. If the depositary does not receive timely instructions representing at least 51% of the ADSs outstanding at the relevant record date to vote in the same manner for any resolution, including the election of directors, holders of ADSs will be deemed to have instructed the depositary or its nominee to authorize all our Common Shares represented by the ADSs to be voted at the discretion of our chairman or his designee, which may not be in the interest of holders of ADSs. Moreover, while shareholders who own 1% or more of our outstanding shares are entitled to submit one proposal to be considered at our annual general meetings of shareholders, only holders representing at least 51% of our ADSs outstanding at the relevant record date are entitled to submit one proposal to be considered at our annual general meetings of shareholders. Hence, only one proposal may be submitted on behalf of all ADS holders.

The right of holders of ADSs to participate in our rights offerings is limited, which could cause dilution to their holdings.

We may from time to time distribute rights to our shareholders, including rights to acquire our securities. Under the deposit agreement, the depositary will not offer holders of ADSs those rights unless both the distribution of the rights and the underlying securities to all our ADS holders are either registered under the Securities Act or exempt from registration under the Securities Act. Although we may be eligible to take advantage of certain exemptions under the Securities Act available to certain foreign issuers for rights offerings, we can give no assurances that we will be able to establish an exemption from registration under the Securities Act, and we are under no obligation to file a registration statement for any of these rights. Accordingly, holders of ADSs may be unable to participate in our rights offerings and may experience dilution of their holdings.

If the depositary is unable to sell rights that are not exercised or not distributed or if the sale is not lawful or reasonably practicable, it will allow the rights to lapse, in which case holders of ADSs will receive no value for these rights.

Changes in exchange controls, which restrict the conversion of proceeds received from ownership of ADSs, may have an adverse effect on the value of these investments.

Under current R.O.C. law, the depositary, without obtaining approvals from the Central Bank of the Republic of China (Taiwan) or any other governmental authority or agency of the R.O.C., may convert NT dollars into other currencies, including U.S. dollars, for:

- the proceeds of the sale of Common Shares represented by ADSs or received as stock dividends from our Common Shares and deposited into the depositary receipt facility; and
- any cash dividends or distributions received from our Common Shares.

In addition, the depositary may also convert into NT dollars incoming payments for purchases of Common Shares for deposit in the ADS facility against the creation of additional ADSs. The depositary may be required to obtain foreign exchange approval from the Central Bank of the Republic of China (Taiwan) on a payment-by-payment basis for conversion from NT dollars into foreign currencies of the proceeds from the sale of subscription rights for new Common Shares. Although it is expected that the Central Bank of the Republic of China (Taiwan) will grant this approval as a routine matter, we cannot ensure that in the future any approval will be obtained in a timely manner, or at all.

Under the R.O.C. Foreign Exchange Control Act, the Executive Yuan of the R.O.C. government may, without prior notice but subject to subsequent legislative approval, impose foreign exchange controls in the event of, among other things, a material change in international economic conditions. We cannot ensure that foreign exchange controls or other restrictions will not be introduced in the future.

The value of our Common Shares or ADSs may be reduced by possible future sales of Common Shares or ADSs by us or our shareholders.

While we are not aware of any plans by any major shareholders to dispose of significant numbers of Common Shares, we cannot ensure that one or more existing shareholders or owners of securities convertible or exchangeable into or exercisable for our Common Shares or ADSs will not dispose of significant numbers of Common Shares or ADSs. In addition, several of our subsidiaries and affiliates hold Common Shares, depositary shares representing Common Shares, and options to purchase Common Shares or ADSs. They may decide to sell those securities in the future. See “Item 7. Major Shareholders and Related Party Transactions—Major Shareholders” for a description of our significant shareholders and affiliates that hold our Common Shares.

We cannot predict the effect, if any, that future sales of Common Shares or ADSs, or the availability of Common Shares or ADSs for future sale, will have on the market price of our Common Shares or the ADSs at any time. Sales of substantial numbers of Common Shares or ADSs in the public market, or the perception that such sales may occur, could depress the prevailing market prices of our Common Shares or the ADSs.

Techniques employed by short sellers may drive down the trading price of the ADSs.

Short selling is the practice of selling securities that the seller does not own but rather has borrowed from a third party with the intention of buying identical securities back at a later date to return to the lender. The short seller hopes to profit from a decline in the value of the securities between the sale of the borrowed securities and the purchase of the replacement shares, as the short seller expects to pay less in that purchase than it received in the sale. As it is in the short seller’s interest for the price of the security to decline, many short sellers publish, or arrange for the publication of, negative opinions regarding the relevant issuer and its business prospects in order to create negative market momentum and generate profits for themselves after selling a security short. These short attacks have, in the past, led to selling of shares in the market.

Public companies listed in the U.S. that have material operations in the P.R.C., among others, have on occasion been the subject of short selling. Much of the scrutiny and negative publicity has centered on allegations of a lack of effective internal control over financial reporting resulting in financial and accounting irregularities and mistakes, inadequate corporate governance policies or a lack of adherence thereto, and, in many cases, allegations of fraud. As a result, many of these companies are now conducting internal and external investigations into the allegations and, in the interim, are subject to shareholder lawsuits and/or SEC enforcement actions.

It is not clear what effect such negative publicity could have on us. If we were to become the subject of any unfavorable allegations, whether such allegations are proven to be true or untrue, we would have to expend a significant amount of resources to investigate such allegations and/or defend ourselves. While we would endeavor to defend against any such short seller attacks, we may be constrained in how we can oppose a relevant short seller by principles of freedom of speech, applicable state law, or issues of commercial confidentiality. Such a situation could be costly and time-consuming and could divert our management’s attention from growing our business. Even if such allegations are ultimately proven to be groundless, allegations against us could severely impact the ADSs and their value could be greatly reduced or rendered worthless.

Item 4. Information on the Company

HISTORY AND DEVELOPMENT OF THE COMPANY

ASE Technology Holding Co., Ltd. was jointly established on April 30, 2018, as a company limited by shares under the R.O.C. Company Law, by the combination of Advanced Semiconductor Engineering, Inc., which was incorporated on March 23, 1984, and Siliconware Precision Industries Co., Ltd., which was incorporated on May 17, 1984.

ASEH directly controls ASE Group, SPIL Group, USI Group, ASE Social Enterprise Co., Ltd., and ASE Global Integrated Solutions Co., Ltd. ASEH’s main manufacturing facilities are located in Taiwan, the P.R.C., South Korea, Japan, Singapore, Malaysia, the Philippines, Vietnam, Mexico, America, Poland, France, the United Kingdom, Germany, Tunisia, the Czech Republic, and Hungary. Our principal executive offices are located at 26, Chin 3rd Road, Nanzih District, Kaohsiung, Taiwan, R.O.C. and our telephone number at the above address is (886) 7-361-7131. Our Common Shares have been listed on the TWSE under the symbol “3711” and ADSs representing our Common Shares have been listed on the NYSE under the ticker symbol “ASX.”

In February 2024, ASE and ASE Korea entered into share purchase agreements with Cypress Semiconductor Technology Ltd. and Infineon Technologies AG to acquire 100% shareholdings of ASEPCAYMAN and CHE, respectively. The final purchase price will be adjusted in accordance with the method stipulated in the share purchase agreements. As of December 31, 2024, the consideration of NT\$725.1 million (US\$22.1 million) and NT\$1,713.1 million (US\$52.2 million) were paid. In addition, according to the share purchase agreement, if operating revenue of ASEPCAYMAN and CHE reaches the predetermined target in the respective years of 2025, 2026 and 2027, the remaining consideration will be paid in annual tranches. If the target is not reached in any one of the three years, the corresponding portion of the remaining consideration will be paid in 2028. In August 2024, the transaction was completed and as a result, ASE and ASE Korea acquired 100% shareholdings of ASEPCAYMAN and CHE, respectively.

We are subject to the informational requirements of the Exchange Act and are required to file reports and other information with the SEC. The SEC maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system. We also make available on our website's investor relations page, free of charge, our annual report and the text of our reports on Form 6-K, including any amendments to these reports, as well as certain other SEC filings, as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. The address for our investor relations page is <https://ir.aseglobal.com/html/index.php>. The information contained on our website is not incorporated by reference in this annual report.

SPIL Acquisition

In light of the increase in competition and the consolidation trends in the global semiconductor industry, ASE proposed a strategic plan to SPIL that involved consolidating the operations of the two companies. In 2015, ASE started purchasing SPIL shares through concurrent tender offers in the R.O.C. and the U.S. After a series of discussions and negotiations, in June 2016, ASE entered into the Joint Share Exchange Agreement with SPIL, pursuant to which ASEH was formed by means of a statutory share exchange pursuant to the laws of the Republic of China, and ASEH (i) acquired all issued shares of ASE in exchange for shares of ASEH, and (ii) acquired all issued shares of SPIL using cash consideration.

The Share Exchange consummated on April 30, 2018, and ASE and SPIL became privately held and wholly owned subsidiaries of ASEH concurrently. Moreover, ASE and SPIL were separately approved by the competent authority to terminate their public offerings in March and April 2024.

USI Group and USI Group Restructuring

USI Group engages primarily in EMS in relation to computing, consumer electronics, communications, industrial and automotive, among other services and businesses.

We have been purchasing shares of Universal Scientific Industrial since 1999. Upon several acquisitions through cash and stock tender offer, Universal Scientific Industrial became our subsidiary in 2010. In 2012, USI Shanghai completed its IPO on the Shanghai Stock Exchange with the symbol "601231." In 2015, Universal Scientific Industrial completed a spin-off of USI Inc. Following the completion of a series of share transfers, USI Inc. became the parent company of the USI Group in 2016.

In 2018, our board of directors and the board of director of USI Global, a spin-off from ASE's investment department, resolved to merge USI Global and ASE Technology Holding Co., Ltd. The merger was consummated in 2019 and ASE Technology Holding Co., Ltd. became the surviving entity after the merger and USI Global was thereby dissolved. Our financial position or financial performance was not materially affected by USI Global's spin-off from ASE Inc. or USI Global's merger with ASE Technology Holding Co., Ltd.

In 2019, USIFR, FAFG and the shareholders of FAFG entered into a share purchase agreement (the "FAFG Share Purchase Agreement"), and USI Shanghai and ASDI, one of the shareholders of FAFG and privately held company owned by FAFG's founder, entered into a framework agreement for purchasing assets through issuing shares, pursuant to which USIFR and USI Shanghai would ultimately acquire 100.0% of the share capital of FAFG by way of a share purchase (the "FAFG Transaction"). The FAFG Transaction proposed a two-step transaction. In the first step, USIFR would directly purchase 89.6% of FAFG's share capital in exchange for a cash payment. In the second step, USI Shanghai would acquire the remaining 10.4% of FAFG's share capital from ASDI in exchange for newly issued shares of USI Shanghai. At the conclusion of both steps, USI Shanghai would directly or indirectly own 100% of the share capital of FAFG. In December 2020, the transaction was completed and as a result, USI acquired 100% of FAFG's total issued shares.

In March 2023, the board of directors of USI Shanghai resolved to establish a special purpose vehicle (“SPV”) with a registered capital of US\$53.0 million, jointly owned by its wholly-owned subsidiary, Universal Global Technology Co., Limited, (“UGT”), and an unrelated party, Ample Trading, Co., Ltd. (“Ample Trading”), through a joint venture agreement. UGT obtained 75.1% ownership of the SPV and Ample Trading obtained the remaining 24.9% ownership of the SPV. The SPV then acquired the automotive wireless business (“Target Business”), carved out from an unrelated party, TE Connectivity Ltd. The Target Business was renamed as Hirschmann Car Communication Holding S.a.r.l. upon completion of the acquisition. The total consideration for the acquisition was US\$71.5 million, which was based on the overall valuation of the Target Business and included an adjustment for the net debt and net working capital of the Target Business as of the settlement date. The consideration was fully paid in October 2023 and May 2024.

China Site Dispositions

In 2021, ASEH and Beijing Wise Road Asset Management Co., Ltd. (the “Wise Road Capital”) entered into a Sale and Purchase Agreement by which ASEH to sell shares and equity interests in GAPT Holding Limited (GAPT Holding Limited directly or indirectly holds 100.0% equity interests in Global Advanced Packaging Test (HongKong) Limited, ASEWH, ASEN and Advanced Shanghai) and ASEKS to Wise Road Capital or its designated affiliate in exchange for a cash consideration in an aggregate amount of NT\$36,939.1 million. In March 2023, the board of directors of Global Advanced Packaging Technology Limited resolved to acquire around 19.0% shareholding of Hong Kong United Ascend Holdings Limited. In January 2024, this resolution was amended to acquire 16.48% shareholding instead. The payment of all consideration was made with the remaining proceeds (US\$380.0 million) from the disposal of subsidiaries in 2021 and was completed in September 2024.

For more information on our history and development, see “—Organizational Structure.”

BUSINESS OVERVIEW

ASEH is a leading provider of semiconductor manufacturing services in assembly and testing. Our services include semiconductor packaging, production of interconnect materials, front-end engineering testing, wafer probing, and final testing services, as well as integrated solutions for EMS in relation to computing, peripherals, communications, industrial, automotive, and server applications.

We believe that, as a result of the following strengths, we are able to compete effectively to meet customers’ requirements across a wide range of applications:

- our ability to provide a broad range of cost-effective semiconductor packaging and testing services on a large-scale turnkey basis within key centers of semiconductor manufacturing;
- our expertise in developing and providing cost-effective packaging, interconnect materials, and testing technologies and solutions;
- our ability to provide proactive original design manufacturing services using innovative solution-based designs;
- our commitment to investing in capacity expansion and research and development, as well as selective acquisitions, that will benefit customers and our business;
- our geographic presence in key centers of outsourced semiconductor and electronics manufacturing; and

- our long-term relationships with providers of complementary semiconductor manufacturing services, including our strategic alliance with TSMC.

We believe that it is still the trend for semiconductor companies to outsource their packaging, testing, and manufacturing requirements as semiconductor companies rely on independent providers of foundry, packaging and testing, and EMS. In response to the increased pace of new product development and shortened product life and production cycles, semiconductor companies are increasingly seeking both independent packaging and testing companies that can provide turnkey services that reduce time to market and electronic manufacturing companies with proactive original design capabilities that can provide large-scale production. We believe that our technological expertise, scale, and our ability to integrate a broad range of solutions into turnkey services and EMS allow us to benefit from the accelerated outsourcing trend and better serve our existing and potential customers.

We believe that we have benefited, and will continue to benefit, from our geographic location in Taiwan. Taiwan is currently the largest center for outsourced semiconductor manufacturing in the world and has a high concentration of EMS providers. Our close proximity to foundries and other providers of complementary semiconductor manufacturing services is attractive to our customers who wish to take advantage of the efficiencies of a total semiconductor manufacturing solution by outsourcing several stages of their manufacturing requirements. We believe that, as a result, we are well positioned to meet the advanced semiconductor engineering and manufacturing requirements of our customers.

Industry Background

General

Semiconductors are the building blocks used to create an increasing variety of electronic products and systems. Continuous improvements in semiconductor process and design technologies have led to smaller, more complex, and more reliable semiconductors at a lower cost per function. These improvements have resulted in significant performance and price benefits to manufacturers of electronic products. As a result, semiconductor demand has grown substantially in our primary end-user markets for communications, computing and consumer electronics, and has experienced increased growth in other markets such as automotive products and industrial automation and control systems.

The semiconductor industry is characterized by strong long-term growth, with periodic and sometimes severe cyclical downturns. The Semiconductor Industry Association reported that worldwide sales of semiconductors increased from approximately US\$51.0 billion in 1990 to approximately US\$627.6 billion in 2024. We believe that overall growth and cyclical fluctuations will continue over the long term in the semiconductor industry.

EMS

EMS providers typically achieve large economies of scale in manufacturing by pooling together product design techniques and providing value-added services such as warranties and repairs. Companies who do not need to manufacture a constant supply of products have increasingly outsourced their manufacturing to these service providers so that they can respond quickly and efficiently to sudden spikes in demand without having to maintain large inventories of products.

EMS are sought by companies in a wide range of industries including, among others, information, communications, computing, consumer electronics, automotive electronics, medical treatment, industrial applications, aviation, navigation, national defense, and transportation. Although affected by global economic fluctuations, we expect the EMS industry to continue to grow in the long term, and we have enhanced our presence in the industry through USI Group.

Outsourcing Trends in Semiconductor Manufacturing

Historically, semiconductor companies designed, manufactured, packaged, and tested semiconductors primarily within their own facilities. However, there is a noticeable industry trend to outsource the manufacturing process. Virtually every significant stage of manufacturing can now be outsourced, with wafer foundry services, semiconductor packaging and testing services, and EMS comprising the largest segments of the independent semiconductor manufacturing services market.

The availability of technologically advanced independent manufacturing services has also enabled the growth of “fabless” semiconductor companies, focusing on design and marketing while outsourcing wafer fabrication, packaging, and testing to independent companies. We believe that the growth in the number and scale of fabless semiconductor companies that rely solely on independent manufacturers will continue to drive our growth. Similarly, the availability of technologically advanced independent manufacturing services has encouraged integrated device manufacturers, traditionally reliant on in-house manufacturing, to increasingly outsource their manufacturing requirements to independent semiconductor manufacturing companies.

We anticipate a rise in semiconductor manufacturing outsourcing in the future due to several factors, including technological expertise, significant capital expenditure, focus on core competencies, and time-to-market pressure.

Trends of Mergers and Acquisitions in the Semiconductor Industry

The global semiconductor industry is highly competitive, and the competitive landscape is changing as a result of a trend toward consolidation within the industry. Packaging and testing service providers, in particular, have engaged in cross-border mergers and acquisitions in recent years as part of their expansion strategy, which have gradually changed the ecosystem of the semiconductor industry.

Examples of mergers and acquisitions by and among semiconductor design companies, integrated device and chips manufacturers, and software business providers include Intel Corporation’s acquisition of Altera Corporation, ON Semiconductor Corporation’s acquisition of Fairchild Semiconductor International, NXP Semiconductors’s acquisition of Freescale Semiconductor, Avago Technologies’s acquisition of Broadcom Corporation, several acquisitions of semiconductor design companies by MediaTek, Bain Capital’s acquisition of Toshiba Corporation’s memory chip business, Microchip Technology’s acquisition of Atmel Corporation and Microsemi Corporation, Qualcomm Incorporated’s attempted acquisition of NXP Semiconductors, Infineon’s acquisition of Cypress, NXP Semiconductors’s acquisition of Marvell’s Wi-Fi Connectivity Business, ON Semiconductor Corporation’s acquisition of Quantenna, NVIDIA’s acquisition of ARM Limited from SoftBank Group, Analog Devices’s acquisition of Maxim Integrated Products, AMD’s acquisition of Xilinx, Beijing Zhiguangxin Holding’s acquisition of Tsinghua Unigroup, AMD’s acquisition of Pensando, and Broadcom’s acquisition of VMware.

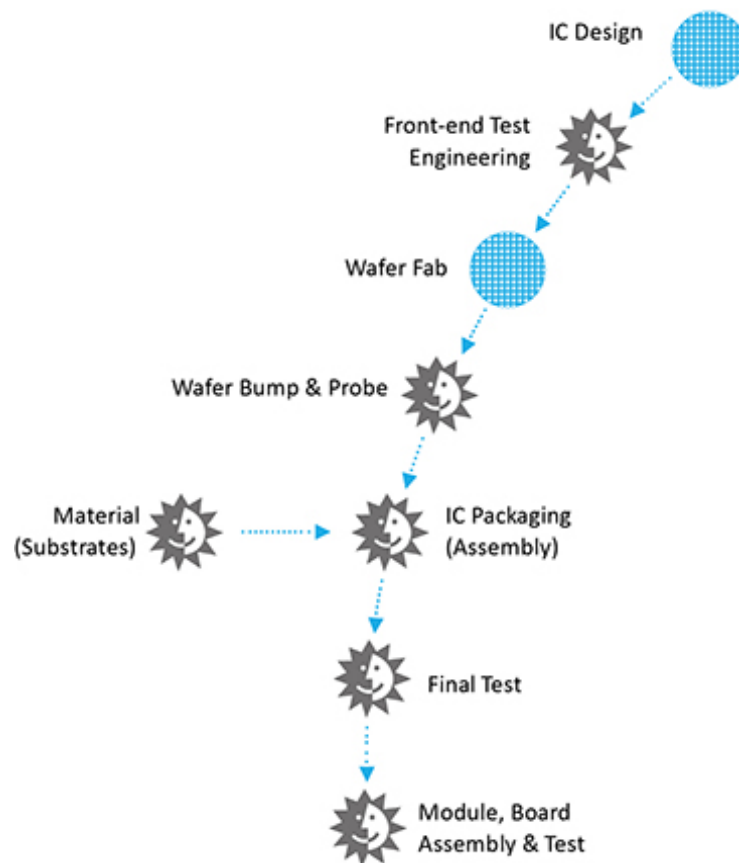
Examples of mergers and acquisitions by and among semiconductor packaging and testing companies include Jiangsu Changjiang Electronics Technology’s acquisition of STATS ChipPAC, Nantong Fujitsu Microelectronics’s acquisition of the packaging and testing factory of AMD, Amkor’s acquisition of J-Devices, and Tianshui Huatian Technology’s acquisition of Unisem.

Throughout our history, we have similarly undertaken several mergers and acquisitions, including the acquisitions of SPIL Group, Motorola’s semiconductor assembly and test sites, ISE Labs, EEMS Test Singapore, and Infineon’s manufacturing subsidiaries in the Philippines and Korea.

As a result of the aforementioned mergers and acquisitions, we and our competitors were able to further strengthen our competitive position by expanding product offerings and combining financial resources. We expect this consolidation trend to continue.

Overview of Semiconductor Manufacturing Process

The manufacturing of semiconductors is a complex process that requires increasingly sophisticated engineering and manufacturing expertise. The manufacturing process can be generally divided into the following stages:



We are involved in all stages of the semiconductor manufacturing process except circuit design and wafer fabrication.

Process		Description
1.	Circuit Design	The design of a semiconductor is developed by laying out circuit components and interconnections.
2.	Engineering Test	Throughout and following the design process, prototype semiconductors undergo engineering testing, which involves software development, electrical design validation, and reliability and failure analysis.
3.	Wafer Fabrication	Process begins with the generation of a photomask through the definition of the circuit design pattern on a photographic negative, known as a mask, by an electron beam or laser beam writer. These circuit patterns are transferred to the wafers using various advanced processes.
4.	Wafer Probe	Each individual die is electrically tested, or probed, for defects. Dies that fail this test are marked to be discarded.
5.	Packaging (or Assembly)	Packaging, also called assembly, is the processing of bare semiconductors into finished semiconductors and serves to protect the die and facilitate electrical connections and heat dissipation.
6.	Final Test	Final testing is conducted to ensure that the packaged semiconductor meets performance specifications. Final testing involves using sophisticated testing equipment, known as testers, and customized software to electrically test several attributes of packaged semiconductors, including functionality, speed, predicted endurance, and power consumption. The final testing of semiconductors is categorized by the functions of the semiconductors tested into logic/mixed-signal/RF/3D IC/discrete final testing and memory final testing. Memory final testing typically requires simpler test software but longer testing time per device tested.
7.	Module, Board Assembly, and Test	Module, board assembly, and test refers to the combination of one or more packaged semiconductors with other components in an integrated module or board to enable increased functionality.
8.	Material	Material refers to the interconnection of materials which connect the input/output on the semiconductor dies to the printed circuit board, such as substrate, leadframe, and flip chip.

Strategy

Our objective is to provide integrated solutions that set industry standards, including packaging, testing services, interconnect materials design and production capabilities, and to lead and facilitate the industry trend toward outsourcing semiconductor manufacturing requirements. The principal elements of our strategy are to:

Grow Our Packaging and Testing Services and Expand Our Range of Offerings

We believe that an important factor in attracting leading semiconductor companies to be our customers is our ability to fulfill the demand for a broad range of packaging and testing solutions on a large scale. We intend to continue to develop process and product technologies to meet the packaging and testing requirements of clients. Our expertise in packaging technology has enabled us to develop sophisticated solutions such as 2.5D/FO-MCM/FO-EB, flip chip packaging, bump chip carrier packaging, stacked die packaging, leading-edge advanced packaging and fine-pitch wire bonding. We are continuously investing in research and development in response to and in anticipation of migrations in technology and intend to continue to acquire access to new technologies through strategic alliances and licensing arrangements.

We have been expanding our semiconductor testing business in response to growing demand for comprehensive testing solutions in the semiconductor industry. By offering testing turnkey solutions, we enable semiconductor companies to shorten product cycle times and improve product quality. We remain committed to expanding our testing business to meet the evolving needs of customers worldwide.

The increasing miniaturization of semiconductors and the growing complexity of interconnect technology have also resulted in the convergence of assembly processes at different levels of integration: chip, module, board, and system. In response to this miniaturization and growing complexity, we have focused on providing module assembly services and, in addition, our subsidiary USI Group has provided us with access to process and product technologies at the levels of module, board, and system assembly and testing, which helps us to better anticipate industry trends and take advantage of potential growth opportunities. We expect to continue to combine our packaging, testing, and materials technologies with the expertise of USI Group at the systems level to develop our SiP business.

Strategically Expand and Streamline Production Capacity

To capitalize on growing industry demand, we intend to strategically expand our production capacity, both through internal growth and selective acquisitions and joint ventures, with a focus on providing cost-competitive and innovative services.

We intend to invest in trends that are essential to the development of the industry. We plan to expand our capacity to meet demand for smaller form factors, higher performance, and higher packaging density.

We expect to focus on providing cost-competitive services through better management of capacity utilization and efficiency improvements and offer our services on a large scale with the intention of driving more integrated device manufacturer outsourcing in the long run.

We evaluate acquisition and joint venture opportunities on the basis of access to new markets and technology, the enhancement of our production capacity, improvement of research and development capabilities, economies of scale and management resources, and closer proximity to existing and potential customers. In October 2023, we acquired HCC Group to expand our automotive wireless business. In August 2024, we acquired Infineon Group's manufacturing subsidiaries in the Philippines and Korea to expand power chip module packaging and testing and lead frame packaging for automotive and industrial automation applications.

Continue to Leverage Our Presence in Key Centers of Semiconductor and Electronics Manufacturing

We intend to continue leveraging our presence in key centers of semiconductor and electronics manufacturing to further grow our business. We have significant packaging, testing, and EMS operations in Taiwan, currently one of the leading centers for outsourced semiconductor and electronics manufacturing in the world. This presence enables our engineers to work closely with our customers as well as wafer foundries and other providers of complementary semiconductors and EMS early in the design process, enhances our responsiveness to the requirements of our customers, and shortens production cycles. In addition, as a turnkey service provider, we are able to offer our products to our customers and complementary service providers within relatively close geographic proximity. Besides our current operations in Taiwan, we intend to expand our operations in our other subsidiaries outside of Taiwan.

In addition to Taiwan, we have major operations in the following locations:

- P.R.C. — a fast-growing market for semiconductor and electronics manufacturing;
- Korea — an important center for the manufacturing of memory and communications devices;
- Malaysia, Singapore, and Vietnam — each a center for outsourced semiconductor and electronics manufacturing in Southeast Asia;
- Silicon Valley in California — the preeminent center for semiconductor design, with a concentration of fabless customers;
- Japan — an emerging market for packaging and testing outsourcing services as Japanese integrated device manufacturers increasingly outsource their semiconductor manufacturing requirements;
- Mexico — a development and manufacturing center for electronic products across different industries with an auxiliary service depot to provide technical services; and
- Europe — an original equipment manufacturing solutions center for the electronics industry that continues to grow, driven by the increasing demand for cost-competitive and flexible manufacturing solutions in various industries.

Strengthen and Develop Strategic Relationships with Our Customers and Providers of Complementary Semiconductor Manufacturing Services

We intend to strengthen existing and develop new strategic relationships with our customers and providers of complementary semiconductor manufacturing services, such as wafer foundries, as well as equipment vendors, raw material suppliers, and technology research institutes, in order to offer our customers total semiconductor manufacturing solutions covering all stages of the manufacturing process from design to shipment. In addition, we are working with our customers to co-develop new packaging technologies and designs.

Since 1997, we have maintained a strategic alliance with TSMC, which designates us as their non-exclusive preferred provider of packaging and testing services for semiconductors manufactured by TSMC. Through our strategic alliance with and close geographic proximity to TSMC, we are able to offer our customers a total semiconductor manufacturing solution that includes access to foundry services in addition to our packaging, testing, and direct shipment services.

Principal Products and Services

We offer a broad range of semiconductor packaging and testing services. In addition, we provide EMS through USI Group. Our package types generally employ either leadframes or substrates as interconnect materials. The semiconductors we package are used in a wide range of end-use applications, including communications, computing, consumer electronics, industrial, automotive, and other applications. Our testing services include front-end engineering testing, which is performed during and following the initial circuit design stage of the semiconductor manufacturing process, wafer probe, final testing, and other related semiconductor testing services. We focus on packaging and testing semiconductors. We offer our customers turnkey services, which consist of packaging, testing, and direct shipment of semiconductors to end users designated by our customers. Our EMS are used in a wide range of end-use applications, including, but not limited to, computing, peripherals, communications, industrial applications, automotive electronics, and server applications. In 2024, our revenues generated from packaging, testing, and EMS accounted for 44.0%, 9.2% and 45.6% of our operating revenues, respectively.

Packaging Services

We offer a broad range of package types to meet the requirements of our customers, including flip chip BGA, flip chip CSP, aCSP (advanced chip scale packages), quad flat packages (QFP), low profile and thin quad flat packages (LQFP/TQFP), bump chip carrier (BCC), quad flat no-lead (QFN) packages, aQFN (advanced QFN), and Plastic BGA. In addition, we provide 3D chip packages, such as aMAP POP (advanced, laser ablation type), which enable our customers to mount packages more easily, and HB PoP (High-Band package on Package) for higher performance orientation and marketing requirement. We also offer other forms of stacked die solutions in different package types, such as stacked die QFN, hybrid BGAs containing stacked wire bond, and FC die. Meanwhile, we are developing cost-effective solutions to 3D packages, such as FOCoS (Fan-out Chip-on-Substrate) and 2.5D (silicon interposer), to fulfill current low-cost and high-performance requirements in parallel with 3D IC with TSV (Through Silicon Via) technology. In addition, to meet current trends toward low-cost solutions, we provide gold, copper, and silver wire bonding solutions which can be applied to traditional gold wire products. We also provide a high-volume manufacturing experience with silver wire bonding for FCCSP Hybrid packages. Furthermore, we are one of the key providers of IoT (Internet of Things), server and automotive services. We believe we are among the leaders in such packaging processes and technologies and are well positioned to lead the technology migration in the semiconductor packaging industry.

Wirebonding. We provide wirebonding, including leadframe-based packages and substrate-based packages. Leadframe-based packages are packaged by connecting the die, using wire bonders, to the leadframe with gold wire or copper wire. As packaging technology improves, the number of leads per package increases. In addition, improvements in leadframe-based packages have reduced the footprint of the package on the circuit board and improved the electrical performance of the package. To have higher interconnected density and better electrical performance, semiconductor packages have evolved from leadframe-based packages to substrate-based packages. The key differences of these package types are the size of the package; the density of electrical connections the package can support; flexibility at lower costs; the thermal and electrical characteristics of the package; and environmentally conscious designs. Substrate-based packages generally employ the BGA design. Whereas traditional leadframe technology places the electrical connection around the perimeter of the package, the BGA package type places the electrical connection at the bottom of the package surface in the form of small bumps or balls. These small bumps or balls are typically distributed evenly across the bottom surface of the package, allowing greater distance between individual leads and higher pin-counts. Our expertise in BGA packages also includes capabilities in stacked-die BGA, which assembles multiple dies into a single package.

The following table sets forth our principal wirebonding packages.

Package Types	Number of Leads	Description	End-Use Applications
Advanced Quad Flat No-Lead Package (aQFN)	104-276	aQFN allows for leadless, multi-row, and fine-pitch leadframe packaging and is characterized by enhanced thermal and electrical performance. aQFN is a cost-effective packaging solution due to its cost-effective materials and simpler packaging process.	Telecommunications products, wireless local access networks, personal digital assistants, digital cameras, low to medium lead count packaging information appliances.
Quad Flat Package (QFP)/Low profile and Thin Quad Flat Package (LQFP/TQFP)	44-256	Designed for advanced processors and controllers, application-specific integrated circuits, and digital signal processors.	Multimedia applications, cellular phones, personal computers, automotive and industrial products, hard disk drives, communication boards such as ethernet, integrated services digital networks, and notebook computers.
Quad Flat No-Lead Package (QFN)/Dual-Row QFN (DR-QFN)/Microchip Carrier (MCC)	8-176	QFN/DRQFN, also known as types of MCC, uses half-encapsulation technology to expose the rear side of the die pad and the tiny fingers, which are used to connect the chip and bonding wire with printed circuit boards. Dual-Row is to increase the lead counts for product requirement.	Cellular phones, wireless local access networks, personal digital assistant devices, and digital cameras.

Package Types	Number of Leads	Description	End-Use Applications
Small Outline Plastic Package (SOP)/Thin Small Outline Plastic Package (TSOP)	8-56	Designed for memory devices including static random access memory, or SRAM, dynamic random access memory, or DRAM, fast static RAM, also called FSRAM, and flash memory devices.	Consumer audio/video and entertainment products, cordless telephones, pagers, fax machines, printers, copiers, personal computer peripherals, automotive parts, telecommunications products, recordable optical disks, and hard disk drives.
Small Outline Plastic J-Bend Package (SOJ)	20-44	Designed for memory and low pin-count applications.	DRAM memory devices, microcontrollers, digital analog conversions, and audio/video applications.
Plastic Leaded Chip Carrier (PLCC)	28-84	Designed for applications that do not require low-profile packages with high density of interconnects.	Personal computers, scanners, electronic games, and monitors.
Plastic Dual In-line Package (PDIP)	8-64	Designed for consumer electronic products.	Telephones, televisions, audio/video applications, and computer peripherals.
Plastic BGA	119-1520	Designed for semiconductors which require the enhanced performance provided by plastic BGA, including personal computer chipsets, graphic controllers and microprocessors, application-specific integrated circuits, digital signal processors, and memory devices.	Telecommunications products, global positioning systems, notebook computers, disk drives, and video cameras.
Stacked-Die BGA	120-1520	Combination of multiple dies in a single package enables package to have multiple functions within a small surface area.	Telecommunications products, local area networks, graphics processor applications, digital cameras, and pagers.
Package-on-Package (POP, aMAP POP)	136-904	This technology places one package on top of another to integrate different functionalities while maintaining a compact size. It offers procurement flexibility, low cost of ownership, better total system cost and faster time to market. Designers typically use the topmost package for memory applications and the bottommost package for ASICs. By using this technology, the memory known good die issue can be mitigated and the development cycle time and cost can be reduced.	Cellular phones, personal digital assistants, and system boards.
Land Grid Array (LGA)	10-72	Leadless package, which is essentially a BGA package without the solder balls. Based on laminate substrate, land grid array packages allow flexible routing and are capable of multichip module functions.	High-frequency integrated circuits such as wireless communications products, computers servers, personal computer peripherals, and MEMS sensors.

Advanced Packages. The semiconductor packaging industry has evolved to meet the requirements of high-performance electronics products. We believe that there will continue to be growing demand for packaging solutions with increased input/output density, smaller size, and a better heat dissipation characteristic.

We have focused on developing our capabilities in certain packaging solutions, such as aCSP (wafer-level chip scale package), flip chip BGA, Heat-Spreader FCBGA, flip-chip CSP, Hybrid FCCSP (Flip Chip + W/B), Flip Chip PiP (Package in Package), Flip Chip PoP (Package on Package), aS³™ (Advanced Single Sided Substrate), HB POP (High-Bandwidth POP), and SESUB. Flip-chip BGA technology replaces wire bonding with wafer bumping for interconnections within the package. Wafer bumping involves the placing of tiny solder balls, instead of wires, on top of dies for connection to substrates. As compared with more traditional packages, which allow input/output connection only on the boundaries of the dies, flip chip or wafer-level package solutions significantly enhance the input/output flow by allowing input/output connections over the entire surface of the dies.

Chip scale packages typically have an area no greater than 120% of the silicon die. For wafer-level packages, the electrical connections are plated or printed directly onto the wafer itself, resulting in a package very close to the size of the silicon die.

Wafer-Level MEMs (WL MEMs) is an advanced assembly technology for MEMs in wafer-level types instead of current LGA or leadframe types using TSV or chip-to-wafer technology. WL MEMs are mainly used in applications such as pressure, temperature, humidity, and gyroscope sensors, among others.

We provide numerous technologies to meet various customer demands. The following table sets forth our principal advanced packages.

Package Types	Number of Leads	Description	End-Use Applications
Wafer-Level Chip Scale Package (aCSP)	4-792	A wafer-level chip scale package that can be directly attached to the circuit board. Provides shortest electrical path from the die pad to the circuit board, thereby enhancing electrical performance.	Cellular phones, personal digital assistants, watches, MP3 players, digital cameras, and camcorders.
Flip Chip Scale Package (FC-CSP, a-fcCSP)	16-1287	A lightweight package with a small, thin profile provides better protection for chips and better solder joint reliability than other comparable package types.	RFICs and memory ICs such as digital cameras, DVDs, devices that utilize wireless technology, cellular phones, GPS devices, and personal computer peripherals.
Flip Chip PiP (Package in Package) (FC-CSP PiP)	500-980	System-in-Package for Flip Chip + Memory known good package inside with better electrical performance package types.	Application processor for smartphone and data modem on portable devices.
Flip Chip PoP (Package on Package) (FC-CSP PoP)	500-1300	SoC (System-on-Chip) die for Assembly to Bottom package and then applied for memory package on top inside with better electrical performance package types.	High-tier application processor for smartphones and data modem on portable devices.
Flip Chip BGA/ HFCBGA(High Performance / Heat Spreader / FCBGA)	16-5475	Using advanced interconnect technology, the flip chip BGA packages allow higher density of input/output connection over the entire surface of the dies. HFCBGA is designed for the semiconductor high-performance requirement of high density of interconnects.	High-performance networking, graphics, server, and data center processor applications.
Hybrid (Flip Chip and Wire Bonding)	49-608	A package technology that stacks a die on top of a probed known good die to integrate ASIC and memory (flash, SRAM, and DDR) into one package and interconnects them with wire bonding and molding. This technology suffers from known good die issues (i.e., one bad die will ruin the entire module). Rework is also not an option in hybrid packages.	Digital cameras, smartphones, bluetooth applications, and personal digital assistants.
aS ³	up to 300	Ultra-thin profile package which is an excellent middle pin-count alternative solution; standard BT material and manufacturing equipment; and lower cost via on pad.	High I/O and short wire length package solution in high-performance requirement.

Package Types	Number of Leads	Description	End-Use Applications
Integrated Passive Device (IPD)	~ 20	IPD can provide a high-performance/high Q-factor inductor and single/double layers for lower cost and turnkey solutions and integrate passives into one IPD chip. IPD requires less involvement in the Surface Mount Technology (the “SMT”) process and is considered to be more compatible with current assembly process and suitable for all package solutions.	Cellular phones, Wi-Fi module, TV, and personal digital assistants.
HBPoP (High-Bandwidth Package On Package)	~ 1300	High-Bandwidth POP can provide a data rate and good signal integrity for Cellular AP, an integration solution for ASIC and memory, decoupling functions for multiple memory mount applications.	Cellular phones and application processors.

Heterogeneous Integration. Heterogeneous Integration refers to the integration of separately manufactured components into a higher-level assembly that, in the aggregate, provides enhanced functionality and improved operating characteristics:

- **SiP and Modules.**

The drive towards semiconductor miniaturization and integration is expanding the commercial potential of SiP, a package or module containing a functional electronic system or subsystem that is integrated and miniaturized through IC greater assembly technologies. With attributes that deliver higher performance, cost-effectiveness, and shorter time to market, SiP technology is enabling functionality and creating more commercial opportunities across a broader variety of electronics applications.

ASEH is a market leader in SiP technologies from design to assembly and high-volume manufacturing. SiP involves the integration of multiple components from IC chips and components including ASICs, Memory, Analog & mixed signals devices, passives, MEMs, sensors, antennas, and other devices into one single package. SiP and Modules products are gaining significant traction within the industry, given growing demand for miniaturized electronic devices that deliver more functions and higher performance, lower power, greater speed, and increased bandwidth. ASEH’s SiP portfolio includes flip chip and wirebond multichip packaging, embedding technologies such as SESUB, and wafer-level technologies including fan-out and IPD. IPD uses a wafer-level process to integrate passive components on an individual substrate. Recent IPD innovation involves the extension of the RDL (Redistribution) process to build a high-quality factor (Q) inductor and RF circuits on top of silicon wafers. It can be used in the following three approaches to enhance product performance: 1) replace discrete components such as Balun and Filter, 2) integrate other passive components and act as interposer, and 3) replace PWB and act as a substrate of the module. In addition, we leverage some of our SMT-based technologies, such as compartment shielding, double-sided module, and antenna integration.

We also offer module assembly services, which combine one or more packaged semiconductors with other components in an integrated module to enable increased functionality for system-level assembly. End-use applications for modules include cellular phones and wireless LAN applications, Bluetooth applications, camera modules, automotive applications, toys, networking, storage, and power management.

- **Leading-Edge Advanced Packages.**

As AI and high-performance computing continue to make inroads on a global basis, we believe there is an increased demand for semiconductor devices that deliver enhanced performance, lower latency, increased bandwidth, and greater power efficiency. ASEH strives to meet the increasing package complexity needs related to increasing I/O density, expanding power delivery requirements and providing more robust inter-die connectivity from AI & HPC products. We have established ourselves as a leader through the successful introduction of leading-edge advanced packaging solutions, which have played a pivotal role in bringing advanced ASIC and HBM products to the marketplace.

We define leading-edge advanced packages as packaging technologies that incorporate redistribution layer (RDL) processes. By leveraging RDL processes, embedded integration, and 2.5D and 3D technologies, these packaging solutions facilitate unprecedented innovation in integrating multiple chips within a single package. Notable technologies include ASEH's FOWLP (Fan-Out Wafer-Level Package), high-density RDL-based Fanout Package-on-Package (FOPoP), Fanout Chip-on-Substrate (FOCoS), Fanout Chip-on-Substrate-Bridge (FOCoS-Bridge), Fanout System-in-Package (FOSiP), Through Silicon Via (TSV)-based 2.5D and 3D IC, along with Co-Packaged Optics processing capabilities. Our comprehensive technology toolbox provides customers with the capabilities necessary to develop highly integrated silicon packaging solutions, optimizing clock speed, bandwidth, and power delivery, while reducing co-design time, product development cycles, and time to market.

The following table sets forth our leading-edge advanced packaging technologies.

Package Types	Number of Leads	Description	End-Use Applications
FOWLP (Fan-Out Wafer-Level Package)	~ 1500+	FOWLP provides an extended solution/package type to integrate most different functional chips or packages and to have good reduction in resistance and inductance over FCCSP, better thermal performance and smaller form factors of packages, and can be applied for different stack or SiP solutions.	Cellular phones, logic devices, power management, RF, Codec, IoT, wearables, and networking.
Fanout Package-on-Package (FOPoP)	1520	An RDL-based package that integrates a fan-out bottom package with a standard package mounted on the top side, utilizing fine-pitch plated Cu posts for through-mold vertical interconnections. The bottom package features two RDLs (top and bottom routing planes) connected by the Cu posts, formed through wafer-level fan-out technology, enabling thinner and finer electrical traces.	Application processors for smartphone and antenna-in-packages for mobile/automotive.
Fanout Chip-on-Substrate (FOCoS)	3000-7000	A fan-out package flip-chip mounted on a high pin count BGA substrate. It incorporates an RDL facilitating shorter die-to-die interconnections between multiple chips.	ASICs and HBM for HPC, networking, server and AI/ML applications.
Fanout Chip-on-Substrate-Bridge (FOCoS-Bridge)	3000-7000	FOCoS—Bridge further utilizes tiny silicon bridge with routing layers as in-package interconnect between chiplets. The silicon bridges are embedded in the fan-out RDL layer to achieve faster data transfer rates.	Multi-die and HBM integration for AI, data center, server and networking applications. Memory and passive integration for APU/CPU/GPUs and chiplets for applications across AI, data center, mobile, auto processors, communication infrastructure, and networking.
Fanout System-in-Package (FOSiP)	Customized	FOSiP can achieve higher performance and smaller form factor through fan-out RDL.	Smartphones, tablets, RF infrastructures, edge computing, and IoT devices.
2.5D and 3D IC	3000-7000	2.5D/3D include multiple IC within the same package. In a 2.5D structure, two or more active semiconductor chips are placed side-by-side on a silicon interposer to achieve extremely high die-to-die interconnect density. In a 3D structure, active chips are integrated through die stacking to achieve shortest interconnects and smallest package footprint.	High-end GPUs, high-end FPGA, network switch / routers for data center & 5G infrastructure, AI accelerators for AI training.
Co-Packaged Optics	3000-7000	CPO/silicon photonics serve as a conduit for light propagation and leverage the established CMOS ecosystem, encompassing front-end and back-end processes, to realize high-density photonic integrated circuits. This approach enables the implementation of intricate optical functionalities, such as filtering or modulation, on a compact chip at a low cost.	ASICs on network switch and stand-alone laser engine for high speed.

Automotive Electronics. We assemble automotive electronic products based on our leading technology, good quality systems, and automation. We provide a variety of products, such as leadframe base, substrate base, Flip Chip, and Wafer-Level packages. We also provide robust package solutions to customers and end-users, including most types of industrial package solutions together with tailor-made solutions to meet customers' and end-users' requirements for automotive specifications.

Interconnect Materials. Interconnect materials connect the input/output on the semiconductor dies to the printed circuit board. Interconnect materials include substrate, which is a multilayer miniature printed circuit board, and is an important element of the electrical characteristics and overall performance of semiconductors. We produce substrates for use in our packaging operations.

The demand for higher-performance semiconductors in smaller packages will continue to spur the development of IC substrates that can support the advancement in circuit design and fabrication. As a result, we believe that the market for substrates will grow and the cost of substrates as a percentage of the total packaging process will increase. In the past, substrates we designed for our customers were produced by independent substrate manufacturers. Since 1997, we have been designing and producing a portion of our interconnect materials in-house. In 2024, our interconnect materials operations supplied approximately 6.8% of our consolidated substrate requirements by value.

The following table sets forth, for the periods indicated, the percentage of our packaging revenues accounted for by each principal type of packaging products or services.

	Year Ended December 31,		
	2022	2023	2024
Bumping, Flip Chip, WLP, and SiP	50.5%	51.3%	54.6%
Wirebonding ⁽¹⁾	41.6%	39.8%	36.3%
Discrete and others	7.9%	8.9%	9.1%
Total	100.0%	100.0%	100.0%

(1) Includes leadframe-based packages such as QFP/TQFP, QFN/MCC and PLCC/PDIP and substrate-based packages, such as various BGA package types and LGA.

Testing Services

We provide a complete range of semiconductor testing services, including front-end engineering testing, wafer probing, final testing of logic/mixed-signal/RF semiconductors and SiP/MEMS/Discrete modules, and other test-related services.

The testing of semiconductors requires technical expertise and knowledge of the specific applications and functions of the semiconductors tested as well as the testing equipment utilized. We believe that our testing services employ technology and expertise which are among the most sophisticated in the semiconductor industry. In addition to maintaining different types of testing equipment, which enables us to test a variety of semiconductor functions, we work closely with our customers to design effective testing solutions on multiple equipment platforms.

In recent years, complex, high-performance logic/mixed-signal/RF semiconductors and SiP/MEMS modules have accounted for an increasing portion of our testing revenues.

Front-End Engineering Testing. We provide front-end engineering testing services, including customized software development, electrical design validation, and reliability and failure analysis.

- **Customized Software Development.** Test engineers develop customized software or test programs to test semiconductors using automated test equipment. Each device generally requires a specialized test program in order to test the conformity of each particular semiconductor to its required functionality and specification.
- **Electrical Design Validation.** A prototype of the designed semiconductor is subjected to electrical tests using advanced test equipment and customized software. These tests assess whether the prototype semiconductor complies with a variety of different operating specifications, including functionality, frequency, voltage, current, timing, and temperature range.
- **Reliability Analysis.** Reliability analysis is designed to assess the long-term reliability of the semiconductor and its suitability of use for intended applications. Reliability testing can include “burn-in” services, which electrically stress a device, usually at high temperature and voltage, for a period of time long enough to cause the failure of marginal devices.
- **Failure Analysis.** In the event that the prototype semiconductor does not function to specifications during either the electrical design validation or reliability testing processes, it is typically subjected to failure analysis to determine the cause of the failure to perform as anticipated. As part of this analysis, the prototype semiconductor may be subjected to a variety of analyses of electrical testing.

Wafer Probing. Wafer probing is the step immediately before the packaging of semiconductors and involves visual inspection and electrical testing of the processed wafer for defects to ensure that it meets our customers’ specifications. Wafer probing services require expertise and testing equipment similar to that used in final testing, and most of our testers can also be used for wafer probing.

Logic/Mixed-signal/RF Module and SiP/Discrete Final Testing. We conduct final tests of a wide variety of logic/mixed-signal/RF semiconductor devices and SiP/MEMS/discrete modules, with the number of leads or bumps ranging from the single digits to over 30 thousand and operating frequencies of over 44 Gbps for digital semiconductors and 44 GHz for 5G mmWave semiconductors, which are at the high end of the range for the industry. The products we test include applications for wired, wireless, and mobile communications, satellite communications, automotive, home entertainment, IoT, personal computer, AI, and high-performance computing applications, as well as a variety of consumer and application-specific integrated circuits for various specialized applications.

Other Test-Related Services. We provide a broad range of additional test-related services, such as:

- **Electric Interface Board and Mechanical Test Tool Design.** Process of designing individualized testing apparatuses such as test load boards, sockets, handler change kits, and probe cards for unique semiconductor devices and packages.
- **Program Conversion.** Process of converting a test program from one test platform to different test platforms.
- **Program Efficiency Improvement.** Process of optimizing the program code.
- **Burn-In Testing.** Burn-in testing is the process of electrically stressing a device, usually at high temperature and voltage, for a period of time to simulate the continuous use of the device to determine whether this use would cause the failure of marginal devices.
- **Module and SiP Testing.** We provide multi-die-module and SiP testing through integrated bench solutions or via automatic test equipment.
- **System Level Testing.** We provide customized system-level testing as a device functional simulation test solution, offering higher test coverage after the final test.

Drop Shipment Services. We offer drop shipment services for shipment of semiconductors directly to end users designated by our customers. Drop shipment services are provided mostly in conjunction with our testing services. We provide drop shipment services to a significant percentage of our testing customers. A substantial portion of our customers at each of our facilities have qualified these facilities for drop shipment services. Since drop shipment eliminates the additional step of inspection by the customer before shipment to the end user, quality of service is a key consideration. We believe that our ability to successfully execute our full range of services, including drop shipment services, is an important factor in maintaining existing customers as well as attracting new customers.

The following table sets forth, for the periods indicated, the percentage of our testing revenues accounted for by each type of testing service.

	Year Ended December 31,		
	2022	2023	2024
Front-end engineering testing	1.8%	3.1%	2.0%
Wafer probing	38.6%	35.4%	40.3%
Final testing	59.6%	61.5%	57.7%
Total	100.0%	100.0%	100.0%

EMS

We provide integrated solutions for EMS in relation to computing, peripherals, communications, industrial, automotive, and server applications through USI Group. The key products and services we offer to our customers include:

- Computing: motherboards for server and PCs; peripherals; port replicators; network attached systems; solid state drives;
- Communications: Wi-Fi; SiP;
- Consumer products: control boards for flat panel devices; SiP;
- Automotive electronics: automotive EMS; automotive wireless solutions; regulators/rectifiers; powertrain systems;
- Industrial products: point-of-sale systems; smart handheld devices; and
- Others: field replacement units; return material authorization.

Seasonality

See “Item 5. Operating and Financial Review and Prospects—Operating Results—Quarterly Operating Revenues, Gross Profit and Gross Margin.”

Sales and Marketing

Sales and Marketing Presence

We maintain sales and marketing offices in Taiwan, the U.S., Belgium, Singapore, the P.R.C., Korea, Malaysia, Japan, and a number of other countries. We also have sales representatives operating in certain other countries in which we do not have offices. Our sales and marketing offices in Taiwan are located in Hsinchu, Taichung and Kaohsiung. We conduct marketing research through our customer service personnel and through our relationships with our customers and suppliers we endeavor to keep abreast of market trends and developments. We also provide advice on production process technology to our major customers planning the introduction of new products. When placing orders, our customers specify which of our facilities will receive the orders. Our customers conduct separate qualification and correlation processes for each of our facilities that they use. See “—Qualification and Correlation by Customers.”

Customers

Our five largest customers together accounted for approximately 50.2%, 48.0%, and 48.4% of our operating revenues in 2022, 2023, and 2024, respectively. One customer (including other customers for whom OEM services were provided on its behalf) accounted for more than 10.0% of our operating revenues in 2022, 2023, and 2024.

We package and test for our customers a wide range of products with end-use applications in the communications, computing, and consumer electronics/industrial/automotive sectors. The following table sets forth a breakdown of the percentage of our operating revenues generated from our packaging and testing services, for the periods indicated, by the principal end-use applications of the products that were packaged and tested.

	Year Ended December 31,		
	2022	2023	2024
Communications	52.6%	50.8%	50.9%
Computing	15.8%	18.1%	18.1%
Consumer electronics/industrial/automotive/others	31.6%	31.1%	31.0%
Total	100.0%	100.0%	100.0%

Our EMS provides a wide range of products with end-use applications. The following table sets forth a breakdown of the percentage of our operating revenues generated from our EMS for the periods indicated by the principal end-use applications.

	Year Ended December 31,		
	2022	2023	2024
Communications	37.3%	35.9%	34.7%
Computing	10.2%	8.9%	10.1%
Consumer electronics	32.0%	31.6%	31.7%
Industrial	12.8%	13.3%	11.6%
Automotive	6.6%	8.3%	9.8%
Others	1.1%	2.0%	2.1%
Total	100.0%	100.0%	100.0%

We categorize our operating revenues geographically based on the country in which the customer is headquartered. The following table sets forth, for the periods indicated, the percentage breakdown by geographic regions of our operating revenues.

	Year Ended December 31,		
	2022	2023	2024
U.S.	66.5%	63.6%	60.2%
Taiwan	12.5%	12.1%	15.0%
Asia	11.3%	13.0%	13.9%
Europe	9.5%	11.2%	10.7%
Others	0.2%	0.1%	0.2%
Total	100.0%	100.0%	100.0%

Qualification and Correlation by Customers

Customers generally require that our facilities undergo a stringent qualification process during which the customer evaluates our operations and production processes, including engineering, delivery control, and testing capabilities. The qualification process typically takes up to several weeks but can take longer depending on the requirements of the customer. In the case of our testing operations, after we have been qualified by a customer and before the customer delivers semiconductors to us for testing in volume, a process known as correlation is undertaken. During the correlation process, the customer provides us with sample semiconductors to be tested and either provides us with the test program or requests that we develop a conversion program. In some cases, the customer also provides us with a data log of results of any testing of the semiconductors that the customer may have conducted previously. The correlation process typically takes up to two weeks but can take longer depending on the requirements of the customer. We believe our ability to provide turnkey services reduces the amount of time spent by our customers in the qualification and correlation process. As a result, customers utilizing our turnkey services are able to achieve shorter production cycles.

Pricing

We price our packaging services and EMS by taking into account the actual costs and prevailing market prices. We price our testing services primarily on the basis of the amount of time, measured in central processing unit seconds, taken by the automated testing equipment to execute the test programs specific to the products being tested, as well as the cost of the equipment, with additional consideration of prevailing market prices. Prices for our packaging, testing, and EMS are confirmed at the time orders are received from customers, which is typically several weeks before delivery.

Raw Materials and Suppliers

Packaging

The principal raw materials used in our packaging processes are interconnect materials such as leadframes and substrates, gold wire, and molding compound. The silicon die, which is the functional unit of the semiconductor to be packaged, is supplied in the form of silicon wafers. Each silicon wafer contains a number of identical dies. We receive the wafers from customers or foundries on a consignment basis. Consequently, we generally do not incur inventory costs relating to the silicon wafers used in our packaging process.

We do not maintain large inventories of leadframes, substrates, bonding wire, or molding compound, but generally maintain sufficient stock of each principal raw material based on blanket orders and rolling forecasts of near-term requirements received from customers. In addition, several of our principal suppliers dedicate portions of their inventories as reserves to meet our production requirements. However, shortages in the supply of materials experienced by the semiconductor industry have in the past resulted in occasional price adjustments and delivery delays. In order to reduce adverse impacts caused by the price fluctuations of raw materials, we have developed substitute raw materials, such as copper wire, which costs much less than gold wire. However, we cannot guarantee that we will not experience shortages or price increases in the near future, or that we will be able to obtain adequate supplies of raw materials in a timely manner and at a reasonable price or to develop any substitute raw materials. In the event of a shortage and/or price increase, we generally inform our customers and work together to accommodate changes in delivery schedules and/or the price increase of raw materials. See “Item 5. Operating and Financial Review and Prospects—Operating Results—Raw Material Costs.”

We produce substrates for use in our packaging operations. In 2024, our interconnect materials operations supplied approximately 6.8% of our consolidated substrate requirements by value. See “—Principal Products and Services—Interconnect Materials.”

We have adjusted our purchases of raw materials and our production processes in order to use raw materials that comply with EU regulations, such as EU RoHS and EU REACH, for part of our production. This legislation restricts the use in the EU of certain substances that the EU deems harmful to consumers including certain grades of molding compounds, solder, and other raw materials that are used in our products. Manufacturers of electrical and electronic equipment must comply with this legislation in order to sell their products in an EU member state. Any failure to comply with regulatory environmental standards may have a material adverse effect on our results of operations.

We established ASE Global Integrated Solutions Co., Ltd. to manage and implement procurement processes for certain materials and equipment requirements. Leveraging the specialized expertise and advantages among certain subsidiaries, we aim to achieve significant cost reductions in the overall procurement process through the establishment of ASE Global Integrated Solutions Co., Ltd.

Testing

For the functional and burn-in testing of semiconductors, no other raw materials are needed. However, we often design and outsource the manufacturing of test interface products such as load boards, probe cards, and burn-in boards.

EMS

Our manufacturing processes use many raw materials. For 2024, raw materials costs accounted for 79.6% of our operating revenues from EMS. Our principal raw materials include, among others, printed circuit boards, integrated chips, ink, semiconductor devices, computer peripherals, and related accessories and electronic components. Our principal raw materials varied in the past, depending on the end-use products provided.

To ensure quality, on-time delivery and pricing competitiveness, we have established both a standardized supplier assessment system and an evaluation mechanism, continued to maintain close working relationships with our suppliers, and jointly created a stable and sustainable supply chain. In addition, we adjusted the procurement strategy in line with industry trends as well as the nature of raw materials, and decentralized the sources of raw materials to lower our supply concentration risk. However, we cannot ensure that we will not experience any shortages or price increases in the near future. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Our revenues and profitability may decline if we are unable to obtain adequate supplies of raw materials and energy in a timely manner and at a reasonable price.”

Equipment

Packaging

The wire bonding process is important for routing the signal out of die to the system for the IC wire-bonding solutions. Thus, wire bonder is the important equipment used for such process. As products become finer and finer pitch, the bumping process will replace the wire bonding process for the signal routing purpose. Thus, sputter and plater will be the crucial equipment for this type of process.

Wire bonders connect the input/output terminals on the silicon die using extremely fine gold or copper wire to leads on leadframes or substrates. Typically, a wire bonder may be used, with minor modifications, for the packaging of different products. As of January 31, 2025, we operated an aggregate of 25,299 wire bonders, of which 24,722 were fine-pitch wire bonders. For the packaging of certain types of substrate-based packages, die bonders are used in place of wire bonders. The number of bonders at a given facility is commonly used as a measure of the packaging capacity of the facility. In addition to bonders, we maintain a variety of other types of packaging equipment, such as wafer grinds, wafer mounts, wafer saws, heat sink placement, automated molding machines, laser markers, solder plates, pad printers, dejunkers, trimmers, formers, substrate saws, and scanners. We purchase our packaging equipment from major international manufacturers, including All Ring Tech Co., Ltd., KLA Corporation, Tongren Industrial Automation Equipment Co., Ltd., CohPros International Co., Ltd., and ASMPT Technology Limited.

Testing

Testing equipment is the most capital-intensive component of the testing process. We generally seek to purchase testers from different suppliers with similar functionality and acquire the ability to test a variety of different semiconductors. We purchase testers from major international manufacturers, primarily Teradyne, Inc. and Advantest Corporation. Upon acquisition of new testers, we install, configure, calibrate, perform burn-in diagnostic tests on, and establish parameters for the testers based on the anticipated requirements of existing and potential customers and considerations relating to market trends. As of January 31, 2025, we operated an aggregate of 6,343 testers. In addition to testers, we maintain a variety of other types of testing equipment, such as automated handlers and probers (special handlers for wafer probing), scanners, reformers, and computer workstations for use in software development. Each tester may be attached to a handler or prober. Handlers attach to testers and transport individual packaged semiconductors to the tester interface. Probers similarly attach to the tester and align each individual die on a wafer with the interface to the tester.

For the majority of our testing equipment, we typically base our purchases on prior discussions with our customers about their forecast requirements. The balance consists of testing equipment on consignment from customers, which is dedicated exclusively to the testing of these customers' specific products.

Test programs, which consist of the software that drives the testing of specific semiconductors, are written for a specific testing platform. We sometimes perform test program conversions that enable us to test semiconductors on multiple test platforms. This portability between testers enables us to allocate semiconductors tested across our available test capabilities and thereby improve capacity utilization rates. In cases where a customer requires the testing of a semiconductor product that is not yet fully developed, the customer may provide computer workstations to us to test specific functions. In cases where a customer has specified testing equipment that was not widely applicable to other products that we test, we have required the customer to furnish the equipment on a consignment basis.

EMS

The SMT assembly line is the key facility of our electronic manufacturing operations and generally includes a printer and one or two high-speed mounters and/or a multifunction mounter. The SMT assembly process primarily consists of the following three manufacturing steps: (i) solder paste stencil printing, (ii) component placement, and (iii) solder reflow. High-speed SMT assembly systems offer both economic and technical advantages that may reduce both production cost and time while meeting quality requirements. Thus, SMT has become the most popular assembly method for sophisticated electronic devices. We had 217 SMT lines as of January 31, 2025.

Intellectual Property

As of January 31, 2025, we held a total of 6,433 patents, 2,077 Taiwan patents, 2,030 U.S. patents, 2,189 P.R.C. patents, 87 Europe patents, and 50 patents in other countries related to various semiconductor packaging technologies and invention, utility, and design on our EMS. In addition, as of January 31, 2025, we had a total of 2,351 pending patent applications, 296 in Taiwan, 643 in the U.S., 1,353 in the P.R.C., 43 in Europe, and 16 in other countries. Moreover, we filed several trademarks applications in Taiwan, the U.S., the P.R.C., and the EU. For example, “ASE,” “aCSP,” “a-EASI,” “a-fcCSP,” “aQFN,” “a-QFN,” “a-S³,” “a-TiV,” “aWLP,” “a-WLP,” “iSiP,” “iWLP,” “aSiM,” “SiP-id,” “SPIL,” “HSiP,” “XnBay,” “Emerald,” and “VIPack” have been registered in Taiwan.

We have also entered into various non-exclusive technology license agreements with other companies involved in the semiconductor manufacturing process, including Infineon Technologies AG, TDK Corporation, and DECA Technologies Inc. The technology we license from these companies includes solder bumping, redistribution, ultra CSP assembly, advanced QFN assembly, wafer-level packaging, and other technologies used in the production of package types, such as BCC, flip chip BGA, film BGA, aQFN, and chip embedding. One of our license agreements with Infineon Technologies AG will remain in effect until expiration of the patents licensed by the agreement, and the other automatically renews each year unless otherwise agreed between the parties. Our license agreement with TDK Corporation will remain in effect until expiration of TDK Corporation’s patents licensed by the agreement. Our license agreement with DECA will expire on January 13, 2026.

In addition, we improve our technological platform by licensing innovative package technologies. For example, through wafer bumping and redistribution technology, we are able to form and redistribute bumps on the chip to make a silicon die by directly attaching the substrate using bumps rather than wire bonding, and through wafer level CSP technology, we are able to produce a chip scale package at the stage of wafer level.

Our success depends in part on our ability to obtain, maintain, and protect our patents, licenses, and other intellectual property rights, including rights under our license agreements with third parties.

Quality Control

We believe that our process technology and reputation for high quality and reliable services have been important factors in attracting and retaining leading international semiconductor companies as customers of our services and/or products. We maintain a quality control staff at each of our facilities. Our quality control staff typically includes engineers, technicians, and other employees who monitor the processes in order to ensure high quality. Our quality assurance systems impose strict process controls, statistical in-line monitors, supplier control, data review and management, quality controls, and corrective action systems. Our quality control employees operate quality control stations along with production lines, monitor clean room environments, and follow up on quality through outgoing product inspection and interaction with customer service staff. We have established quality control systems that are designed to ensure high-quality products/service to customers, high testing reliability, and high production yields at our facilities. We also have established an environmental management system in order to ensure that we can comply with the environmental standards of our customers and the countries within which they operate. See “—Raw Materials and Suppliers—Packaging.” In addition, our facilities have been qualified by all of our major customers after satisfying stringent quality standards prescribed by these customers.

Our packaging and testing operations are undertaken in clean rooms where air purity, temperature, and humidity are controlled. To ensure stability and integrity of our operations, we maintain clean rooms at our facilities that meet U.S. Federal Standard 209E class 1,000, 10,000 and 100,000 standards.

ISE Labs’ testing facilities in Fremont, California are considered suitably equipped by the U.S. Defense Logistics Agency to perform the MIL-STD-883 tests on monolithic microcircuits in accordance with MIL-PRF-38535.

We have also obtained many certifications on our packaging, testing, and interconnect materials facilities. Some of these certifications are required by some semiconductor manufacturers as a threshold indicator of a company’s quality control standards or by many countries in connection with sales of industrial products. The table below sets forth the main certifications or verifications we have for our packaging, testing and interconnect materials.

Location	IATF 16949 ⁽¹⁾	ISO 9001 ⁽²⁾	ISO 14001 ⁽³⁾	ISO 17025 ⁽⁴⁾	ISO 14064-1 ⁽⁵⁾	ISO 14067 ⁽⁶⁾	IECQ HSPM QC 080000 ⁽⁷⁾	Sony Green Partner ⁽⁸⁾	ISO 45001 ⁽⁹⁾	TOSHMS ⁽¹⁰⁾	ISO 50001 ⁽¹¹⁾	ISO 13485 ⁽¹²⁾	ISO 28000 ⁽¹³⁾	ISO 26262 ⁽¹⁴⁾	ISO 15408-EAL6 ⁽¹⁵⁾	TL 9000 ⁽¹⁶⁾	ISO 22301 ⁽¹⁷⁾	RBA Edition ⁽¹⁸⁾	ISO/IEC 27001 ⁽¹⁹⁾	GSMA SAS-UP ⁽²⁰⁾	ISO 46001 ⁽²¹⁾	ISO 21434 ⁽²²⁾	IEC 62443-2-1 ⁽²³⁾
Taiwan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
P.R.C.	✓	✓	✓	✓	✓		✓	✓	✓		✓		✓					✓	✓				
Korea	✓	✓	✓				✓	✓	✓						✓			✓	✓				
Japan	✓	✓	✓		✓		✓	✓	✓		✓							✓					
Malaysia	✓	✓	✓		✓		✓	✓	✓					✓				✓					
Singapore	✓	✓	✓		✓		✓		✓						✓			✓					
U.S.		✓	✓	✓					✓						✓			✓					
Philippines	✓	✓	✓						✓														

- (1) IATF 16949 standard provides continual improvement with an emphasis on the prevention of defects and reduction of variation and waste in the supply chain.
- (2) ISO 9001 quality standards are related to quality management systems and designed to help organizations ensure that they meet the needs of customers and other stakeholders while meeting statutory and regulatory requirements related to the product.
- (3) ISO 14001 standard provides criteria for an environmental management system. It can be used by any organization that wants to improve resource efficiency, reduce waste and drive down costs.
- (4) ISO 17025 is the main ISO standard used by testing and calibration laboratories.
- (5) ISO 14064-1 standard provides governments, businesses, regions and other organizations with a complementary set of tools for programs to quantify, monitor, report and verify greenhouse gas emissions.
- (6) ISO 14067 standard provides guidelines for the quantification and communication of the carbon footprint of a product.
- (7) IECQ HSPM QC080000 is a certification designed to manage, reduce and eliminate hazardous substances.
- (8) “Sony Green Partner” indicates our compliance with the “Sony Green Package” standard requirements.
- (9) ISO 45001 standard provides a comprehensive framework to improve workplace safety, reduce risks, and enhance overall well-being.
- (10) TOSHMS is the Taiwan Occupational and Health Management System.
- (11) ISO 50001 standard provides a practical way to improve energy use, through the development of an energy management system
- (12) ISO 13485 standard provides the requirements for a quality management system specific to the medical devices industry.
- (13) ISO 28000 standard provides security management framework dealing with security assurance in a supply chain.
- (14) ISO 26262 standard provides guidelines for functional safety of electrical and electronic systems in production automobiles.
- (15) ISO 15408-EAL6 is a framework that outlines the criteria for globally recognized standards and security inspections for IT products.
- (16) TL 9000 standard provides the supply chain quality requirements of the global communications industry.
- (17) ISO 22301 standard provides guidelines requirements to plan, establish, implement, operate, monitor, review, maintain and continually improve a documented management system.
- (18) The Responsible Business Alliance (RBA) is the world’s largest industry coalition dedicated to responsible business conduct in global supply chains.
- (19) ISO/IEC 27001 standard provides companies of any size and from all sectors of activity with guidance for establishing, implementing, maintaining and continually improving an information security management system.
- (20) The Groupe Speciale Mobile Association (the “GSMA”) SAS-UP (Security Accreditation Scheme – Universal Integrated Circuit Card Production) standard defines a comprehensive set of protocols and security measures for securely handling production data, including certificate management, data generation, and data personalization for Smart Cards (SC) and eUICC-sensitive products.
- (21) ISO 46001 standard provides requirements and contains guidance for its use in establishing, implementing and maintaining a water efficiency management system.
- (22) ISO 21434 standard provides engineering requirements for cybersecurity risk management.
- (23) IEC 62443-2-1 standard provides best practices for cybersecurity and provides a way to assess the level of security performance.

We also have strict process controls in our EMS business. Universal Global Scientific Industrial Co., Ltd.'s facilities in Nantou, Taiwan, are considered suitably equipped by the US Defense Logistics Agency to perform the MIL-STD-883 tests on assemble, seal, and test hybrid microcircuits in compliance with MIL-PRF-38534 Classes H and K. Universal Scientific Industrial Poland Sp. z o.o. is in compliance with VDA 6.3 audit, which focuses on process audit for planning and manufacturing of products and services, and VDA 6.5, which is a qualification for product audit. The table below sets forth the certifications or verifications we have obtained for our EMS facilities.

Location	IATF 16949	ISO 9001	ISO 14001	ISO 17025	ISO 14064-1	TISAX ⁽¹⁾	IECQ HSPM QC 080000	ISO 45001	TOSHMS	ISO 50001	ISO 13485	ISO 22301	ISO 26262	TL 9000	RBA Edition	ISO 21434	ISO/IEC 27001	AS/EN 9100: 2016 ⁽²⁾	IRIS ISO/TS 22163 ⁽³⁾
Taiwan	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓			✓		✓		
P.R.C.	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓			
Mexico	✓	✓	✓		✓	✓	✓	✓		✓	✓		✓		✓				
Poland	✓	✓	✓					✓			✓				✓				
United Kingdom	✓	✓	✓					✓										✓	
U.S.	✓	✓	✓								✓								
France	✓	✓	✓								✓							✓	
Germany	✓	✓	✓					✓			✓								
Czech Republic		✓	✓																✓
Tunisia	✓	✓	✓																
Vietnam	✓	✓	✓		✓		✓	✓		✓					✓				
Hungary	✓		✓					✓											

- (1) TISAX standard provides the assessment and exchange mechanism for information security in the automotive industry.
- (2) AS/EN 9100: 2016 standard provides the management of development, production, manufacturing, installation, construction, and maintenance as well as trade and distribution for the aerospace industry.
- (3) IRIS ISO/TS 22163 standard provides quality management system requirements that can be applied throughout the supply chain for the railway industry.

The global market for semiconductor packaging and testing markets is highly competitive. We face competition from a number of sources and integrated device manufacturers with in-house packaging and testing capabilities and fabless semiconductor design companies with their own in-house testing capabilities. Some of these integrated device manufacturers have commenced, or may commence, in-house packaging and testing operations in Asia. Substantially all of packaging and testing companies that compete with us have established operations in Taiwan and across the region.

Integrated device manufacturers that use our services continuously evaluate our performance against their own in-house packaging and testing capabilities. These integrated device manufacturers may have access to more sophisticated technologies and greater financial and other resources than we do. We believe, however, that we can offer greater efficiency at lower cost while maintaining equivalent or higher quality for several reasons. First, as we benefit from specialization and economies of scale by providing services to a large base of customers across a wide range of products, we are better able to reduce costs and shorten production cycles through high-capacity utilization and process expertise. Second, as a result of our customer base and product offerings, our equipment generally has a longer useful life. Third, as a result of the continuing reduction of investments in in-house packaging and testing capacity and technology at integrated device manufacturers, we are better positioned to meet their packaging and testing requirements on a large scale.

Our packaging and testing business also faces actual and potential competition from companies at other levels of the supply chain, which have the financial resources and technical capabilities to enter into and effectively compete within the industry. For example, TSMC has offered advanced packaging technologies such as integrated fan-out (the "InFO") technology.

Our EMS business faces significant competition from other EMS providers, such as Hon Hai Precision Industry Co., Ltd., with comprehensive integration, wide geographic coverage, and large production capabilities that enable them to achieve economies of scale. We believe, however, that we can still achieve satisfactory performance in the market given that we have been able to provide products with high quality and we are capable of designing new products by cooperating with our customers.

Environmental Matters

Our operations of packaging, interconnect materials, and EMS generate both hazardous and non-hazardous wastes. We have installed various types of anti-pollution equipment for the treatment of liquid and gaseous chemical waste and adopted comprehensive antipollution measures for the effective management of environmental protection that we believe are consistent with international standards. In addition, we believe we are in compliance in all material respects with present environmental laws and regulations applicable to all our operations and facilities.

In order to demonstrate our commitment to environmental protection, in December 2013, ASE's board of directors approved contributions to environmental protection efforts in Taiwan in a total amount of not less than NT\$3,000.0 million (US\$91.5 million), to be made in the following 30 years. We have made contributions in the amount of NT\$100.0 million for each of the years 2022, 2023, and 2024 through the ASE Environmental Protection and Sustainability Foundation, which we established as a channel to continuously implement the activities related to environmental protection projects in Taiwan.

Our operations involving wafer-level process and requiring wastewater treatment at our Kaohsiung facility have been subject to scrutiny by the Kaohsiung City Environmental Protection Bureau as a result of alleged water pollution violations that occurred in 2013. For additional details of these administrative actions and judicial proceedings related to our environment claims, see “Item 8. Financial Information—Consolidated Statements and Other Financial Information—Legal Proceedings.”

Defending against any of the pending or future actions will likely be costly and time-consuming and could significantly divert our management team’s efforts and resources. Any future suspension of operations at our facilities may adversely affect our business, financial condition, results of operations and cash flows. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Any environmental claims or failure to comply with any present or future environmental laws and regulations, as well as any fire or other industrial accident, may require us to spend additional funds and may materially and adversely affect our financial condition and results of operations.”

Climate Change Management

The board of directors of ASEH serves as the supervisory and governance body for climate-related issues. It is responsible for approving risk policies, overseeing climate-related risks, and making decisions pertaining to climate matters. The board of directors has established the risk management committee and the corporate sustainability committee (the “CSC”) as bodies responsible for managing climate-related risks and opportunities. Each committee consists of directors and senior executives who are separately responsible for managing climate risks and climate sustainability strategies, promoting sustainable development, of risk management mechanisms, and implementing decisions made by the board of directors. We report on the management and execution status of climate-related issues to the board of directors on a quarterly basis, enabling the board of directors to understand the impact of climate change on our business operations and develop corresponding strategies. We conduct annual assessments of climate-related physical and transition risks. We utilize questionnaires to identify extreme weather events, including but not limited to heavy rainfall, drought, and significant temperature changes. Additionally, we assess the potential impact and influence of these weather events on our business operations and finances. In order to effectively implement our climate-related policies, the executive secretariat of the risk management committee collaborates with our subsidiaries to conduct an identification and assessment of climate-related physical and transition risks. This process involves using questionnaires and collecting data to identify physical and transition risks or events that could affect our business objectives, as well as their financial and operational implications. Based on the findings of this process, countermeasures and management strategies are proposed, and the results of climate risk identification are reported to the board of directors by the CSC annually, which tracks the implementation status of our climate measures regularly.

ASEH has passed a compliance review by the Science Based Targets initiative and also committed to Net-Zero emission targets to exert positive social influence. We have planned mid- and long-term absolute carbon reduction goals. Using 2016 as the base year for the completion of Scopes 1 and 2 verification, we plan to reduce absolute Scope 1 and 2 GHG emissions 58.8% by 2030 and commit to reduce absolute Scope 3 GHG emissions 25% by 2030 from a 2020 base year.

We are committed to reducing the emission of greenhouse gases from our business operations. We aim to address and integrate climate change into our business strategies by investing in carbon credits, expanding the use of renewable energy and low-carbon transportation, developing low-carbon products, and supply chain engagement. We are committed to continuously revising and updating our targets, while tracking and monitoring the progress of our existing climate-related goals.

Transition to Low-Carbon Economy

Our climate leadership stems from bringing low carbon solutions to the global market and through balancing operational growth and low-carbon transformation targets that meet stakeholders’ expectations.

We are dedicated to providing high efficiency products as well as investing in the research and development of eco-friendly design. Starting from the product design stage, we actively incorporate environmentally friendly materials into production processes. We have also maintained a multi-site certification for ISO 14001, ISO 14064-1, and ISO 50001, which regularly examines the effectiveness of our environment and energy management systems. Global warming and climate change are contributing to extreme weather patterns and causing more stress to the environment. As global citizens, we are taking measurable actions to support and promote environmental sustainability. We have signed up with the major customer's "Supplier Clean Energy Program" to increase our energy efficiency and transition to clean and renewable electricity. We have also joined the Semiconductor Climate Consortium (SCC) which is the first global collaborative of semiconductor ecosystem companies focused on reducing greenhouse gas emissions across the value chain, and Taiwan Institute for Sustainable Energy's Net-zero Emission Alliance in pledging commitment to Net-zero 2030/2050, to build a supply chain that is resilient, transformative, and progressive.

We believe proactively engaging in supplier development is key to the sustainable development of our supply chain. We provide trainings, workshops, seminars, and face-to-face consultation to reinforce our suppliers' capabilities to address sustainability issues and enhance their awareness of best practices for sustainability. In 2015, we joined the RBA, previously known as the Electronic Industry Citizens Coalition, and every year all of our facilities complete the RBA's Self-Assessment Questionnaire to identify the labor, environmental, and ethical risks in their respective operations. For internal management, we have adopted the guidelines set out by the United Nations Framework Convention on Climate Change and encourage all our sites to submit self-initiated goals that are set according to their respective operation scale and capabilities.

To improve overall energy management, we established a green energy platform composed of multiple departments of our Group as well as teams based in Taiwan. We have allocated resources to support our suppliers in establishing GHG and product carbon footprint management systems that accelerate their efforts to meet emission regulatory requirements. In 2022, we collaborated with third party consultants on a medium to long term supplier low carbon guidance program which was conducted both online and in-person. The program not only supports suppliers to obtain external certifications such as ISO 14064-1 certification and ISO 14067 (carbon footprint verification) but also facilitates carbon inventory management across the supply chain. During the guidance process, we identify carbon hotspots within suppliers' operational processes and execute relevant emission reduction plans. By expanding the scope of engagement with our supply chain, we work with suppliers to enhance their carbon management capabilities and leverage our influence in the industry. As part of our strategic efforts to build a stable and more sustainable supply chain, we typically hold the Supplier Sustainability Awards every two or three years, which recognizes suppliers with outstanding performance in sustainability. In 2020 and 2023, the award program was jointly organized by all three ASEH subgroups. A new supplier incentive program focusing on ASEH's Low Carbon, Circular, Collaborative and Inclusive strategies was launched, and the number of participating suppliers expanded. The program encourages suppliers to submit sustainability partnership projects of a 1-2 year duration for review by ASEH and independent third parties. The submitted projects will undergo a rigorous selection process based on the implementation timeframe and efficacy, and selected projects will be funded by the ASE Environmental Protection and Sustainability Foundation.

Information Security Management

We rely on the efficient and uninterrupted operation of complex information technology applications, systems, and networks to operate our business. Our systems are vulnerable to damage or interruption from earthquakes, terrorist attacks, floods, fires, power loss, telecommunications failures, cyberattacks, computer viruses, denial of service attacks, or other attempts to harm our system, and similar events. Cybersecurity threats continue to expand and evolve globally, and the risks we face from cyberattacks have increased significantly in recent years. Some of these attacks originate from well-organized, and highly skilled organizations. Although we maintain robust cybersecurity protocols to guard against these threats and there have not been reported major cyberattacks against our systems in recent years, any such attack or system or network disruption could result in a loss of our intellectual property, the release of commercially sensitive information and customer or employee personal data. Failures to protect the privacy of customer and employee confidential data against breaches of network security could result in damage to our reputation. For further details on our cybersecurity measures, see "Item 16K. Cybersecurity." For more information about these risks, see "Risk Factors – Cyber-attacks could harm our business, financial condition, and results of operations."

Furthermore, some of our data centers are located in areas with a high risk of major earthquakes. Our data centers are also subject to break-ins, sabotage, and intentional acts of vandalism, and to potential disruptions if the operators of these facilities have financial difficulties. Some of our systems are not fully redundant, and our disaster recovery planning cannot account for all eventualities. The occurrence of a natural disaster, or a decision to close a facility we are using without adequate notice for financial reasons or other unanticipated problems at our data centers could result in loss of production capabilities and lengthy interruptions in our service. Any damage to or failure of our systems could result in interruptions in our service. Interruptions in our service could materially and adversely affect our business, financial condition, and results of operations.

Risk Management

Our board of directors established a risk management committee and approved the “Risk Management Policies and Procedures” as the ultimate guiding risk management principle. Awareness in risk management forms an integral part of our management, and risk management has been duly incorporated into our business strategies and organizational culture. To effectively review and oversee the overall sustainability-related opportunities and risks of ASEH, the CSC assigns a supervisory role to the chief administration officer of ASEH. Because chief administration officer concurrently serves as a member of the risk management committee and the chief risk officer of ASEH, in addition to performing a rolling review of the company’s internal sustainability strategies and approaches, the chief administration officer is also responsible for monitoring changes in the external environment and providing simultaneous feedback on the company’s risk management when analyzing sustainability-related opportunities and risks. On an annual basis, the chief administration officer reports the progress of strategies and implementation status directly to the board of directors and risk management committee, ensuring concise visibility of the environmental, social, and governance risk management at ASEH and its subsidiaries. We conduct risk assessments on an annual basis. For major risks, we formulate specific management plans covering goals, organizational structure and responsibilities, and risk management procedures. These plans have been developed to identify, measure, monitor and control various risk exposures effectively. We also conduct a comprehensive evaluation on the probability impacts of various risks faced during the ordinary course of business and take appropriate measures to continuously make improvements to better respond to natural disasters and other disruptive events such as cyberattacks or energy crises that could adversely affect the operation of our business. We proactively implement risk management plans and report to the board of directors on a yearly basis. For a discussion of these risks and other factors, see “Item 3. Key Information—Risk Factors.”

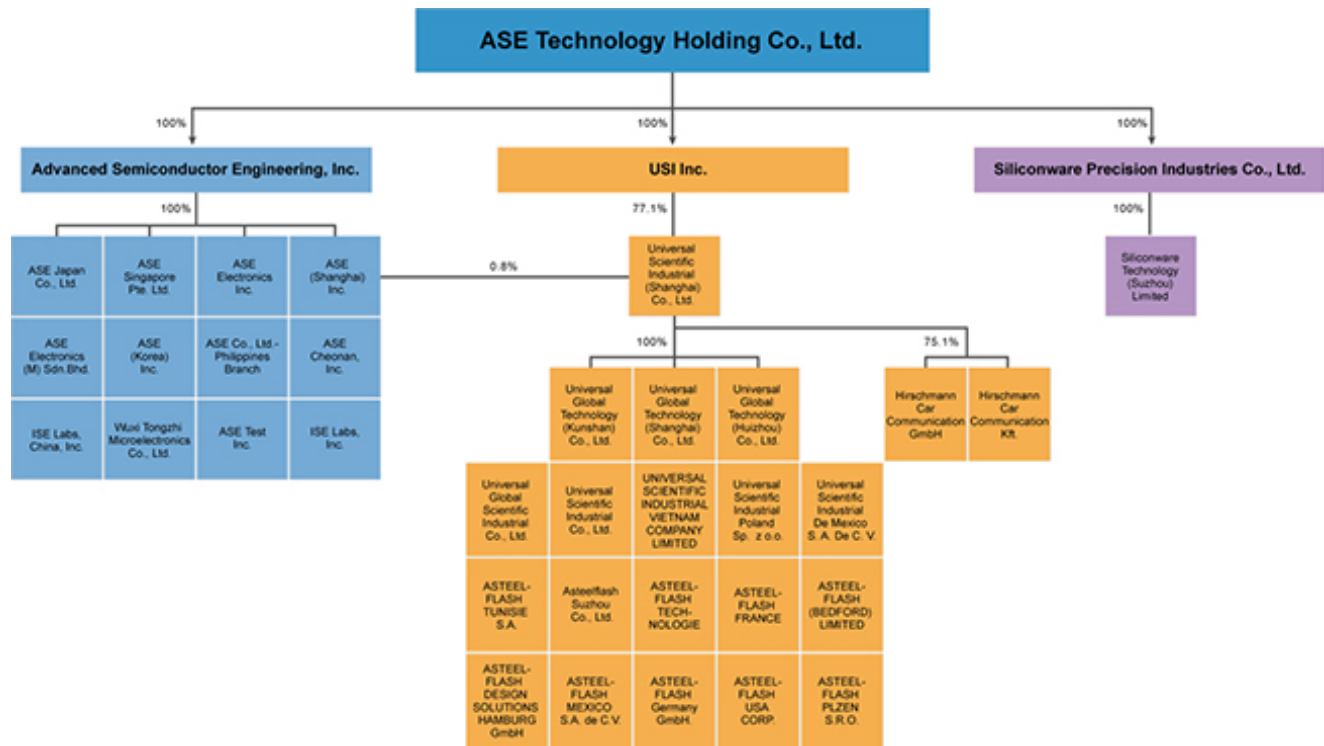
Insurance

We have insurance policies covering property damage and damage to our production facilities, buildings, and machinery. We also have liability insurance policies, including but not limited to general liability insurance policies, product liability insurance policies for specified clients and products, and directors’ and officers’ insurance policies. In addition, considering the cybersecurity risks and challenges facing business entities, we adopted a cyber liability insurance policy, which is expected to help us respond to and control the impact of a cybersecurity incident.

We are not insured against the loss of key personnel.

ORGANIZATIONAL STRUCTURE

The following chart illustrates our corporate structure, including our principal packaging, testing, and EMS manufacturing subsidiaries as of January 31, 2025. Except for USI Inc., the following chart does not include intermediate holding subsidiaries, internal trading subsidiaries, or those subsidiaries without manufacturing operations and in the process of construction. For complete information on our subsidiaries, see Note 4 to our consolidated financial statements included in this annual report.



Our Consolidated Subsidiaries

ASE Group

ASE Inc., which was established on March 23, 1984, is headquartered in Taiwan and provides packaging and testing services, wafer sort testing, final testing services, substrate design, and manufacturing. Major subsidiaries of ASE Group include ASE Inc. (includes ASE Chung Li), ASE Test Taiwan, ASE Malaysia, ISE Labs, ASE Singapore, ASE Electronics , ASE Korea, ASE Japan, ASE Shanghai, Wuxi Tongzhi, CHE, and ASEPCAYMAN.

SPIL Group

Siliconware Precision Industries Co., Ltd., which was established on May 17, 1984, is our wholly owned subsidiary. SPIL offers a full range of packaging and testing solutions, including advanced packages, substrate packages and leadframe packages, as well as testing for logic and mixed signal devices. SPIL also provides turnkey services, from packaging and testing services. See “Item 4. Information on the Company—Information on the Company—History and Development of the Company—SPIL Acquisition” for more information.

USI Group

USI Group engages primarily in EMS in relation to computing, consumer electronics, communications, industrial, and automotive, among other services and businesses.

As of January 31, 2025, we held 100.0% interest in USI Inc., 77.9% interest in USI Shanghai through our subsidiaries USI Inc. and ASE Shanghai, 100.0% interest in FAFG through our subsidiaries USIFR and USI Shanghai, and 58.5% interest in HCC Group. See “Item 4. Information on the Company—Information on the Company—History and Development of the Company—USI Group and USI Group Restructuring” for more information.

PROPERTY, PLANTS AND EQUIPMENT

We operate a number of packaging, testing, and electronic manufacturing facilities globally. Our facilities provide varying types or levels of services with respect to different end-product focus, customers, technologies, and geographic locations. With our diverse facilities we are able to tailor our packaging, testing, and electronic manufacturing solutions closely to our customers' needs. The following table sets forth the location, commencement of operation, primary use, approximate floor space, and ownership of our principal manufacturing facilities in operation as of January 31, 2025. See "Item 5. Operating and Financial Review and Prospects—Liquidity and Capital Resources" for more information.

Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
ASE Inc.	Kaohsiung, R.O.C.	March 1984	Our primary packaging facility, which offers complete semiconductor manufacturing solutions in conjunction with ASE Test Taiwan and foundries. Focuses primarily on packaging services such as flip chip, wafer bumping, and fine-pitch wire bonding.	9,537,000	Land: leased Buildings: owned and leased
	Chung Li, R.O.C.	Acquired in July 1999	An integrated packaging and testing facility that specializes in semiconductors for communications and consumer applications.	4,429,000	Land and buildings: owned
ASE Test Taiwan	Kaohsiung, R.O.C.	Acquired in April 1990	Our primary testing facilities, which offer complete semiconductor manufacturing solutions in conjunction with ASE Inc.'s facility in Kaohsiung and foundries located in Taiwan. Focuses primarily on advanced logic/mixed-signal/RF/3D IC testing for integrated device manufacturers, fabless design companies, and system companies.	1,304,000	Land: leased Buildings: owned and leased
ASE Malaysia	Penang, Malaysia	February 1991	An integrated packaging and testing facility that focuses primarily on the requirements of integrated device manufacturers.	1,744,000	Land: leased Buildings: owned
ASE Korea	Paju, Korea	Acquired in July 1999	An integrated packaging and testing facility that specializes in semiconductors for radio frequency, sensor, and automotive applications.	1,532,000	Land and buildings: owned
ISE Labs	California, U.S.	Acquired in May 1999	A front-end engineering and final testing facility located in Northern California in close proximity to some of the world's largest fabless design companies.	144,000	Land and buildings: owned
ASE Singapore Pte. Ltd.	Singapore	Acquired in May 1999	An integrated packaging and testing facility that specializes in semiconductors for communication, computers, and consumer applications.	443,000	Land: leased Buildings: owned and leased
ASE Shanghai	Shanghai, P.R.C.	June 2004	Design and production of semiconductor packaging materials.	1,690,000	Land: leased Buildings: leased
ASE Japan	Takahata, Japan	Acquired in May 2004	An integrated semiconductor packaging and testing facility that specializes in cellular phone, household appliance, and automotive applications.	108,000	Land and buildings: leased

Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
ASE Electronics	Kaohsiung, R.O.C.	August 2006	Facilities for the design and production of interconnect materials such as substrates used in semiconductor packaging.	612,000	Land: leased Buildings: owned
Wuxi Tongzhi	Wuxi, P.R.C.	Acquired in May 2013	An integrated semiconductor packaging and testing facility that specializes in consumer applications.	78,000	Land and buildings: leased
ISE Shanghai	Shanghai, P.R.C.	October 2018	A semiconductor testing facility.	128,000	Land and buildings: leased
CHE	Cheonan, Korea	Acquired in August 2024	An integrated semiconductor packaging and testing facility.	11,000	Land and buildings: leased
ASE Co., Ltd. - Philippines Branch	Cavite, Philippines	Acquired in August 2024	An integrated semiconductor packaging and testing facility.	148,000	Land: leased Buildings: leased and owned
Universal Scientific Industrial	Nantou, R.O.C.	Acquired in February 2010	Manufacture and sales of electronic components and related accessories.	418,000	Land and buildings: owned
Universal Scientific Industrial De Mexico S.A. De C.V.	Guadalajara and Tonalá, Mexico	Acquired in February 2010	Manufacture of motherboard manufacture and computer components.	1,755,000	Land and buildings: owned
USI Shanghai	Shanghai, P.R.C.	Acquired in February 2010	Design, manufacture, and sales of electronic components.	1,294,000	Land: leased Buildings: owned and leased
Universal Global Technology (Kunshan) Co. Ltd.	Kunshan, P.R.C.	August 2011	Design and manufacture of electronic components.	1,056,000	Land and buildings: leased
Universal Global Scientific Industrial Co., Ltd.	Nantou, R.O.C.	February 2010	Manufacture of electronic components of telecommunication products and cars, and provision of related R&D services.	1,689,000	Land: owned Buildings: owned and leased
Universal Global Technology (Shanghai) Co., Ltd.	Shanghai, P.R.C.	Established in September 2013	Sales and processing of computer and communication peripherals as well as business in import and export of goods and technology.	968,000	Land and buildings: leased
Universal Scientific Industrial Poland Sp. z o.o.	Wrocław-Kobierzyce, Poland	Acquired in October 2019	Design and manufacture of electronic components and new electronic applications.	504,000	Land and buildings: owned
Universal Global Technology (Huizhou) Co., Ltd.	Huizhou, P.R.C.	October 2021	Research and manufacture of new electronic applications, communications, computers, and other electronics products; provides auxiliary technical services as well as import and export services.	1,895,000	Land: leased Buildings: owned

Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
UNIVERSAL SCIENTIFIC INDUSTRIAL VIETNAM COMPANY LIMITED	Haiphong, Vietnam	July 2021	Manufacture of IC assembly for wearable devices.	1,286,000	Land: leased Buildings: owned
Hirschmann Car Communication Kft.	Bekescsaba, Hungary	Acquired in October 2023	Manufacture and sales of antenna products and RF amplifiers, connectors and wave straps.	344,000	Land and buildings: owned
Hirschmann Car Communication GmbH	Neckartenzlingen, Germany	Acquired in October 2023	Manufacture, sales as well as research and development of printed circuit board assemblies (PCBAs) and tuners.	372,000	Land and buildings: leased
ASTEELFLASH (BEDFORD) LIMITED	Bedford, United Kingdom	Acquired in December 2020	Design and manufacture of electronic components, such as industrial, telecommunication, IoT, data processing, consumer electronics, and aerospace related devices.	51,000	Land and buildings: leased
ASTEELFLASH FRANCE	Mercin-et-Vaux, Normandie, Cleurie, Strasbourg, Langan and Grenoble, France	Acquired in December 2020	Design and manufacture of electronic components, such as complex mechatronic subsets, electronic boards and mechatronic subsets engineering.	910,000	Land and buildings: owned and leased
ASTEELFLASH TUNISIE S.A.	La Soukra, Tunisia	Acquired in December 2020	Design and manufacture of electronic components, such as PCBA assembly, coating, varnishing, and in-circuit testing capabilities.	236,000	Land and buildings: leased
ASTEELFLASH TECHNOLOGIE	Alencon, France	Acquired in December 2020	Design and manufacture of industrial components as well as projection of plastic.	173,000	Land and buildings: owned
Asteelflash Suzhou Co., Ltd.	Suzhou, P.R.C.	Acquired in December 2020	Design and manufacture of electronic components, such as in SMT assembly for PCBA and system assembly/box build for module/final product in different segments.	1,452,000	Land and buildings: owned
Asteelflash Germany GmbH.	Bad Hersfeld, Eberbach, and Bonn, Germany	Acquired in December 2020	Design and manufacture of electronic components, such as PCB assembly and high/medium mix to low/medium volume electronic manufacturing services.	918,000	Land and buildings: owned and leased
ASTEELFLASH DESIGN SOLUTIONS HAMBURG GmbH	Hamburg, Germany	Acquired in December 2020	Design and manufacture of electronic components, such as low/mid volumes with mid/high complexity products.	38,000	Buildings: leased
ASTEELFLASH PLZEN S.R.O.	Pilsen, Czech Republic	Acquired in December 2020	Design and manufacture of electronic components, such as solder paste printers and in-line solder paste inspection.	40,000	Land and buildings: leased
ASTEELFLASH USA CORP.	California, U.S.	Acquired in December 2020	Design and manufacture of electronic components, such as solder paste printers and in-line solder paste inspection.	130,000	Land and buildings: leased
ASTEELFLASH MEXICO S.A. de C.V.	Tijuana, Mexico	Acquired in December 2020	Design and manufacture of electronic components such as automotive and commercial products.	133,000	Land and buildings: leased

Facility	Location	Commencement of Operation	Primary Use	Approximate Floor Space (in sq. ft.)	Owned or Leased
Siliconware Precision Industries Co., Ltd.	Taichung, Changhua and Hsinchu, R.O.C.	Acquired in April 2018	Packaging and testing facility, which offers semiconductor packaging and testing services.	9,788,000	Land: owned and leased Buildings: owned
SZ	Suzhou, P.R.C.	Acquired in April 2018	Packaging and testing facility, which offers semiconductor packaging and testing services.	1,823,000	Land: leased Buildings: owned

We have leased land in the Kaohsiung Nanzih Technology Industrial Park from Bureau of Industrial Parks, Ministry of Economic Affairs (the “MOEA”) with different lease terms for several years that will expire in August 2061. We have leased land from the Central Taiwan Science Park Administration in Taichung with 19-year to 20-year terms that will expire in December 2041. We have leased land from Hsinchu Science Park Administrations in Hsinchu with 20-year to 40-year terms that will expire in December 2043. We have leased land in Taichung from MOEA for 10 years that will expire in March 2032. No sublease or lending of the land is allowed. The MOEA, the Central Taiwan Science Park Administration, and the Hsinchu Science Park Administrations have the right to adjust the rental price in the event the government revalues the land. The leases are typically renewable with one-month to three-month notice prior to the termination date.

Smart Factory

To enhance factory efficiency, improve manufacturing process quality, and meet customer delivery time demands, we have invested in automated, lights-out factories. Automation, heterogeneous integration in machine and production systems, and heterogeneous integration in SiP are 3 major forces driving smart factories and digital transformation. At the end of 2024, we had 56 smart factories in operation and we will continue to make further investment into automating manufacturing capacity.

Our Kaohsiung facility is our operation headquarters and houses our industry-leading R&D center, which is dedicated to providing world-class assembly, wafer bumping, and test services and also offers full turnkey services, including substrate design and manufacturing capabilities. Our 5G smart factory, in collaboration with entrepreneurship, academic and government research institutions, has commenced operation at Kaohsiung facility. The smart factory features the digital transformation of factory processes that are highly secured and highly reliable through facilitating 5G wireless infrastructure integration, smart heterogeneous equipment integration, and OT security system integration.

We continuously evaluate our need for future expansion based on market condition and future demand requirements to meet our expected future growth. For information on the aggregate capacity of our facilities we operate, see “—Business Overview—Equipment.” For administrative actions and judicial proceedings related to Kaohsiung Facility, see “Item 8. Financial Information—Consolidated Statements and Other Financial Information—Legal Proceedings.”

Item 4A. Unresolved Staff Comments

None.

Item 5. Operating and Financial Review and Prospects

OPERATING RESULTS

The following discussion of our business, financial condition, and results of operations should be read in conjunction with our consolidated financial statements, which are included elsewhere in this annual report. This discussion contains forward-looking statements that reflect our current views with respect to future events and financial performance. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of any number of factors, such as those set forth under “Item 3. Key Information—Risk Factors” and elsewhere in this annual report. See “Special Note Regarding Forward-Looking Statements.” Please refer to our Form 20-F filed with the Securities and Exchange Commission on April 3, 2024 (File No. 001-16125) for our discussion of financial information and operating results for 2023.

Overview

We offer a broad range of semiconductor packaging and testing services, and we offer EMS through USI Group. In addition to offering each service separately, we also offer turnkey services, which include integrated packaging, testing, and direct shipment of semiconductors to end users designated by our customers and solution-based proactive original design manufacturing. In addition, we have been generating revenues from our real estate business and the manufacturing of integrated circuits. Our operating revenues increased from NT\$581,914.5 million in 2023 to NT\$595,409.6 million (US\$18,158.3 million) in 2024.

Discussed below are several factors that have had a significant influence on our financial results in recent years.

Pricing and Revenue Mix

We price our services taking into account the actual costs involved in providing these services, with consideration of prevailing market prices. The majority of our prices and revenues is denominated in U.S. dollars. Any significant fluctuation in exchange rates, especially between NT dollars and U.S. dollars, will affect our costs and, in turn, our revenues.

In the case of semiconductor packaging, the cost of the silicon die, typically the most costly component of the packaged semiconductor, is usually not reflected in our costs (or revenues) since it is generally supplied by our customers on a consignment basis.

The semiconductor industry is characterized by a general trend toward declining prices for products and services of a given technology over time. In addition, during periods of intense competition and adverse conditions in the semiconductor industry, the rate of this decline may be more rapid than in other years. The average selling prices of our packaging and testing services have experienced sharp declines during such periods as a result of intense price competition from other market participants that attempt to maintain high-capacity utilization levels in the face of reduced demand.

Declines in average selling prices have historically been partially offset by changes in our revenue mix, and typically the selling price is largely dependent on the complexity of the services. Revenues derived from more advanced package types, such as flip chip BGA, higher-density packages with finer lead-to-lead spacing, or pitch, and testing of more complex, high-performance semiconductors have particularly increased as a percentage of total revenues. We intend to continue to focus on package types such as bumping, flip chip BGA and SiP, developing and offering new technologies in packaging and testing services, and expanding our capacity to achieve economies of scale, as well as improving production efficiencies for older technologies, in order to mitigate the effects of declining average selling prices on our profitability.

Our profitability for a specific package type does not depend linearly on its average selling price. Some of our more traditional package types, which typically have low average selling prices, may well command steadier and sometimes higher margins than more advanced package types with higher average selling prices.

High Fixed Costs

Our operations, in particular our testing operations, are characterized by relatively high fixed costs. We expect to continue to incur substantial depreciation and other expenses, especially from our acquisitions of packaging and testing equipment and facilities. Our profitability depends in part not only on absolute pricing levels for our products/services, but also on utilization rates on equipment, commonly referred to as “capacity utilization rates.” Increases or decreases in our capacity utilization rates could have a significant effect on gross margins since the unit cost of our products and/or services generally decreases as fixed costs are allocated over a larger number of units. The capacity utilization rates of the machinery and equipment installed at our production facilities typically depend on factors such as the volume and variety of products, the efficiency of our operations in terms of the loading and adjustment of machinery and equipment for different products, the complexity of the different products to be packaged or tested, the amount of time set aside for the maintenance and repair of the machinery and equipment, and the experience and schedule of work shifts of operators.

In 2023 and 2024, our depreciation, amortization, and rental expenses included in operating costs as a percentage of operating revenues was 9.0% and 9.1%, respectively. The increase in depreciation, amortization, and rental expenses as a percentage of operating revenues in 2024 compared to 2023 was primarily a result of the depreciation of new equipment. In general, these costs do not decline when customer demand or our capacity utilization rates drop. A relatively modest increase or decrease in revenue can have a significant effect on our operating margins and on depreciation, amortization, and rental expenses as a percentage of revenue. We begin depreciating our equipment when the machinery is placed into service. There may sometimes be a time lag between when our equipment is available for use and when it achieves high levels of utilization. In particular, the capacity utilization rates for our testing equipment are more severely affected during an industry downturn as a result of a decrease in outsourcing demand from integrated device manufacturers, which typically maintain larger in-house testing capacity than in-house packaging capacity.

In addition to purchasing testers, we also lease a portion of our testers, which we believe allows us to better manage our capacity utilization rates and cash flows. Since leased testers can be replaced with more advanced testers upon the expiration of the lease, we believe that these leases have enabled us to improve our capacity utilization rates by allowing us to better align our capacity with changes in equipment technology and the needs of our customers. For more information about our testers, including the number of testers under lease, see “Item 4. Information on the Company—Business Overview—Equipment—Testing.”

Raw Material Costs

Substantially all of our raw material costs are accounted for by packaging, the production of interconnect materials, and EMS. Our EMS in particular requires more significant quantities of raw materials than our packaging and production of interconnect materials. In 2024, raw material costs accounted for 79.6% of our operating revenues from EMS, and our revenues generated from EMS contributed to 45.6% of our operating revenues. In 2023 and 2024, raw material cost as a percentage of our operating revenues was 53.3% and 51.5%, respectively.

We have developed copper wire to gradually replace gold wire in the packaging processes in order to benefit from the lower material cost of copper. However, gold wire is still and will continue to be one of the principal raw materials for our packaging processes. It may be difficult for us to adjust our average selling prices to account for fluctuations in the price of gold. Thus, we expect our raw material costs to continue to be affected by fluctuations in the price of gold.

Recent Accounting Pronouncements

Please refer to Note 3 to our consolidated financial statements included in this annual report.

Critical Accounting Estimates

Impairment of goodwill. We only monitor goodwill for financial reporting purposes, not for internal management purposes. Therefore, goodwill is allocated to the cash-generating units for evaluation of impairment: packaging segment, testing segment, EMS segment and other segment. Determining whether goodwill is impaired requires an estimation of the value in use of the cash-generating units to which goodwill has been allocated. The calculation of the value in use requires management to estimate the future cash flows expected to be generated from the cash-generating units and use a suitable discount rate in order to calculate the present value. Where changes in facts and circumstances result in downward revision of actual future cash flows or upward revision of discount rates, a material impairment loss may arise. An impairment charge is incurred to the extent the carrying amount exceeds the recoverable amount. These estimates change from year-to-year based on operating results, semiconductor industry market conditions, as well as other factors and could materially affect the determination of the value in use of each cash-generating unit.

In evaluation of goodwill for impairment at the end of each year, we perform evaluation of goodwill for impairment by reviewing the recoverable amounts based on value in use which incorporates cash flow projections estimated by management covering a five-year period. The cash flows beyond that five-year period are extrapolated using a steady per annum growth rate. In assessing value in use, the estimated future cash flows are discounted to their present value using annual pre-tax discount rates which was 13.91%-14.56% as of December 31, 2024. The key assumption used in calculating each segment's value in use also included the growth rates for operating revenues, which were based on the forecast for us and the industry as well as our historical performance.

We considered a sensitivity analysis of revenues growth achievement and expected return on capital expenditures to support the assumptions and to test the reasonableness of value in use of cash-generating unit, and also considered the terminal growth rate and the weighted average cost of capital. The results of the sensitivity analyses in the assumptions did not cause the carrying amount of goodwill to exceed the recoverable amount. As of December 31, 2024, we had goodwill of NT\$52,525.3 million (US\$1,601.9 million). For the years ended December 31, 2022, 2023 and 2024, no impairment loss was recognized. Our conclusion could, however, change in the future if actual results differ from our estimates and judgments are made under different assumptions and conditions. See notes 4, 5 and 18 to our consolidated financial statements included in this annual report for further information.

Results of Operations

The following table sets forth, for the periods indicated, selected financial data from our consolidated statements of comprehensive income.

	Year Ended December 31,						
	2022		2023		2024		
	NT\$	Percentage	NT\$	Percentage	NT\$	US\$	Percentage
	(in millions, except percentages)						
Operating revenues	670,872.6	100.0%	581,914.5	100.0%	595,409.6	18,158.3	100.0%
Operating costs	(535,942.6)	(79.9)%	(490,157.4)	(84.2)%	(498,477.8)	(15,202.2)	(83.7)%
Gross profit	134,930.0	20.1%	91,757.1	15.8%	96,931.8	2,956.1	16.3%
Operating expenses	(54,754.4)	(8.2)%	(51,429.4)	(8.8)%	(57,765.4)	(1,761.7)	(9.7)%
Other operating income and expenses, net	1,014.3	0.2%	1,321.8	0.1%	1,172.6	35.8	0.2%
Profit from operations	81,189.9	12.1%	41,649.5	7.1%	40,339.0	1,230.2	6.8%
Non-operating income, net	573.7	0.1%	962.3	0.2%	1,394.4	42.5	0.2%
Profit before income tax	81,763.6	12.2%	42,611.8	7.3%	41,733.4	1,272.7	7.0%
Income tax expense	(17,145.5)	(2.5)%	(5,304.0)	(0.9)%	(7,916.5)	(241.4)	(1.3)%
Profit for the year	64,618.1	9.7%	37,307.8	6.4%	33,816.9	1,031.3	5.7%
Attributable to							
Owners of the Company	61,501.6	9.2%	35,457.9	6.1%	32,378.9	987.5	5.4%
Non-controlling interests	3,116.5	0.5%	1,849.9	0.3%	1,438.0	43.8	0.3%
	64,618.1	9.7%	37,307.8	6.4%	33,816.9	1,031.3	5.7%
Other comprehensive income for the year, net of income tax	8,632.5	1.3%	449.4	0.1%	13,638.3	415.9	2.3%
Total comprehensive income for the year	73,250.6	11.0%	37,757.2	6.5%	47,455.2	1,447.2	8.0%
Attributable to							
Owners of the Company	69,706.9	10.4%	36,020.6	6.2%	45,203.1	1,378.5	7.6%
Non-controlling interests	3,543.7	0.6%	1,736.6	0.3%	2,252.1	68.7	0.4%
	73,250.6	11.0%	37,757.2	6.5%	47,455.2	1,447.2	8.0%

The following table sets forth, for the periods indicated, earnings per Common Share and ADS.

	Year Ended December 31,		
	2022	2023	2024
Earnings per Common Share (NT\$) ⁽¹⁾ :			
Basic	14.39	8.25	7.50
Diluted	13.81	8.04	7.20
Earnings per equivalent ADS (NT\$) ⁽¹⁾ :			
Basic	28.77	16.51	14.99
Diluted	27.61	16.08	14.40
Number of Common Shares (in million shares) ⁽²⁾ :			
Basic	4,274.7	4,295.9	4,319.0
Diluted	4,323.4	4,347.7	4,392.0
Number of equivalent ADSs (in million shares) ⁽³⁾ :			
Basic	2,137.3	2,147.9	2,159.5
Diluted	2,161.7	2,173.8	2,196.0

(1) The denominators for diluted earnings per Common Share and diluted earnings per equivalent ADS are calculated to account for the potential diluted factors, such as employees' compensation, the exercise of options, and the issuance of employee restricted stock awards.

(2) Represents the weighted average number of shares after retroactive adjustments to give effect to stock dividends. Common shares held by consolidated subsidiaries are classified as "treasury stock," and are deducted from the number of Common Shares outstanding.

(3) For the computation of earnings per ADS, the denominators were the half of the aforementioned weighted average outstanding shares (one ADS represents two ordinary shares).

The following table sets forth, for the periods indicated, segment results. Gross margin is calculated by dividing gross profit by their respective operating revenues.

	Year Ended December 31,					
	2022		2023		2024	
	NT\$	Percentage	NT\$	Percentage	NT\$	US\$ Percentage
(in millions, except percentages)						
Operating revenues:						
Packaging	303,947.5	45.3%	256,805.9	44.1%	261,731.4	7,982.0 44.0%
Testing	55,960.2	8.3%	49,879.9	8.6%	54,561.5	1,664.0 9.2%
EMS	301,966.8	45.0%	268,218.0	46.1%	271,293.3	8,273.7 45.6%
Gross profit						
Packaging	82,327.0	27.1%	52,571.0	20.5%	56,345.8	1,718.4 21.5%
Testing	21,043.5	37.6%	15,303.2	30.7%	16,195.0	493.9 29.7%
EMS	28,947.4	9.6%	23,203.1	8.7%	24,259.0	739.8 8.9%

The following table sets forth, for the periods indicated, a breakdown of our total operating costs and operating expenses, expressed as a percentage of operating revenues.

	Year Ended December 31,		
	2022	2023	2024
Operating costs			
Raw materials	52.1%	53.3%	51.5%
Labor	10.1%	10.4%	10.8%
Depreciation, amortization and rental expense	7.6%	9.0%	9.1%
Others	10.1%	11.5%	12.3%
Total operating costs	79.9%	84.2%	83.7%
Operating expenses			
Selling	1.0%	1.1%	1.3%
General and administrative	3.5%	3.3%	3.6%
Research and development	3.7%	4.4%	4.8%
Total operating expenses	8.2%	8.8%	9.7%

Year Ended December 31, 2024 Compared to Year Ended December 31, 2023

Operating Revenues. Operating revenues increased by 2.3% to NT\$595,409.6 million (US\$18,158.3 million) in 2024 from NT\$581,914.5 million in 2023, primarily due to higher sales in our packaging and testing business. Revenues from our export sales, based on the country in which the customer is headquartered, were NT\$511,422.0 million and NT\$506,134.7 million (US\$15,435.6 million) in 2023 and 2024, respectively, which contributed 87.9% and 85.0% of our total sales for those years. Packaging revenues increased 1.9% to NT\$261,731.4 million (US\$7,982.0 million) in 2024 from NT\$256,805.9 million in 2023. Testing revenues increased 9.4% to NT\$54,561.5 million (US\$1,664.0 million) in 2024 from NT\$49,879.9 million in 2023. The increase in packaging and testing revenues was primarily driven by growing demand in our leading-edge advanced packing segment. Revenues from our EMS business increased 1.1% to NT\$271,293.3 million (US\$8,273.7 million) in 2024 from NT\$268,218.0 million in 2023, primarily due to higher sales in our automotive, computing, and consumer business, partially offset by declines in our communication and industrial business.

Gross Profit. Gross profit increased by 5.6% to NT\$96,931.8 million (US\$2,956.1 million) in 2024 from NT\$91,757.1 million in 2023. Our gross profit as a percentage of operating revenues, or gross margin, was 16.3% in 2024 compared to 15.8% in 2023, which was primarily driven by foreign currency fluctuation and improved operating leverage from our packaging and testing business, offset in part by higher utility costs. Our operating costs consist primarily of raw material costs and labor costs as well as depreciation, amortization, and rental expenses. Raw material costs in 2024 were NT\$306,359.2 million (US\$9,343.1 million) compared to NT\$310,179.3 million in 2023, primarily due to changes in our product mix. As a percentage of operating revenues, raw material costs decreased to 51.5% in 2024 from 53.3% in 2023. Labor costs in 2024 were NT\$64,267.7 million (US\$1,959.9 million) compared to NT\$60,762.0 million in 2023, primarily due to increased overtime costs for our employees. As a percentage of operating revenues, labor cost increased to 10.8% in 2024 from 10.4% in 2023. Depreciation, amortization, and rental expenses in 2024 were NT\$54,253.9 million (US\$1,654.6 million) compared to NT\$52,485.4 million in 2023. As a percentage of operating revenues, depreciation, amortization, and rental expenses increased to 9.1% in 2024 from 9.0% in 2023. Our gross margin for packaging and testing businesses increased to 22.5% in 2024 from 21.8% in 2023, which was primarily attributable to higher efficiency of our factories and a favorable foreign exchange environment, offset in part by higher utility costs and increased factory supply consumption due to our shifting product mix. Our gross margin for EMS business increased to 8.9% in 2024 from 8.7% in 2023, which was primarily attributable to product mix.

Profit from Operations. Profit from operations decreased by 3.1% to NT\$40,339.0 million (US\$1,230.2 million) in 2024 compared to NT\$41,649.5 million in 2023. Our profit from operations as a percentage of operating revenues decreased to 6.8% in 2024 from 7.1% in 2023 primarily due to higher operating expenses. General and administrative expenses increased 10.9% to NT\$21,467.2 million (US\$654.7 million) in 2024 from NT\$19,360.5 million in 2023. General and administrative expenses as a percentage of our operating revenues was 3.6% in 2024 compared to 3.3% in 2023. Research and development expenses increased 13.1% to NT\$28,830.3 million (US\$879.2 million) in 2024 compared to NT\$25,499.4 million in 2023. Research and development expenses as a percentage of our operating revenues was 4.8% in 2024 compared to 4.4% in 2023. Selling and marketing expenses increased 13.7% to NT\$7,467.8 million (US\$227.7 million) in 2024 from NT\$6,569.5 million in 2023. Selling and marketing expenses as percentages of operating revenues was 1.3% in 2024 compared to 1.1% in 2023. The increase in the operating expenses was primarily due to our continued scaling up of research and development activities to meet the expanding demand for leading-edge advanced packaging services, and higher labor costs, including employee bonus and profit sharing expenses in relation to business performance, as well as costs related to share-based payment arrangements.

We had a net other operating income of NT\$1,172.6 million (US\$35.8 million) in 2024 compared to NT\$1,321.8 million in 2023. The decrease was primarily due to decreases in royalty income.

Non-Operating Income and Expenses. We had a net non-operating income of NT\$1,394.4 million (US\$42.5 million) in 2024 compared to NT\$962.3 million in 2023. This increase was primarily due to an increase in gain on valuation of financial instruments, partially offset by foreign exchange losses and an increase in finance costs.

Net Profit. Net profit, excluding non-controlling interests, decreased by 8.7% to NT\$32,378.9 million (US\$987.5 million) in 2024 compared to NT\$35,457.9 million in 2023. Our diluted earnings per ADS decreased to NT\$14.40 (US\$0.44) in 2024 compared to NT\$16.08 in 2023. Our income tax expenses increased by 49.3% to NT\$7,916.5 million (US\$241.4 million) in 2024 compared to NT\$5,304.0 million in 2023. This increase was primarily attributed to the higher additional income tax imposed on unappropriated earnings in the R.O.C.

In relation to the SPIL Acquisition, we identified the difference between investment cost and our share of net fair value of SPIL's identifiable assets and liabilities, or PPA effects of SPIL Acquisition, which caused the increase in the total of NT\$4,508.7 million and NT\$4,193.7 million (US\$127.9 million), of which an increase of NT\$3,496.3 million and NT\$3,191.8 million (US\$97.3 million) to depreciation and amortization in operating costs, NT\$1,000.0 million and NT\$1,000.0 million (US\$30.5 million) to amortization in operating expenses and NT\$12.4 million and NT\$1.9 million (US\$0.1 million) to other operating income and expenses, net in 2023 and 2024, respectively.

Year Ended December 31, 2023 Compared to Year Ended December 31, 2022

For a detailed description of the comparison of our operating results for the year ended December 31, 2023 to the year ended December 31, 2022, please refer to “Item 5. Operating and Financial Review and Prospects—Operating Results and Trend Information—Results of Operations—Year Ended December 31, 2023 Compared to Year Ended December 31, 2022” of our annual report on Form 20-F filed with the Securities and Exchange Commission on April 3, 2024.

Quarterly Operating Revenues, Gross Profit and Gross Margin

The following table sets forth our unaudited consolidated operating revenues, gross profit, and gross margin for the quarterly periods indicated. The unaudited quarterly results reflect all adjustments, consisting of normal recurring adjustments that, in the opinion of management, are necessary for a fair presentation of the amounts, on a basis consistent with the audited consolidated financial statements included elsewhere in this annual report. You should read the following table in conjunction with the audited consolidated financial statements and related notes included elsewhere in this annual report.

Our operating revenues, gross profit, and gross margin for any quarter are not necessarily indicative of the results for any future period. Our unaudited quarterly operating revenues, gross profit and gross margin may fluctuate significantly.

	Quarter Ended,							
	Mar. 31, 2023	Jun. 30, 2023	Sep. 30, 2023	Dec. 31, 2023	Mar. 31, 2024	Jun. 30, 2024	Sep. 30, 2024	Dec. 31, 2024
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
	(in millions, except percentages)							
Operating Revenues								
Packaging	60,029.5	61,845.7	68,709.3	66,221.4	59,458.4	62,834.2	69,154.2	70,284.6
Testing	11,407.1	12,291.6	12,818.6	13,362.6	12,101.8	12,622.9	14,123.9	15,712.9
EMS	57,730.9	60,384.1	70,947.6	79,155.4	59,326.1	62,852.5	74,871.3	74,243.4
Others	1,723.6	1,753.9	1,691.3	1,841.9	1,916.6	1,928.4	1,955.7	2,022.7
Total	130,891.1	136,275.3	154,166.8	160,581.3	132,802.9	140,238.0	160,105.1	162,263.6
Gross Profit (Loss)								
Packaging	11,278.2	12,147.3	14,439.9	14,705.6	12,142.0	13,528.9	15,329.1	15,345.8
Testing	3,168.5	3,782.6	3,934.3	4,417.8	3,221.4	3,436.9	4,348.2	5,188.5
EMS	4,570.0	5,583.9	6,430.1	6,619.1	5,397.8	5,969.5	6,753.5	6,138.2
Others	322.7	227.0	111.3	18.8	60.0	118.9	(5.0)	(41.9)
Total	19,339.4	21,740.8	24,915.6	25,761.3	20,821.2	23,054.2	26,425.8	26,630.6
Gross Profit (%)								
Packaging	18.8%	19.6%	21.0%	22.2%	20.4%	21.5%	22.2%	21.8%
Testing	27.8%	30.8%	30.7%	33.1%	26.6%	27.2%	30.8%	33.0%
EMS	7.9%	9.2%	9.1%	8.4%	9.1%	9.5%	9.0%	8.3%
Overall	14.8%	16.0%	16.2%	16.0%	15.7%	16.4%	16.5%	16.4%

Our results of operations are affected by seasonality. In general, our first quarter operating revenues have historically decreased over the preceding fourth quarter, primarily due to the combined effects of holidays in the U.S., Taiwan, and elsewhere in Asia. Moreover, the increase or decrease in operating revenues of a particular quarter as compared with the immediately preceding quarter varies significantly. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Our operating results are subject to significant fluctuations, which could adversely affect the market value of our Common Shares and ADSs.”

Exchange Rate Fluctuations

Fluctuations in the exchange rate between NT dollars and U.S. dollars will affect the U.S. dollar equivalent of the NT dollar price of our Common Shares on the TWSE and, as a result, will likely affect the market price of the ADSs. Fluctuations will also affect the U.S. dollar conversion by the depositary under our ADS deposit agreement referred to below of cash dividends paid in NT dollars on, and the NT dollar proceeds received by, the depositary from any sale of Common Shares represented by ADSs, in each case, according to the terms of the deposit agreement dated April 30, 2018, Citibank N.A. as depositary, and the holders and beneficial owners from time to time of the ADSs, which we refer to as the deposit agreement.

For quantitative and qualitative disclosure of our exposure to foreign currency exchange rate risk, see “Item 11. Quantitative and Qualitative Disclosures about Market Risk—Market Risk—Foreign Currency Exchange Rate Risk.”

Taxation

We have filed a consolidated corporate income tax return and a consolidated undistributed earnings tax for all qualified domestic subsidiary companies with the tax authority in accordance with the Article 45 of the R.O.C. Business Mergers and Acquisitions Act. The corporate income tax rate and tax rate on unappropriated earnings in the R.O.C. are 20% and 5%, respectively.

We were entitled to tax credits under the R.O.C. Statute for Industrial Innovation Act for qualifying research and development expenses related to innovation activities, but the amount of tax credit is limited to only up to 15% of the total research and development expenses for the year, subject to a cap of 30% of the income tax payable for the year in which the expenses were incurred. Moreover, we are eligible for tax credits under amendment to the Article 10-1 of the R.O.C. Statute for investments in smart machinery, 5G mobile networks, and cyber security products/services, with expenditure of more than NT\$1 million and under NT\$1 billion in the same taxable year. We can select to claim the tax credit within three years using a 3% tax credit rate or within the current year using a 5% tax credit rate, subject to a cap of 30% of the income tax payable for the year in which the expenses were incurred. In addition, effective from January 1, 2023, we are eligible for tax credits under amendment to the Article 10-2 of the R.O.C. Statute for qualifying research and development expenses related to innovation activities and possess a leading position in global supply chain, but the amount of tax credit is limited to up to 25% of the total qualifying research and development expenses, and up to 5% on acquisition of machinery and equipment used in advanced manufacturing processes, both of which are subjected to a cap of 30% of the income tax payable for the fiscal year. The total amount of tax credits shall not exceed 50% of the income tax payable for the fiscal year. We apply for investment credits to increase effects of tax benefits.

The R.O.C. government enacted the alternative minimum tax (the “AMT”) Act, which is a supplemental income tax which is taxable if the amount of regular income tax calculated pursuant to the R.O.C. Income Tax Act and relevant laws and regulations is below the amount of basic tax prescribed under the R.O.C. AMT Act. The taxable income for calculating the AMT includes most sources of income that are exempted from income tax under various legislations such as investment tax credits. However, there are grandfathered treatments for the tax holidays approved by the tax authority before the AMT Act took effect. The AMT rate for us is generally 12%.

Beginning with the undistributed earnings with the addition of the income tax declaration from for-profit enterprises of 2018, within three years of the year following the occurrence of the earnings, the earnings are used to construct or purchase buildings, software or hardware equipment, or technology for use in production or operation as needed up to a certain amount. The investment amount calculated from the undistributed earnings for the year in accordance with the provisions of Article 66-9 of the R.O.C. Income Tax Act may be listed as a deduction item. We have only deducted the amount of capital expenditure from the unappropriated earnings that has been reinvested when calculating the tax on unappropriated earnings for tax reporting purposes. However, we did not deduct such investment amounts from the undistributed earnings in calculation of income tax on unappropriated earnings in 2023 and 2024 for financial reporting purposes.

In addition, we are subject to the R.O.C. Controlled Foreign Company (“CFC”) rules, which were enacted in 2016 and took effect on January 1, 2023, pursuant to which certain profits retained at a CFC located in a low-tax jurisdiction and without commercial substance would be taxed in advance at the Taiwan parent company level, subject to certain exemptions.

Our non-R.O.C. subsidiaries are subject to taxation in their respective jurisdiction. Some of our P.R.C. subsidiaries qualified as high technology enterprises were entitled to a reduced income tax rate of 15% and were eligible to deduct certain research and development expenses from their taxable income.

In 2024, our effective income tax rate increased to 18.97% from 12.45% in 2023 primarily due to the reversal of additional income tax imposed on unappropriated earnings in the R.O.C in 2023. We believe that our future estimated taxable income will be sufficient to utilize our deferred tax assets recorded as of December 31, 2024.

LIQUIDITY AND CAPITAL RESOURCES

As of December 31, 2024, our primary source of liquidity was NT\$76,492.8 million (US\$2,332.8 million) of cash and cash equivalents and NT\$8,390.6 million (US\$255.9 million) of financial assets – current, consisting mainly of quoted shares, open-end mutual funds, convertible notes, swap contracts, and forward exchange contracts. As of December 31, 2024, we had total unused credit lines of NT\$375,733.9 million (US\$11,458.8 million). As of December 31, 2024, we had working capital of NT\$40,861.4 million (US\$1,246.2 million).

As of December 31, 2024, we had total debts of NT\$213,868.2 million (US\$6,522.4 million), of which NT\$47,444.9 million (US\$1,446.9 million) were short-term debts, NT\$18,882.9 million (US\$575.9 million) were current portions of long-term debts, NT\$7,812.0 million (US\$238.3 million) were lease liabilities (including current and non-current), and NT\$139,728.4 million (US\$4,261.3 million) were long-term debts. In 2024, the maximum amount of our short-term and current portion of long-term debts was NT\$87,598.6 million (US\$2,671.5 million) and the average amount of our short-term and current portion of long-term debts was NT\$80,250.6 million (US\$2,447.4 million). The fluctuation was primarily because our working capital balance periodically fluctuated during 2024. The annual interest rate for short-term bank loans and current hedging financial liabilities ranged from 1.75% to 6.96% during the year ended December 31, 2024. Our short-term debts consist of bank loans and hedging financial liabilities. Our short-term bank loans are primarily revolving facilities with a term of one year, each of which may be extended on an annual basis with lender consent. Our long-term debts consist of bonds payable and bank loans. Our long-term and current portion of bonds payable and bank loans typically carried variable annual interest rates which ranged from 0.85% to 5.33% in the year ended December 31, 2024. For the maturity information and interest rates by currencies, see “Item 11—Quantitative and Qualitative Disclosures about Market Risk—Market Risk—Interest Rate Risk.”

We operate in a capital-intensive industry. Serving our current and future customers may require that we incur additional operating expenses and make significant investments in equipment and facilities, which may increase our exposure to payment obligations. We may consider making substantial investments to expand our manufacturing capabilities and technology advancements, which may lead to an increase in our funding requirements.

We have historically been able to satisfy our working capital needs from our cash flow from operations. We have also historically funded our capacity expansion from internally generated cash and, to the extent necessary, the issuance of equity securities and borrowings. To the extent we do not generate sufficient cash flow from our operations to meet our cash requirements, we will have to rely on external financing. If adequate funds are not available on satisfactory terms, we may be forced to curtail our expansion plans. Moreover, our ability to meet our working capital needs from cash flow from operations will be affected by the demand for our packaging services, testing services, and EMS, which in turn may be affected by several factors. Many of these factors are outside of our control, such as economic downturns and declines in the prices of our services or products caused by a downturn in the industry. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Our operating results are subject to significant fluctuations, which could adversely affect the market value of our Common Shares and ADSs.”

We have provided a portion of our assets, with a carrying value of NT\$22,556.3 million (US\$687.9 million) as of December 31, 2024, as collateral to secure our obligations under our bank borrowings, tariff guarantees of imported raw materials, or collateral.

Cash Flows

	Year Ended December 31,			
	2022	2023	2024	
	NT\$	NT\$ (in millions)	NT\$	US\$
Capital expenditures	(72,639.9)	(54,158.2)	(79,521.9)	(2,425.2)
Net cash flows generated from (used in):				
Operating activities	111,001.0	114,421.8	90,787.8	2,768.8
Investing activities	(73,951.9)	(55,122.0)	(83,908.7)	(2,559.0)
Financing activities	(62,458.8)	(49,101.0)	(7,271.2)	(221.8)

Net cash generated from operating activities amounted to NT\$90,787.8 million (US\$2,768.8 million) in 2024, primarily from (i) our operating performance with a profit before income tax of NT\$41,733.4 million (US\$1,272.7 million), (ii) our non-cash items of depreciation and amortization of NT\$59,815.2 million (US\$1,824.2 million), and (iii) net changes in working capital of NT\$2,290.9 million (US\$69.9 million), partially offset by the income tax payment of NT\$9,072.6 million (US\$276.7 million) and interest payment of NT\$6,419.1 million (US\$195.8 million). Net cash generated by operating activities amounted to NT\$114,421.8 million in 2023, primarily from (i) our operating performance with profit before income tax of NT\$42,611.8 million, (ii) our non-cash items of depreciation and amortization of NT\$58,101.9 million, and (iii) the net changes in inventories of NT\$25,401.8 million and trade receivables of NT\$15,868.8 million, partially offset by (i) the net changes in trade and other payables of NT\$17,319.1 million, and (ii) the income tax payment of NT\$15,474.6 million. The decrease in net cash generated from operating activities in 2024 compared to 2023 was primarily due to cash outflows resulting from an increase in trade receivables, partially offset by cash inflows resulting from an increase in trade and other payables and decrease in income tax paid.

Net cash used in investing activities amounted to NT\$83,908.7 million (US\$2,559.0 million) in 2024, primarily due to our net payment for property, plant and equipment of NT\$78,613.9 million (US\$2,397.5 million). Net cash used in investing activities amounted to NT\$55,122.0 million in 2023, primarily due to our net payment for property, plant and equipment of NT\$53,682.9 million. The increase in net cash used in investing activities in 2024 compared to 2023 was primarily due to increased payments relating to property, plant and equipment. Payments for property, plant and equipment can fluctuate based on the timing of the purchase, receipt and acceptance of the equipment.

Net cash used in financing activities amounted to NT\$7,271.2 million (US\$221.8 million) in 2024. This amount comprises net proceeds from short-term and long-term bank loans, bills payable, and bonds payable in the amount of NT\$16,486.8 million (US\$502.8 million), partially offset by payments of cash dividends of the NT\$22,459.4 million (US\$684.9 million) in 2024. Net cash used in financing activities amounted to NT\$49,101.0 million in 2023. This amount comprises net payments of short-term and long-term bank loans, bills payable, and bonds payable in the amount of NT\$10,817.4 million and the payments of cash dividends in the amount of NT\$37,840.6 million. The decrease in net cash used in financing activities in 2024 compared to 2023 was primarily due to increases in net proceeds from short-term and long-term debts and a decrease in cash dividends paid.

Contractual Obligations

The following table sets forth the maturity of our contractual obligations as of December 31, 2024.

	Total	Payments due to period			
		Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years
			(in NT\$ millions)		
Short-term debts ⁽¹⁾	47,829.1	47,829.1	-	-	-
Long-term debts ⁽²⁾	170,245.1	23,688.2	134,504.3	4,157.8	7,894.8
Lease obligations ⁽³⁾	9,403.3	1,154.7	1,590.8	1,085.8	5,572.0
Capital purchase obligations ⁽⁴⁾⁽⁵⁾	66,086.5	66,086.5	-	-	-
Other purchase obligations	117.1	29.3	58.5	29.3	-
Total ⁽⁶⁾⁽⁷⁾	293,681.1	138,787.8	136,153.6	5,272.9	13,466.8

(1) Short-term borrowings, including interest payments.

(2) Long-term and current portion of borrowings, and bonds payable (before addition of unamortized premiums), including interest payments.

(3) Represents our commitments under leases liabilities and imputed interest which are mainly from land and buildings and improvements. See Note 16 to our consolidated financial statements included in this annual report.

(4) Represents material commitments to purchase machinery and equipment of approximately NT\$68,028.6 million (US\$2,074.7 million), of which NT\$1,942.1 million (US\$59.2 million) had been paid as of December 31, 2024.

(5) Excludes material commitments for construction of approximately NT\$50,234.6 million (US\$1,532.0 million), of which NT\$3,948.8 million (US\$120.4 million) had been paid as of December 31, 2024, since the schedule of payments is difficult to determine.

(6) Excludes our unfunded defined benefit obligation since the schedule of payments is difficult to determine. Under defined benefit pension plans, we made pension contributions of approximately NT\$646.7 million (US\$19.7 million) in 2024, and we estimate that we will contribute approximately NT\$414.6 million (US\$12.6 million) in 2025. See note 23 to our consolidated financial statements included in this annual report.

(7) Excludes uncertain tax liabilities. We recognized additional taxes payable of NT\$323.3 million (US\$9.9 million) and accrued interest and penalties of NT\$21.2 million (US\$0.6 million) related to uncertain tax positions as of or for the year ended December 31, 2024. Because we were unable to make a reasonable estimate of the timing of the tax audits, such balances were not included in the table.

As of December 31, 2024, we were not in breach of any of the financial covenants under our existing loan agreements. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Restrictive covenants and broad default provisions in our existing debt agreements may materially restrict our operations as well as adversely affect our liquidity, financial condition, and results of operations.”

As of December 31, 2024, we had no contingent obligations, which normally consist of guarantees provided by us to our subsidiaries.

Capital Expenditures

Our capital expenditures for the years ended December 31, 2022, 2023, and 2024 for property, plant, and equipment were NT\$75,800.6 million, NT\$48,758.7 million, and NT\$96,207.5 million (US\$2,934.1 million), respectively. We are adaptable to changing customer needs and will be able to expand our footprint to other countries and regions as needed in the future. Any future expansion of our operating activities could result in additional capital expenditures. We anticipate our capital expenditures in 2025 will be financed through existing cash, expected cash flow from operations, and existing credit lines under our loan facilities and will consist of, among other things, additional machinery and equipment procurements for our capacity expansions. See “Item 5. Operating and Financial Review and Prospects—Liquidity and Capital Resources” for more information.

We have made, and expect to continue to make, substantial capital expenditures in connection with the expansion of our production capacity. The table below sets forth our principal capital expenditures incurred for the years indicated.

	Year Ended December 31,		
	2022	2023	2024
	NT\$	NT\$	NT\$
	(in millions)		
Land and land improvements	1,453.8	424.1	3,931.9
Building and improvements	24,241.9	19,948.2	31,982.7
Machinery and equipment	50,104.9	28,386.4	60,292.9
Total	75,800.6	48,758.7	96,207.5

We had commitments for capital expenditures of approximately NT\$118,263.2 million (US\$3,606.7 million), of which NT\$5,890.9 million (US\$179.6 million) had been prepaid as of December 31, 2024, primarily in connection with the expansion of our operations. We may adjust our capital expenditures based on market conditions, the progress of our expansion plans, and cash flow from operations. Due to the rapid changes in technology in the semiconductor industry, we frequently need to invest more in land, buildings, factories as well as machinery and equipment, which may require us to raise additional capital. As we are responsive to changing customer needs and could expand our footprint to other countries and regions if needed in the future, we cannot ensure that we will be able to raise additional capital should it become necessary on terms acceptable to us, or at all. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Business—If we are unable to obtain sufficient funding in a timely manner or on acceptable terms, our results of operations and financial conditions may be materially and adversely affected.”

We believe that our cash and cash equivalents, short-term investments, expected cash flow from operations, and existing credit lines under our loan facilities will be sufficient to meet our capital expenditures, purchase commitments, working capital, cash obligations under our existing debts and lease arrangements, and other business requirements associated with existing operations, over the next twelve months and beyond. We currently hold cash primarily in U.S. dollars, RMB, NT dollars, Korean Won, Japanese yen, and EUR. As of December 31, 2024, we had contractual obligations of NT\$274,941.4 million (US\$8,384.9 million) due in the next three years. We currently expect to meet our payment obligations through the expected cash flow from operations, long-term borrowings, and the issuance of additional equity. We will continue to evaluate our capital structure and periodically may decide to increase or decrease our financial leverage through equity offerings or borrowings. The issuance of additional equity securities may result in additional dilution to our shareholders.

We regularly evaluate possible investments, acquisitions, or divestments and may, if a suitable opportunity arises, make an investment, acquisition, or divestment.

Our exposure to financial market risks relates primarily to changes in foreign currency exchange rates that arise from ordinary business operations. To mitigate these risks, we utilize derivative instruments. All derivative transactions entered into by us were designated as either hedging or trading. We have sometimes entered into interest rate swap transactions to hedge our interest rate exposure. In addition, we have sometimes entered into forward exchange contracts, swap contracts, cross-currency swap contracts, and foreign currency options contracts to hedge our existing assets and liabilities denominated in foreign currencies. See “Item 11. Quantitative and Qualitative Disclosures about Market Risk” and Notes 7, 8 and 34 to our consolidated financial statements included in this annual report.

RESEARCH AND DEVELOPMENT

For 2023 and 2024, our research and development expenditures totaled approximately NT\$25,499.4 million and NT\$28,830.3 million (US\$879.2 million), respectively. These expenditures represented approximately 4.4% and 4.8% of operating revenues in 2023 and 2024, respectively. As of December 31, 2024, we had a research and development team of 12,715 employees. We cultivate and maintain a research and development engineering team that continuously surveys and adapts to the latest trends in technology. Our research and development activities are primarily directed toward optimizing relevant technologies in key components, manufacturing processes, and product development. Our research and development objectives are to enhance the performance of our products and drive greater business growth. To incentivize innovation and encourage our employees to engage in research and development, we offer cash rewards to employees that contribute significantly to our research efforts.

Packaging

We centralize our research and development efforts in packaging technology in our Kaohsiung and Taichung facilities in Taiwan. After initial phases of development, we conduct pilot runs in one of our facilities before new technologies or processes are implemented commercially at other sites. Facilities with special product expertise, such as ASE Korea, also conduct research and development of these specialized products and technologies at their sites. One of the areas of emphasis for our research and development efforts is improving the efficiency and technology of our packaging processes, and these efforts are expected to continue. We are also investing significant research and development efforts into the development and adoption of innovative technology. We work closely with manufacturers of our packaging equipment and materials in designing and developing the equipment and materials used in our production process. We also collaborate with our significant customers to jointly develop new product and process technologies.

In addition to investing in the development of more advanced packaging technology and improving production efficiency, some portion of our research and development efforts is focused on the development of IC substrate. Substrate is the principal raw material for BGA packages. Development and production of IC substrates involve complex technology. We are currently working closely with certain first-tier substrate suppliers in Asia, primarily including those located in Japan, Taiwan, Korea, and the P.R.C. We believe that our successful cooperation with substrate suppliers to enhance overall substrate production capability and meet future package requirements has enabled us to capture an increasingly important value-added component of the packaging process and helped ensure a stable and cost-effective supply of substrates for our BGA packaging operations and shortened time to market.

Testing

Our research and development efforts in testing have focused primarily on developing advanced testing solutions for mmWave, SiP, silicon photonics, and optical sensor modules; characterization of semiconductors, layout design and electrical simulation for high-frequency test board and developing software of parametric test data analysis. With the maturity of advanced processes, reliability becomes increasingly significant. We have developed a high-power cooling system of “burn in” to improve the reliability of products for customers. We also develop WiFi6e low-cost test technology, optical communication, and millimeter wave test technology to meet the development needs of today’s wireless communication technology. Besides working closely with our customers on the leading-edge test technologies, our research and development operations also include an equipment development group, which currently designs testing hardware and software for specific semiconductors to offer our customers cost-effective test solutions.

EMS

To further enhance the quality of our services and products and increase competitiveness, we focus on developing diversified and innovative products. By leveraging our proprietary research and development expertise, we are able to optimize our product design, engineering, and manufacturing capabilities to provide our customers with high-performance and cost-effective products and services. During the process of designing, as well as developing, the technology for our software and hardware, our research and development team also dedicates itself to discovering new information and applying it to create new, advanced, and improved products, processes, methodology, and services. We are currently investing in the development of products used in EMS in relation to computing and peripherals, communications, consumer products, automotive, industrial, and server applications.

TREND INFORMATION

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments, or events for the period from January 1, 2024 to December 31, 2024 that are reasonably likely to have a material effect on our operating revenues, income, profitability, liquidity or capital resources, or that caused the disclosed financial information to not be indicative of future operating results or financial conditions.

SAFE HARBOR

Please see the section entitled “Special Note Regarding Forward-Looking Statements.”

Item 6. Directors, Senior Management and Employees

DIRECTORS AND SENIOR MANAGEMENT

Directors

Our board of directors is elected by our shareholders in a shareholders’ meeting at which a quorum, consisting of a majority of all issued and outstanding Common Shares, not including treasury stocks and Common Shares held by our subsidiaries, is present. The chairman is elected by the board from among the directors. Our board of directors, including three independent directors, is responsible for the management of our business.

We have 9 directors seats, each serving a three-year term. The current board of directors was elected in an annual general shareholders’ meeting on June 26, 2024 and began serving on June 27, 2024. Directors may serve any number of consecutive terms and may be removed from office at any time by a resolution adopted at a meeting of shareholders. Normally, all board members are elected at the same meeting of shareholders, except where the posts of one-third or more of the directors are vacant, at which time an extraordinary general shareholders’ meeting shall be convened to elect directors to fill the vacancies. We and our subsidiaries do not have service contracts with our directors that provide for benefits upon termination of employment.

Audit Committee

Our audit committee currently consists of Shen-Fu Yu, the chairman of our audit committee, and Mei-Yueh Ho and Wen-Chyi Ong, who are independent under Rule 10A-3 and the R.O.C. Securities and Exchange Act and are financially literate with accounting or related financial management expertise. Our audit committee is entrusted with the same duties and responsibilities as set out in Rule 10A-3(b) under the Exchange Act. Pursuant to the Article 14-4 of the R.O.C. Securities and Exchange Act, our audit committee was established on June 22, 2018 in lieu of supervisors to exercise the powers and duties of supervisors stipulated in the R.O.C. Company Law and other applicable laws and regulations. Our audit committee meets at least once every quarter but may meet at any time deemed necessary. Our board of directors has adopted a committee charter for the audit committee. Our audit committee’s responsibilities and powers include, but are not limited to, assistance with the board of directors in fulfilling its quality and integrity in supervising the implementation of relevant accounting, internal auditing, financial reporting procedures, and financial controls. In addition, in order to enhance corporate governance, the audit committee also takes responsibility for overseeing the policy and procedures for complaints and concerns regarding accounting, internal accounting controls, auditing matters, violations of Code of Business Conduct and Ethics, or unethical conduct.

Compensation Committee

Our compensation committee currently consists of Shen-Fu Yu, the chairman of our compensation committee, Wen-Chyi Ong, and Hsiao-Ying Ku. Our board of directors established a compensation committee to satisfy the requirements under the R.O.C. Securities and Exchange Act. As stipulated by relevant R.O.C. regulations, a majority of the committee members shall be independent directors, and the committee members shall elect an independent director to serve as meeting chairman and convener, who will represent the committee externally. We do not assess the independence of our compensation committee member(s) under the independence requirements of the NYSE listing standards but adopt the independence standard as promulgated under the R.O.C. Regulations Governing the Appointment and Exercise of Powers by the Remuneration Committee of a Company Whose Stock Is Listed on the TWSE or the Taipei Exchange. Our compensation committee meets at least twice a year. Our board of directors has adopted a compensation committee charter for our compensation committee. The compensation committee shall exercise the due care of a good administrator and faithfully perform the duties listed below, and shall submit its recommendations to the board of directors for discussion. (i) Prescribe and periodically review the performance review and remuneration policy, system, standards, and structure for directors and managerial officers. (ii) Periodically evaluate and prescribe the remuneration of directors managerial officers. (iii) The compensation committee shall exercise the care of a good administrator to examine remuneration system for directors, supervisors and managerial officers adopted by the board of directors of a subsidiary and the reference data related to the remuneration of directors, supervisors, and managerial officers submitted by the subsidiary and submit its opinion to the board of directors. “Subsidiary” as used in the forementioned sentence is confined to the enterprises that the Company holds shares directly and actually engaged in production and manufacturing.

Risk Management Committee

Our risk management committee currently consists of Shen-Fu Yu, Mei-Yueh Ho, the chairman of our risk management committee, and Du-Tsuen Uang. In December 2019, our board of directors passed a resolution to establish a risk management committee, which has no less than half of its membership comprised of independent directors, and approved its charter to enable us to discover and preempt internal and external operational risks. The risk management committee is responsible for overseeing overall risk management, implementing the decisions of the board of directors in connection to risk management, coordinating and promoting interdepartmental risk management plans, supervising and managing overall risk control and remedial mechanisms, and auditing and integrating each risk control report. Our risk management committee convenes regular meetings at least twice a year and files an annual report to our board of directors to inform the board about the status of risk management implementation and share insights for optimization. In July 2023, our risk management system passed BSI verification according to ISO 31000 and received the Risk Management Framework Compliance statement of conformity.

Corporate Sustainability Committee (the “CSC”)

Our corporate sustainability committee currently consists of chairperson Jason C.S. Chang, Tien Wu, Jeffrey Chen, Andrew Tang, Shen-Fu Yu, Mei-Yueh Ho, and Wen-Chyi Ong. Our CSC was established since 2018 to serve as the highest level of authority in the planning and supervision of sustainability-related strategies. In November 2024, upon resolution of the board of directors, the committee was formalized as a functional committee, and the CSC charter was approved, stipulating that all CSC members shall be appointed from among members of the board of directors, with the chairman of the board serving as the chairperson of the CSC. The CSC is responsible for formulating, promoting, and enhancing our sustainable development policies, annual plans, and strategies, as well as overseeing implementation status, results of sustainable development tasks, sustainability information disclosures, and other sustainability-related tasks. The CSC reports its progress to our board of directors regularly. We also request major subsidiaries to establish group level sustainability committees in charge of their sustainability management to report to the CSC.

The following table sets forth information regarding all of our directors as of January 31, 2025. In accordance with R.O.C. law, each of our directors is elected either in his or her capacity as an individual or as an individual representative of a corporation or government. Persons designated to represent corporate or government shareholders as directors are nominated by such shareholders at the shareholders' meeting and may be replaced as representatives by such shareholders at will. Of the current directors, five represent ASE Enterprises Limited. The remaining directors serve in their capacity as individuals.

Name	Position	Director Since	Age	Other Significant Positions Held Outside of ASEH
Jason C.S. Chang ⁽¹⁾⁽²⁾	Director and Chairman	2018	80	None
Richard H.P. Chang ⁽¹⁾⁽²⁾	Director, Vice Chairman and President	2018	78	Chairman, Sino Horizon Holdings Ltd.
Tien Wu ⁽²⁾	Director and Chief Operating Officer	2018	67	None
Jeffrey Chen ⁽²⁾	Director; Chairman, Universal Scientific Industrial (Shanghai) Co., Ltd.	2018	60	None
Rutherford Chang ⁽³⁾⁽⁵⁾	Director; General Manager, China Region of ASE Inc.	2018	45	None
Andrew Tang ⁽²⁾⁽⁴⁾	Director; Chief Procurement Officer; Vice Chairman, ASE Inc.	2024	49	None
Shen-Fu Yu	Independent Director and Member, Audit Committee, Compensation Committee, Risk Management Committee, and Corporate Sustainability Committee	2018	80	Independent Director, TaiGen Biopharmaceuticals Holdings Ltd.
Mei-Yueh Ho	Independent Director and Member, Audit Committee, Risk Management Committee, and Corporate Sustainability Committee	2018	74	Independent Director, Center Laboratories, Inc., Onward Therapeutics SA and Acer Inc.; Director, KINPO Electronics Inc.
Wen-Chyi Ong	Independent Director and Member, Audit Committee, Compensation Committee, and Corporate Sustainability Committee	2021	65	Independent Director, Kenda Rubber Industrial

(1) Jason C.S. Chang and Richard H.P. Chang are brothers.

(2) Representative of ASE Enterprises Limited, a company organized under the laws of Hong Kong, which held 15.49% of our total outstanding shares as of January 31, 2025. All of the outstanding shares of ASE Enterprises Limited are held through intermediary holding companies and under a revocable trust established under the laws of the Commonwealth of the Bahamas for the benefit of our Chairman, Jason C.S. Chang, and his family as of February 4, 2025.

(3) Rutherford Chang is the son of Jason C.S. Chang.

(4) Andrew Tang is the son-in-law of Jason C.S. Chang.

(5) On February 7, 2025, ASE Technology Holding announced the passing of Mr. Rutherford Chang.

Audit Committee

For a discussion of our audit committee, see “—Directors and Senior Management—Directors.”

Executive Officers

The following table sets forth information regarding all of our executive officers as of January 31, 2025.

Name	Position	Years with the Company	Age
Jason C.S. Chang	Chairman	40	80
Richard H.P. Chang	Vice Chairman and President	40	78
Tien Wu	Chief Operating Officer	24	67
Joseph Tung	Chief Financial Officer	30	66
Du-Tsuen Uang	Chief Administration Officer	22	65
Andrew Tang	Chief Procurement Officer; Vice Chairman, ASE Inc.	10	49
Raymond Lo	General Manager, ASE Test Taiwan and Kaohsiung packaging facility	38	70
Tien-Szu Chen	General Manager, ASE Inc. Chung-Li branch	36	63
Rutherford Chang	General Manager, China Region of ASE Inc.	19	45
Chung Lin	General Manager, ASE Shanghai and ASE Electronics	20	61
Gichol Lee	General Manager, ASE Korea	9	62
Chih-Hsiao Chung	General Manager, ASE Japan and Wuxi Tongzhi	25	60
Kwai Mun Lee	President, ASE South-East Asia operations	26	62
Yean Peng Chen	General Manager, ASE Singapore Pte. Ltd.	26	53
Kelvin Liu Fook Lin	General Manager, ASE Malaysia	7	48
Kenneth Hsiang	Chief Executive Officer, ISE Labs and ISE Shanghai	25	54
Chi-Wen Tsai	Chairman and President, SPIL	40	77
Kevin Yu	General Manager, SZ	29	51
Jeffrey Chen	Chairman, Universal Scientific Industrial (Shanghai) Co., Ltd.	30	60
Chen-Yen Wei	Chairman, Universal Scientific Industrial Co., Ltd.; President, Universal Scientific Industrial (Shanghai) Co., Ltd.; General Manager, Universal Global Scientific Industrial Co., Ltd.	45	70
Jing Cao	General Manager, Universal Global Technology (Shanghai) Co., Ltd.	9	65
Ta-I Lin	General Manager, Universal Global Technology (Kunshan) Co. Ltd.	37	61
Yueh-Ming Lin	General Manager, Universal Global Technology (Huizhou) Co., Ltd.	29	59
Hui-Min Liu	General Manager, UNIVERSAL SCIENTIFIC INDUSTRIAL VIETNAM COMPANY LIMITED	21	52
Matthew Richard Behringer	General Manager, Universal Scientific Industrial De Mexico S.A. De C.V.	2	51
Nicolas Denis	Chief Executive Officer, Financière AFG	4	53
Ying Pin Wu	General Manager, Asteelflash Suzhou Co., Ltd.	16	58

Biographies of Directors and Executive Officers

Jason C.S. Chang has served as chairman and principal executive officer of ASEH since its founding in April 2018. He is also chairman of ASE Inc and a member of the corporate sustainability committee of ASEH. Dr. Chang holds a bachelor's degree in Electrical Engineering from National Taiwan University in Taiwan and a master's degree from Illinois Institute of Technology. Dr. Chang received an Honorary Degree of Doctor of Engineering from National Sun Yat-sen University in Taiwan in November 2018 and an Honorary Degree of Doctor of Engineering from National Cheng Kung University in Taiwan in July 2022. He is the brother of Richard H.P. Chang, our vice chairman and president.

Richard H.P. Chang has served as vice chairman and president of ASEH since its founding in April 2018. Mr. Chang holds a bachelor's degree in Industrial Engineering from Chung Yuan Christian University in Taiwan. He is the brother of Jason C.S. Chang, our chairman.

Tien Wu has served as a director and chief operating officer of ASEH since its founding in April 2018. He is also a member of the corporate sustainability committee of ASEH. Dr. Wu is currently the chief executive officer of ASE Inc. Prior to joining ASE Inc. in March 2000, Dr. Wu had worked at IBM. Dr. Wu holds a bachelor's degree in Civil Engineering from National Taiwan University in Taiwan, and a master's and a doctorate degree in Mechanical Engineering and Applied Mechanics from the University of Pennsylvania. In 2015, Dr. Wu received an Honorary Degree of Doctor of Science from Binghamton University in New York. In 2024, Dr. Wu was elected to the United States National Academy of Engineering for work in sustainable electronics manufacturing and advancements in the high-volume production of semiconductor packaging.

Jeffrey Chen has served as a director of ASEH since its founding in April 2018 and he has also served as a director of ASE Inc. since June 2003. He is also a member of the corporate sustainability committee of ASEH. Mr. Chen has served as chairman of Universal Scientific Industrial (Shanghai) Co., Ltd. since June 2018. Prior to joining ASE Inc., he worked in the corporate banking department of Citibank, N.A. in Taipei and as a vice president of corporate finance at Bankers Trust in Taipei. Mr. Chen holds a bachelor's degree in Finance and Economics from Simon Fraser University in Vancouver, Canada and a master's degree in Business Administration from the University of British Columbia in Canada.

Rutherford Chang has served as a director of ASEH since its founding in April 2018. He has also served as a director of ASE Inc. since June 2009 and general manager of China Region of ASE Inc. since June 2010. Mr. Chang holds a bachelor's degree in Psychology from Wesleyan University in Connecticut. He is the son of Jason C.S. Chang, our chairman. On February 7, 2025, ASEH announced the passing of Mr. Rutherford Chang.

Andrew Tang has served as a director of ASEH since June 2024 and holds the positions of chief procurement officer for ASEH since September 2023 and vice-chairman and deputy chief executive officer for ASE Inc. He is also a member of the corporate sustainability committee of ASEH. Mr. Tang is also a director of ASE Inc., ASE Cultural & Education Foundation, and ASE Environmental Protection and Sustainability Foundation. Prior to joining ASE in August 2014, Mr. Tang worked at privately-held and publicly-held investment firms, including Morgan Stanley in New York. Mr. Tang holds a bachelor's degree in Mathematics and Economics from Yale University. Mr. Tang is the son-in-law of Mr. Jason C.S. Chang, our chairman.

Shen-Fu Yu has served as an independent director of ASEH since June 2018. Mr. Yu is also a member of the audit committee, compensation committee, risk management committee, and corporate sustainability committee of ASEH. He is an independent director, and a member of the audit committee and compensation committee of TaiGen Biopharmaceuticals Holdings Ltd. He worked at the Deloitte & Touche accounting firm as a consultant from June 2003 to November 2006. Mr. Yu holds a bachelor's degree in Accounting from National Taiwan University in Taiwan and a master's degree in Accounting from National Chengchi University in Taiwan.

Mei-Yueh Ho has served as an independent director of ASEH since June 2018. She is also a member of the audit committee, risk management committee, and corporate sustainability committee of ASEH. Ms. Ho is an independent director of Center Laboratories, Inc., Onward Therapeutics S.A., and Acer Inc., and is a member of the audit committee of Center Laboratories, Inc. and Acer Inc. She is also a member of the compensation committee of Center Laboratories, Inc., Acer Inc. and a board director of KINPO Electronics Inc. She is also a member of the investment committee of Acer Inc. Ms. Ho served as Minister of Ministry of Economic Affairs, R.O.C. from May 2004 to January 2006. She was also Chairperson of the Council for Economic Planning and Development, R.O.C. from May 2007 to May 2008. Ms. Ho holds a bachelor's degree in Agricultural Chemistry from National Taiwan University in Taiwan.

Wen-Chyi Ong has served as an independent director of ASEH since August 2021. Mr. Ong is also a member of the audit committee, compensation committee, and corporate sustainability committee of ASEH. Mr. Ong is now an adjunct professor of finance at the Business School of National Chengchi University in Taipei. In July 2017, Mr. Ong was invited by the board of the SinoPac Financial Holding Company to lead the distressed financial institution. Spending three years with the bank, Mr. Ong successfully turned the bank around in terms of profitability and corporate governance. Prior to this private sector job, Mr. Ong was chairman of the state-owned Chunghwa Post Company. Before returning to Taipei, Mr. Ong was Taiwan's representative to India between 2008 and 2012. With ambassadorial ranking, he played a critical role in enhancing India-Taiwan's economic and cultural relations. In 2005, Mr. Ong was appointed by Taiwan's Financial Supervisory Commission (FSC) to set up a representative office in New York where he worked closely with U.S. financial regulators for cross-border supervision. Prior to New York, Mr. Ong was a Trade Negotiator representing Taiwan at the World Trade Organization. He spent three years in Geneva. In Taiwan, Mr. Ong was a financial regulator for foreign banks for two years and director for the QFII (Qualified Foreign Institutional Investors) business for four years. In his earlier career, he spent six years in Washington, DC as a junior Foreign Service Officer. Mr. Ong graduated from the National Taiwan University in 1981, majoring in international relations. In 1998, Mr. Ong enrolled in the Cass Business School of the City University, London, where he earned an MS degree in investment and risk management.

Joseph Tung has served as chief financial officer of ASEH since its founding in April 2018. He was a director of ASE Inc. from April 1997 to December 2020 and chief financial officer of ASE Inc. from December 1994 to July 2020. He was an independent director of Ta Chong Bank Ltd. from October 2007 to December 2017. Before joining ASE Inc., Mr. Tung was a vice president at Citibank, N.A. Mr. Tung holds a bachelor's degree in Economics from National Chengchi University in Taiwan and a master's degree in Business Administration from the University of Southern California.

Du-Tsuen Uang has served as chief administrative officer of ASEH since its founding in April 2018. He also has served as chief corporate governance officer of ASEH since March 2019, and chief risk officer of ASEH since February 2020. As one of ASEH's managing team members, Mr. Uang has also served as chief administrative officer of ASE Inc. since August 2017. Other than the aforementioned positions, Mr. Uang has also served as the chairman/ general manager of Advanced Semiconductor Engineering (China) Ltd., general manager/ director of ASE Social Enterprise Co., Ltd. and ASE Assembly & Test (Shanghai) Limited, and a director of ASE Environmental Protection and Sustainability Foundation, ASE Inc., USI Shanghai, Hung Ching and Sino Horizon Holdings Ltd. Outside of ASEH, Mr. Uang is also an independent director of Bank of Kaohsiung. He is an honorary professor in the law department at Ming Chuan University. Prior to joining ASEH, Mr. Uang was the dean and professor in the law department at Ming Chuan University. Mr. Uang was also a senior chief secretary of the Taiwan Ministry of Economic Affairs Central Bureau of Standards, commissioner of Taiwan FTC, and an independent director of First Commercial Bank. Mr. Uang received his Ph.D. in Law from National Cheng-Chi University in Taiwan.

Raymond Lo has been with ASEH since its founding in April 2018 and served as general manager of our packaging facility in Kaohsiung, Taiwan since April 2006. Mr. Lo also served as a supervisor of ASE Inc. between July 2000 and May 2006 and director of ASE Inc. since May 2006. Before joining ASE Inc., Mr. Lo was a director of quality assurance at Zeny Electronics Co. Mr. Lo holds a bachelor's degree in Electronic Physics from National Chiao Tung University in Taiwan.

Tien-Szu Chen has been with ASEH since its founding in April 2018. Mr. Chen has served as a director of ASE Inc. since June 2015 and general manager of ASE Inc. Chung-Li branch since August 2015. He has also served as a supervisor of ASE Inc. from June 2006 to June 2015 and president of PowerASE Technology Inc. from June 2006 to May 2012. Prior to joining ASE Inc. in June 1988, Mr. Chen worked at TSMC and Philips Semiconductor Kaohsiung. Mr. Chen holds a bachelor's degree in Industrial Engineering from Chung Yuan Christian University in Taiwan.

Chung Lin has served as general manager of ASE Electronics since May 2023, and ASE Shanghai since May 2018. Mr. Lin was previously the vice president of ASESH AT since May 2012, vice president of ASEWH since 2010 and ASE Shanghai since May 2005. Prior to joining ASE Inc., he worked at HP Taiwan and Orient Semiconductor Electronics, Ltd. Mr. Lin holds a master's degree in Computer Science from Columbia University.

Gichol Lee has served as general manager of ASE Korea since November 2019. Mr. Lee was previously the vice president of Business Systems with Motorola and then ASE Korea. Prior to his current position, he has held various managerial positions with DuPont and Unilever. He holds a master's degree from Columbia University.

Chih-Hsiao Chung has served as general manager of ASE Japan since March 2011 and general manager of Wuxi Tongzhi since June 2013. Mr. Chung has also managed the sales and marketing of the ASE Japan region since April 2007. Before joining ASE Inc., Mr. Chung was a senior manager of sales and marketing at Kimberly Clark Co., Taiwan. He holds a master's degree in Business Administration from the University of Wisconsin-Madison.

Kwai Mun Lee has served as president of our Southeast Asia operations, with responsibility for the operations of our Penang, Malaysia, and Singapore manufacturing facilities, since March 2006 and as general manager of ASE Singapore from May 1999 to February 2006. Before joining ASE Inc., Mr. Lee held senior management positions at Chartered Semiconductor and STATS ChipPAC. He started his career as an engineer at Intel. He holds a degree in Engineering from Swinburne Institute of Technology in Australia.

Yean Peng Chen has served as general manager of ASE Singapore Pte. Ltd. since January 2019. He has also worked at ISE Labs before being appointed as vice president of operations in ASE Singapore in July 2015. He started his career as an equipment engineer at STATS ChipPAC Ltd. Mr. Chen holds a diploma in Electronic and Computer Engineering from Ngee Ann Polytechnic in Singapore.

Kelvin Liu Fook Lin has been with ASE Malaysia since 2017 and served as its general manager in 2024. Prior to his appointment as general manager, Mr. Liu held various leadership roles, including business unit vice president for CuClip, Image Sensors, and Memory. In addition, he leads the Design and Development division at ASE Malaysia. Mr. Liu holds a First-Class Honours Bachelor's degree in Electrical and Electronics from Lincolnshire and Humberside University in the UK.

Kenneth Hsiang has served as chief executive officer of ISE Labs and ISE Shanghai since 2019 and served as general manager of ISE Labs from June 2004 to 2019. Prior to joining ASE Inc. in November 1999, Mr. Hsiang worked in various management positions within finance and strategic analysis in the healthcare and biotech industries in the San Francisco Bay area in California. He also worked for Price Waterhouse LLP as a certified public accountant. Mr. Hsiang received a bachelor's degree in Economics and Rhetoric from the University of California, Berkeley.

Chi-Wen Tsai was with ASEH from April 2018 to June 2024. Mr. Tsai has been SPIL's director since August 1984. Mr. Tsai is currently chairman and president of SPIL. Mr. Tsai holds a bachelor's degree in Electrical Engineering from National Taipei Institute of Technology in Taiwan.

Kevin Yu has served as general manager of SZ since December 2021. He holds a bachelor's degree in Electrical Engineering from Minghsin University in Taiwan.

Chen-Yen Wei has served as chairman of Universal Scientific Industrial Co., Ltd. since July 2014 and president of Universal Scientific Industrial (Shanghai) Co., Ltd. since April 2008. He joined Universal Scientific Industrial as an engineer in August 1979. He holds a bachelor's degree in Communication Engineering from National Chiao Tung University in Taiwan.

Jing Cao serves as Sr. vice president, General Manager of USI Asia Region, SiM Business Unit, and Smart Manufacturing of Universal Scientific Industrial Co. Ltd. (USI). He joined USI on April 15, 2015 as Sr. VP of Operations and Smart Manufacturing, expanded his responsibilities to GM of Zhangjing Site in January 2018 then to GM of SiM BU and USI Shanghai in March, 2020. Prior to joining USI, he worked as Senior Vice President of Operations of UTAC Group and other executive positions at several public semiconductor companies in the United States. Jing Cao holds a master's degree in mechanical engineering and a master's degree in industrial engineering from Arizona State University in the United States.

Ta-I Lin has served as general manager of Universal Global Technology (Kunshan) Co. Ltd. since August 2011. He joined USI as an engineer in August 1987. He holds a bachelor's degree in Electrical Engineering from National Cheng Kung University in Taiwan and an executive master's degree in Business Administration from Peking University in China.

Yueh-Ming Lin has served as general manager of Universal Global Technology (Huizhou) Co. Ltd. since April 2019 and vice president of the Global Operation Management (Shenzhen) Division of USI Electronics (Shenzhen) Co. Ltd. since February 2017. He joined USI as a section manager in October 1995. He holds a bachelor's degree in Electrical Engineering from Feng Chia University in Taiwan.

Hui-Min Liu has served as general manager of UNIVERSAL SCIENTIFIC INDUSTRIAL VIETNAM COMPANY LIMITED since May 2021 and vice president of ALCMM group of USI since December 2020. He joined USI as an assistant manager in October 2003. He holds a master's degree in Mechanical Engineering from YUNLIN University of Science and Technology in Taiwan.

Matthew Richard Behringer has served as general manager of USI Mexico since December 2024 and as senior vice president of North America operations since February 2024. He joined USI as vice president in May 2022. Prior to joining USI, he held executive leadership positions for over 25 years at various companies, including Jabil and Ultra Clean Technologies in the United States. Mr. Behringer holds a Bachelor's degree in International Business from St. Petersburg College and a Master of Business Administration from the University of Florida. He is also a certified Six Sigma Black Belt by ASQ.

Nicolas Denis has served as chief executive officer of Financière AFG since December 2023. He joined Asteelflash in July 2020, where he held various positions within Asteelflash, serving as chief executive officer of Asteelflash France and Senior Vice-President, EMEA. Prior to joining Asteelflash, he held various leadership positions in OEM companies including Sagemcom. He holds master's degrees in engineering from Ecole Polytechnique and Ecole des Mines ParisTech in France.

Ying Pin Wu has served as general manager of Asteelflash Suzhou Co., Ltd. since January 2009. He joined Asteelflash Group in 2008 via the acquisition of Flash Electronics, Inc. by ASTEEL. He previously served in a variety of finance positions within Flash Electronics, Inc. and now is responsible for business management & operations in the APAC region for FAFG, operations at USI Kunshan's site, and business management in USI's Visual Product business unit. He holds a master's degree in Business Administration from California State University.

The business address of our directors and executive officers is our registered office.

COMPENSATION

In 2024, we recorded expenses of approximately NT\$1,583.5 million (US\$48.3 million) as remuneration to our directors and executive officers. In 2024, we accrued pension costs of NT\$10.4 million (US\$0.3 million) for retirement benefits for our management.

Our Articles of Incorporation stipulates to distribute employees' compensation and remuneration to directors at the rates of 0.01%-1.00% and no higher than 0.75%, respectively, of net profit before income tax, employees' compensation and remuneration to directors. We recorded NT\$79.9 million (US\$2.4 million) as compensation to our directors for the year ended December 31, 2024.

In addition, our Articles of Incorporation sets the remuneration of our independent directors at NT\$3.0 million (US\$0.1 million) per year.

We have not provided any loans to, or guarantees for, the benefit of any of our directors or executive officers. For information regarding our pension and other retirement plans and those of our subsidiaries, see Note 23 to our consolidated financial statements included in this annual report.

Employee Compensation

We award bonuses to employees of ASEH and its subsidiaries who are located in Taiwan based on overall income and individual performance targets. Employees are eligible to receive bonuses in the form of our Common Shares valued at the closing price (after adjustment with consideration of the effects on the share price, if any, brought by cash and stock dividends resolved at shareholders' meetings) of our Common Shares on the day prior to our meeting of the board of directors. Actual amounts of compensation to individual employees are determined based upon the employee meeting specified individual performance objectives. We recorded NT\$81.1 million (US\$2.5 million) as compensation to our employees for the year ended December 31, 2024.

Share-Based Payment Arrangements

ASEH Employee Share Option Plans

ASEH assumed ASE's obligations of outstanding employee stock option plans on April 30, 2018, including the 2015 employee share option plan. ASEH adopted the first and the second employee share option plans in November 2018 and August 2023, respectively. As a result, as of December 31, 2024, ASEH maintained three employee stock option plans, adopted in 2015, 2018, and 2023, respectively.

Pursuant to these plans, our full-time employees are eligible to receive share options. Under the 2015, 2018 and 2023 option plans, each share option represents the right to purchase one ordinary share of the Company when exercised. The right of those share options granted under the plan is valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date. For any subsequent changes in certain prescribed criteria stipulated in these employee share option plans, the exercise price is accordingly adjusted.

As of December 31, 2024, 2,397 thousand options were outstanding with an exercise price of NT\$73.0 per Share under the 2015 option plan, 41,884 thousand options were outstanding with an exercise price of NT\$42.7 per Share under the 2018 option plan, and 143,820 thousand options were outstanding with an exercise price of NT\$103.5 per Share under the 2023 option plan.

ASEH Employee Restricted Stock Awards Plan

In 2021, ASEH adopted the 2021 restricted stock awards plan, or the 2021 RSA Plan, and grant 15,000 thousand Common Shares, or the 2021 RSAs, as a token of gratitude, to its employees, including domestic and foreign subsidiaries. Directors who are non-employees and/or individual(s) holding more than 10% of the Common Shares of ASEH are not eligible to participate in the 2021 RSA Plan. The 2021 RSAs granted to eligible participants will be issued in the name of a custodian and deposited in a trust account pursuant to (i) a custodian agreement entered into between the trustee and ASEH and (ii) a power of attorney issued by the eligible participant to ASEH in relation to the custodian agreement.

The 2021 RSAs deposited in the trust account are subject to forfeiture restrictions, for example, they are non-transferrable, redeemable or revocable by ASEH upon termination of employment and/or upon material breach of employment agreement, or if the eligible participant fails to reach specific performance targets. Vesting of the 2021 RSAs to the eligible participant is subject to personal performance targets and ASEH's operation objectives, as specified under the 2021 RSA Plan. In three years after the date of issuance, the maximum number of 2021 RSAs that can vest each year is limited to one-third of the total 2021 RSAs granted for each participant. Eligible participants will be entitled to certain economic benefits, same as the other Common Shares holders, of the unvested 2021 RSAs, including stock dividends, cash dividends, rights to receive from legal reserve and capital surplus, and share options at cash capital increase, which benefits will be accrued in the trust account and transfer to the participant upon vesting. All of the 2021 RSAs under the 2021 RSA Plan have been granted to the eligible participants and issued pursuant to the custodian agreement. All of the 2021 RSAs have been exercised, expired, or forfeited as of December 31, 2024.

In 2024, ASEH adopted the 2024 restricted stock awards plan, or the 2024 RSA Plan, and granted 16,500 thousand Common Shares, or the 2024 RSAs, as a token of gratitude, to its employees, including domestic and foreign subsidiaries. Directors who are non-employees and/or individual(s) holding more than 10% of the Common Shares of ASEH are not eligible to participate in the 2024 RSA Plan. The 2024 RSAs granted to eligible participants will be issued in the name of a custodian and deposited in a trust account pursuant to (i) a custodian agreement entered into between the trustee and ASEH and (ii) a power of attorney issued by the eligible participant to ASEH in relation to the custodian agreement.

The 2024 RSAs deposited in the trust account are subject to forfeiture restrictions, for example, they are non-transferrable, redeemable or revocable by ASEH upon termination of employment and/or upon material breach of employment agreement, or if the eligible participant fails to reach specific performance targets. Vesting of the 2024 RSAs to the eligible participant is subject to personal performance targets and ASEH's operation objectives, as specified under the 2024 RSA Plan. In three years after the date of issuance, the maximum number of 2024 RSAs that can vest each year is limited to one-third of the total 2024 RSAs granted for each participant. Eligible participants will be entitled to certain economic benefits, same as the other Common Shares holders, of the unvested 2024 RSAs, including stock dividends, cash dividends, rights to receive from legal reserve and capital surplus, and share options at cash capital increase, which benefits will be accrued in the trust account and transfer to the participant upon vesting. As of December 31, 2024, 16,500 thousand shares of 2024 RSAs under the 2024 RSA Plan have been granted to the eligible participants and issued pursuant to the custodian agreement and remain restricted.

AMPI Share Option Plans

In May 2021, AMPI adopted an employee share option plan with the issuance of 10,000 thousand units. The options are valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date. For any subsequent changes in AMPI's capital structure, the exercise price will be adjusted accordingly. As of December 31, 2024, 3,100 thousand options were outstanding with an exercise price of NT\$29.7 per share.

USI Shanghai Share Option Plans

Under the share option plan USI Shanghai adopted in 2015, each unit represents the right to purchase one ordinary share of USI Shanghai when exercised. The options are valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date, subject to certain performance conditions. For any subsequent changes in USI Shanghai's capital structure, the exercise price is accordingly adjusted.

In 2019, USI Shanghai adopted a new share option plan and granted 17,167 thousand share options to its employees. Each unit represents the right to purchase one ordinary share of USI Shanghai when exercised. The options are valid for 3.0 years, 4.0 years and 5.0 years, respectively, and are exercisable at certain percentages within 12 months subsequent to the second, the third and the fourth anniversary of the grant date subject to the satisfaction of certain performance conditions within each respective vesting period. In the event that USI Shanghai increases share capital by capital surplus or by cash, or distributes share dividends or cash dividends, the exercisable share option units and the exercise price are accordingly adjusted. All options granted under the 2019 plan have been exercised, expired, or forfeited during 2024.

In 2020, USI Shanghai adopted another share option plan and granted 1,140 thousand share options to its employees. The conditions of these issued share options are the same as the share options plan that issued in 2019, except that the options are valid for 2.2 years, 3.2 years, and 4.2 years, respectively and with each respective vesting period of 1.2 years, 2.2 years, and 3.2 years. All options granted under the 2020 plan have expired during 2024.

In 2023, USI Shanghai adopted another share option plan and granted 14,506 thousand share options to its employees. The conditions of issued 2023 share options are the same as those under the 2019 share options plan, except that the options are valid for 2 years and 3 years, respectively, with respective vesting periods of 1 year and 2 years.

As of December 31, 2024, 11,061 thousand options were outstanding with an exercise price of RMB15.5 per Share under the 2015 plan, and 5,940 thousand options were outstanding with an exercise price of RMB14.3 per Share under the 2023 plan.

USI Shanghai Restricted Stock Plans

In 2023, USI Shanghai adopted a restricted stock plan and granted 372 thousand shares and 5,722 thousand shares in November 2023 and January 2024, respectively, to its directors (excluding independent directors), supervisors and employees. The options are valid for 3 years. The valid period may be early terminated or extended prior to one month of the expiration date depending on the conditions of ordinary shares granted. Upon satisfaction of certain performance conditions in each phase specified under the plan, participants are entitled to subscribe to USI Shanghai's ordinary shares issued under the plan at a certain percentage at the end of the applicable lock-up period. The plan consists of 2 phases with a lock-up period of 1 year and 2 years, respectively.

As of December 31, 2024, USI Shanghai maintained one restricted stock plan adopted in 2023, pursuant to which 186 thousand options were outstanding with an exercise price of RMB14.5 per share, and 2,733 thousand options were outstanding with an exercise price of RMB14.4 per share.

BOARD PRACTICES

General

For a discussion of the terms of office of the board of directors, see “—Directors and Senior Management.” No benefits are payable to members of the board or the executive officers upon termination of their relationship with us. Our board of directors established the audit committee, compensation committee, risk management committee, and corporate sustainability committee, to convene meetings and perform duties as prescribed in the charters and/or within applicable laws and regulations. The committees also submit proposals for board resolution, and report the status of matters relating to their respective functions to the board of directors. In parallel, our internal audit department conducts periodical audits and presents audit results to the audit committee and the board of directors. In 2019, Du-Tsuen Uang, chief administration officer, was appointed as the corporate governance officer by the board of directors to facilitate the operation of the board of directors. In addition, we have established the resource integration and decision-making committee to strengthen resource integration and decision-making efficiency across all subsidiaries, with the goal of maximizing shareholder and stakeholder value. For discussions of our committees, see “—Directors and Senior Management—Audit Committee”, “—Directors and Senior Management—Compensation Committee”, “—Directors and Senior Management—Risk Management Committee”, and “—Directors and Senior Management—Corporate Sustainability Committee.”

EMPLOYEES

The following table sets forth certain information concerning our employees as of the dates indicated.

	As of December 31,		
	2022	2023	2024
Total	97,079	92,894	95,492
Function			
Direct labor	49,631	45,826	46,829
Indirect labor (manufacturing)	28,242	29,933	27,596
Indirect labor (selling and administration)	8,173	8,010	8,352
Research and development	11,033	12,125	12,715
Location			
Taiwan	61,908	58,230	60,043
P.R.C.	19,895	17,855	17,755
Korea	2,480	2,399	2,780
Malaysia	3,724	3,410	3,165
Mexico	2,873	3,760	3,182
Singapore	884	907	846
Japan	566	446	475
Vietnam	768	746	1,226
U.S.	611	664	648
Poland	303	399	269
Tunisia	1,248	1,182	1,284
Germany	547	872	896
France	971	1,100	1,106
Czech Republic	169	156	153
United Kingdom	127	138	119
Belgium	5	5	5
Hungary	-	625	649
Philippines	-	-	891

Eligible employees may participate in our and our subsidiaries' employee share options plans and restricted stock plans. See "— Compensation."

We have never experienced a work stoppage caused by our employees. We believe that our relationship with our employees is good.

SHARE OWNERSHIP

The following table sets forth certain information with respect to our Common Shares and options of ASEH exercisable for our Common Shares held by our directors and executive officers as of January 31, 2025. Percentage of beneficial ownership is based on 4,416,485,537 Common Shares outstanding as of January 31, 2025.

Director or Executive Officer	Number of ASEH Common Shares Beneficially Held ⁽¹⁾	Percentage of ASEH Total Common Shares Issued and Outstanding	Number of Options Exercisable ⁽²⁾	Exercise Price of Options (NT\$)	Expiration Date of Options
Jason C.S. Chang	949,352,706 ⁽³⁾	21.50%	3,000,000	42.7	2028/11/23
Richard H. P. Chang	124,175,228	2.81%	3,000,000	42.7	2028/11/23
Tien Wu	6,477,473	*	*	42.7	2028/11/23
Jeffrey Chen	2,183,000	*	*	42.7	2028/11/23
Rutherford Chang ⁽⁴⁾	2,002,647	*	*	42.7	2028/11/23
Andrew Tang	140,000	*	*	42.7	2028/11/23
Shen-Fu Yu	2,388	*	0	—	—
Mei-Yueh Ho	0	0.00%	0	—	—
Wen-Chyi Ong	0	0.00%	0	—	—
Joseph Tung	3,715,411	*	*	42.7	2028/11/23
Du-Tsuen Uang	730,000	*	0	—	—
Raymond Lo	3,083,430	*	*	42.7	2028/11/23
Tien-Szu Chen	2,181,821	*	*	42.7	2028/11/23
Chung Lin	100,278	*	*	42.7	2028/11/23
Gichol Lee	0	0.00%	0	—	—
Chih-Hsiao Chung	489	*	*	42.7	2028/11/23
Kwai Mun Lee	0	0.00%	0	—	—
Yean Peng Chen	0	0.00%	0	—	—
Kelvin Liu Fook Lin	0	0.00%	0	—	—
Kenneth Hsiang	80,000	*	*	42.7	2028/11/23
Chi-Wen Tsai	14,930,000	*	0	—	—
Kevin Yu	33,000	*	0	—	—
Chen-Yen Wei	366,115	*	0	—	—
Jing Cao	0	0.00%	0	—	—
Ta-I Lin	0	0.00%	0	—	—
Yueh-Ming Lin	0	0.00%	0	—	—
Hui-Min Liu	0	0.00%	0	—	—
Matthew Richard Behringer	0	0.00%	0	—	—
Nicolas Denis	0	0.00%	0	—	—
Ying Pin Wu	0	0.00%	0	—	—

(1) Including shares directly held and shares beneficially owned through spouse and minor children.

(2) Each option may be converted into one of our Common Shares. The figures referred to herein include options convertible into our Common Shares scheduled to vest within 60 days as of the date hereof.

(3) Including 684,327,886 Common Shares Jason C.S. Chang beneficially owned through ASE Enterprises Limited, Aintree Limited and JC Holdings Limited and 265,024,820 Common Shares beneficially owned through Value Tower Limited and JC Holdings Limited. See “Item 7. Major Shareholders and Related Party Transactions—Major Shareholders.”

(4) On February 7, 2025, ASE Technology Holding announced the passing of Mr. Rutherford Chang.

* The sum of the number of Common Shares held and the number of Common Shares issuable upon exercise of all options held is less than 1.00% of our total outstanding shares.

DISCLOSURE OF A REGISTRANT’S ACTION TO RECOVER ERRONEOUSLY AWARDED COMPENSATION

None.

Item 7. Major Shareholders and Related Party Transactions

MAJOR SHAREHOLDERS

The following table sets forth information known to us with respect to the beneficial ownership of our Common Shares, as of January 31, 2025, by each shareholder known by us to beneficially own more than 5.0% of our total outstanding shares.

Beneficial ownership is determined in accordance with the rules and regulations of the SEC. Percentage of beneficial ownership is calculated based on 4,416,485,537 Common Shares outstanding as of January 31, 2025. In addition, when computing the number of shares beneficially owned by a person and the percentage ownership of that person, we have included shares that the person has the right to acquire within 60 days, including through the exercise of any option, warrant, or other right or the conversion of any other security. These shares, however, are not included in the computation of the percentage ownership of any other person.

Name of Shareholder	Common Shares Beneficially Owned	
	Number	Percentage
Jason C.S. Chang ⁽¹⁾	949,352,706	21.50%

- (1) Jason C.S. Chang is our chairman. Jason C.S. Chang beneficially owned 684,327,886 Common Shares through ASE Enterprises Limited, Aintree Limited, and JC Holdings Limited, and 265,024,820 Common Shares through Value Tower Limited and JC Holdings Limited. As a result, Jason C.S. Chang beneficially owned 949,352,706 Common Shares, representing 21.50% of our total outstanding shares (based on 4,416,485,537 Common Shares as of January 31, 2025). ASE Enterprises Limited is a company organized under the laws of Hong Kong. All of the outstanding shares of ASE Enterprises Limited are held by Aintree Limited. Aintree Limited is a company organized under the laws of the British Virgin Islands. All of the shares of Aintree Limited are held by JC Holdings Limited. Value Tower Limited is a company organized under the laws of the British Virgin Islands. JC Holdings Limited is the sole shareholder of Value Tower Limited. The shares of JC Holdings Limited are held through intermediary holding companies and under a revocable trust established under the laws of the Commonwealth of the Bahamas for the benefit of our chairman, Jason C.S. Chang, and his family as of February 4, 2025. There were no significant changes in the percentage of ownership beneficially owned by Jason C.S. Chang in 2022, 2023, and 2024.

The following table sets forth information relating to our Common Shares held directly by our consolidated subsidiaries and our equity method investee as of January 31, 2025.

Name of Shareholder	Common Shares Beneficially Owned	
	Number	Percentage
ASE ⁽¹⁾⁽³⁾	67,452,117	1.53%
ASE Test Taiwan ⁽²⁾⁽³⁾	5,489,388	0.12%
Hung Ching ⁽⁴⁾	44,130,751	1.00%

- (1) ASE is our wholly owned subsidiary. ASE's ownership of our Common Shares is the result of the merger, subsequent dividends upon shares received in connection with merger and capital reduction.
- (2) ASE Test Taiwan is our wholly owned subsidiary. ASE Test Taiwan's ownership of our Common Shares is mainly the result of the merger of ASE Material with and into ASE in August 2004, and subsequent dividends upon shares received in connection with this merger. In order to comply with Singapore Companies Act, a trust had been established to hold and dispose of our Common Shares issued to ASE Test Taiwan, which had been a subsidiary of ASE Test, upon completion of the merger. In December 2014, the trust established to hold the Common Shares issued to ASE Test Taiwan had been terminated because ASE Test Taiwan was no longer a subsidiary owned by ASE Test and therefore no longer subject to Singapore Companies Act requirements. As a result, ASE Test Taiwan directly owned 5,489,388 of our Common Shares.
- (3) In order to comply with Singapore law and other applicable laws and regulations, trusts organized under R.O.C. law were established to hold and dispose of our Common Shares issued to ASE Test and ASE Test Taiwan in connection with the merger of ASE Chung Li and ASE Material into our company in August 2004. Under Section 76(1)(b)(ii) of Singapore's Companies Act, Chapter 50, ASE Test, a Singapore company, may not purport to acquire, directly or indirectly, shares or units of shares in our company, ASE Test's parent company. Pursuant to the applicable trust agreements, the trustee under each trust is (1) the registered owner of our Common Shares, (2) authorized to exercise all of the rights as a shareholder of our Common Shares, (3) authorized to sell our Common Shares, subject to market conditions, when such Common Shares become available for resale under R.O.C. law and in accordance with volume limitations under R.O.C. law, at its sole discretion; provided such Common Shares are sold (i) in compliance with R.O.C. laws and regulations, (ii) in an orderly manner in order to minimize the impact on the trading price of our Common Shares, and (iii) in a manner consistent with its fiduciary duties owed to ASE Test, and (4) able to transfer and deliver to ASE Test or ASE Test Taiwan the proceeds from the sale of our Common Shares and any cash dividends distributed, as the case may be. In 2010, to complete the tender offer to acquire Universal Scientific Industrial, ASE Test transferred 141,808,499 shares to the shareholders of Universal Scientific Industrial. Neither ASE Test nor ASE Test Taiwan have any rights with respect to our Common Shares held in trust pursuant to the applicable trust agreements other than the right to receive the proceeds from the sale of such Common Shares and cash dividends declared while the shares remain in trust. In 2014, the trust established to hold the Common Shares issued to ASE Test Taiwan had been terminated because ASE Test Taiwan was no longer a subsidiary owned by ASE Test and therefore no longer subject to the Singapore Companies Act requirements. In 2022, ASE Test and J&R Holding Limited reduced capital by remitting 44,100,236 and 23,351,881 of our Common Shares, respectively, to their shareholders, ASE. As a result, ASE Test Taiwan owned 5,489,388 of our Common Shares and ASE held 67,452,117 of our Common Shares.
- (4) Hung Ching is our equity method investee. As of January 31, 2024, we held 26.22% of the outstanding shares of Hung Ching. Hung Ching acquired our Common Shares in open market transactions, subsequent dividends upon the acquired shares and shares purchased pursuant to the rights offered by the Company.

As of January 31, 2025, none of our major shareholders had voting rights different from those of our other shareholders. We are not aware of any arrangement that may at a subsequent date result in a change of controlling interests. Furthermore, other than as disclosed above, we are not aware of any significant changes in the percentage of ownership held by our major shareholders in 2022, 2023, and 2024.

As of January 31, 2025, a total of 4,416,485,537 Common Shares were outstanding. With certain limited exceptions, holders of Common Shares that are not R.O.C. persons are required to hold their Common Shares through a brokerage account in the R.O.C. As of January 31, 2025, 314,328,442 Common Shares were registered in the name of a nominee of Citibank, N.A., the depository under our ADS deposit agreement. Citibank, N.A. has advised us that, as of January 31, 2025, 157,164,081 ADSs, representing 314,328,162 Common Shares, were held of record by Cede & Co., and 140 ADSs, representing 280 Common Shares, were held by three other U.S. persons.

RELATED PARTY TRANSACTIONS

In consideration of corporate social responsibility and environmental protection, in December 2013, ASE's board of directors approved contributions for promoting environmental protection efforts in Taiwan in a total amount of not less than NT\$3,000.0 million (US\$91.5 million), to be made in the next 30 years. In 2024, we have made contributions of NT\$100.0 million (US\$3.1 million) through the ASE Environmental Protection and Sustainability Foundation. In December 2024, the board of directors of ASE resolved for contributions of NT\$100.0 million (US\$3.1 million) in 2025 to the ASE Environmental Protection and Sustainability Foundation. In 2024, we also made contributions of NT\$12.5 million (US\$0.4 million) through the ASE Cultural and Educational Foundation to continuously promote activities related to cultural and educational public welfare.

ASE entered into a joint development agreement with Hung Ching in June 2020, adhering to the principle of joint construction. Under the agreement, Hung Ching was responsible for building a plant on leased land, and ASE and its affiliates were granted priority purchase rights. In August 2024, ASE's board of directors resolved to purchase the completed plant from Hung Ching for NT\$5,263.0 million (US\$160.5 million). The transaction price was determined based on a report issued by independent professional appraisal firms. The transaction was subsequently approved by Hung Ching's special shareholders' meeting in September 2024 and has been fully paid. Additionally, should Hung Ching fail to carry out the agreed construction with the MOEA as per our instructions, we will assume responsibility for a portion of Hung Ching's non-recoverable guaranteed deposit.

ASE also entered into joint construction and housing unit allocation agreements with Hung Ching in 2021, 2022 and 2024, respectively. These agreements stipulated that ASE would provide land, while Hung Ching would contribute funds for the joint construction of a plant. An independent professional appraisal firm was engaged to determine the allocation ratio of the jointly constructed property. Upon completion of construction, ASE or its subsidiaries would have priority purchase rights for Hung Ching's share of the property based on the agreed joint construction proportion. For the 2021 agreement, ASE's board of directors resolved in August 2023 to acquire 74.46% of the building ownership along with the corresponding land holdings for NT\$1,666.7 million, in accordance with the agreed joint construction proportion.

INTERESTS OF EXPERTS AND COUNSEL

Not applicable.

Item 8. Financial Information

CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION

Consolidated financial statements are set forth under "Item 18. Financial Statements."

Export Sales

We categorize our revenues geographically based on the country in which the customer is headquartered. Revenues from our export sales were NT\$587,217.5 million, NT\$511,422.0 million, and NT\$506,134.7 million (US\$15,435.6 million) in 2022, 2023 and 2024, respectively, which contributed 87.5%, 87.9%, and 85.0% of our total sales for those years, respectively. See "Item 4. Information on the Company—Business Overview—Sales and Marketing" for information on our export sales.

Legal Proceedings

K7 Plant Wastewater Discharge

On December 20, 2013, the Kaohsiung Environmental Protection Bureau ("KEPB") imposed an administrative fine of NT\$102.0 million (the "Original Fine") upon us for violation of the Water Pollution Control Act. After we sought administrative remedies against the Original Fine, the Original Fine was revoked by final judgment of Supreme Administrative Court on June 8, 2017, and KEPB was ordered to refund the Original Fine to us. On December 27, 2019, KEPB refunded NT\$55.1 million to us. On February 10, 2020, KEPB reimposed an administrative fine of NT\$47.0 million (the "New Fine") upon us and offset the New Fine by the remaining amount which shall be refunded to us, therefore no additional payment is required for the New Fine. After we filed an administrative appeal against the New Fine, the Administrative Appeal Review Committee of Kaohsiung City Government revoked the New Fine on December 15, 2020 and remanded to KEPB for another legitimate administrative action. On July 10, 2024, we signed an administrative contract with KEPB whereby we would pay an administrative fine of NT\$0.3 million (US\$0.01 million) and fulfill our corporate social responsibilities by contributing a special fund of NT\$50.0 million (US\$1.5 million) to KEPB for research and development of water pollution prevention technologies, thus reaching a settlement in this case. In addition, KEPB refunded the aforementioned administrative fine of NT\$47.0 million (US\$1.4 million) to us.

Any penalties, fines, damages, or settlements made in connection with these criminal, civil, and/or administrative investigations and/or lawsuits may divert management's attention and resources, which may cause a material adverse effect on our results of operations, financial condition, and business. We are also unable to quantify the harm to our reputation should any adverse findings be made against us. See "Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Any environmental claims or failure to comply with any present or future environmental laws and regulations, as well as any fire or other industrial accident, may require us to spend additional funds and may materially and adversely affect our financial condition and results of operations," and "Item 4. Information on the Company—Business Overview—Environmental Matters."

Dividends and Dividend Policy

The following table sets forth the stock dividends paid during each of the years indicated and related information.

	Cash Dividends per Common Share	Stock Dividends per Common Share	Total Common Shares Issued as Stock Dividends	Outstanding Common Shares on Record Date ⁽¹⁾	Percentage of Outstanding Common Shares Represented by Stock Dividends
	NT\$	NT\$			
2020	2.00	—	—	4,338,439,132	—
2021	4.20	—	—	4,378,537,032	—
2022	7.00	—	—	4,357,425,832	—
2023	8.80	—	—	4,372,963,937	—
2024	5.20	—	—	4,392,105,237	—

(1) Aggregate number of Common Shares outstanding on the record date applicable to the dividend payment. Includes Common Shares issued in the previous year under our share-based payment arrangements.

In order to meet the needs of our present and future capital expenditures, we anticipate paying both stock and cash dividends in the future. The form, frequency, and amount of future cash or stock dividends on our Common Shares will depend upon our net income, cash flow, financial condition, shareholders' requirement for cash inflow, and other factors. According to our Articles of Incorporation, we have a general policy that cash dividend distribution shall not be less than 30% of the total dividend amount and the residual dividends shall be distributed in form of stocks in accordance with the distribution plan proposed by the board of directors and resolved by the general shareholders' meeting.

In general, we are not permitted to distribute dividends or make other distributions to shareholders in any given year in which we did not have either earnings or retained earnings. Before distribution of dividends, we shall offset the losses incurred in prior years and set aside 10% of remaining net earnings as a legal reserve until the accumulated legal reserve equals our paid-in capital, and then allocate or reverse a special surplus reserve in accordance with laws or regulations set forth by the authorities concerned. The remainder plus the undistributed earnings shall be distributed in accordance with the proposal submitted by the board of directors and adopted by the general meeting of shareholders. However, when earnings are distributed as cash dividends, this may be approved by the majority of the directors at a board meeting in which over two-thirds of the directors are present, and then reported to the shareholders' meeting.

According to our Articles of Incorporation, the remuneration of our independent directors is set at NT\$3.0 million per person per year. For those that do not serve a full year, the remuneration will be calculated in proportion to the number of days of the term that were actually served. The additional remuneration of the Company's independent directors who are also the members of the Company's compensation committee is set at NT\$360.0 thousand per person annually. For those that do not serve a full year, the additional remuneration will be calculated in proportion to the number of days of the term that were actually served. In addition, if we are profitable, we set aside 0.01% (inclusive) to 1.00% (inclusive) and 0.75% (inclusive) or less as compensation to employees and remuneration to directors, respectively, of net profit before income tax, employees' compensation and remuneration to directors. While we have accumulated losses, the profit shall be set aside to compensate losses before distribution. See "Item 10. Additional information—Articles of Incorporation—Dividends and Distributions."

Holders of ADSs will be entitled to receive dividends, subject to the terms of the deposit agreement, to the same extent as the holders of our Common Shares. Cash dividends will be paid to the depositary in NT dollars and, except as otherwise provided in the deposit agreement, will be converted by the depositary into U.S. dollars and paid to holders of ADSs according to the terms of the deposit agreement. Stock dividends will be distributed to the depositary and, except as otherwise provided in the deposit agreement, will be distributed by the depositary, in the form of additional ADSs, to holders of ADSs according to the terms of the deposit agreement.

Holders of outstanding Common Shares on a dividend record date will be entitled to the full dividend declared without regard to any prior or subsequent transfer of Common Shares. Holders of outstanding ADSs are entitled to receive dividends, subject to the terms of the deposit agreement, to the same extent as the holders of outstanding Common Shares.

For information relating to R.O.C. withholding taxes payable on dividends, see "Item 10. Additional Information—Taxation—R.O.C. Taxation—Dividends."

SIGNIFICANT CHANGES

Other than as disclosed elsewhere in this annual report, we have not experienced any significant changes since the date of the annual financial statements.

Item 9. The Offer and Listing

OFFER AND LISTING DETAILS

Prior to the establishment of our current holding company, the common shares of ASE had been listed on the TWSE under the symbol “2311” from July 1989 until April 2018. ASE’s ADSs were listed on the NYSE under the symbol “ASX” from September 2000 until April 2018.

ASE Technology Holding Co., Ltd., our current holding company, was established by the combination of ASE and SPIL. Our Common Shares have been listed on the TWSE under the symbol “3711” since April 30, 2018. The TWSE is an auction market where the securities traded are priced according to supply and demand through announced bid and ask prices. As of January 31, 2025, there was an aggregate of 4,416,485,537 of our Common Shares outstanding.

The performance of the TWSE has in recent years been characterized by extreme price volatility. There are currently limits on the range of daily price movements on the TWSE. In the case of equity securities traded on the TWSE, such as our Common Shares, fluctuations in the price of a particular security may not exceed a 10.0% change either above or below the previous day’s closing price of such security.

Our ADSs have been listed on the NYSE under the symbol “ASX” since April 30, 2018. The outstanding ADSs are identified by the CUSIP number 00215W100. As of January 31, 2025, a total of 157,164,221 ADSs were outstanding.

PLAN OF DISTRIBUTION

Not applicable.

MARKETS

The principal trading market for our Common Shares is the TWSE and the principal trading market for ADSs representing our Common Shares is the NYSE.

SELLING SHAREHOLDERS

Not applicable.

DILUTION

Not applicable.

EXPENSES OF THE ISSUE

Not applicable.

Item 10. Additional Information

SHARE CAPITAL

Not applicable.

ARTICLES OF INCORPORATION

General

We are a company limited by shares organized under the laws of the R.O.C. Our organizational document is our Articles of Incorporation. We have no by-laws.

Our Articles of Incorporation provide, in Article 2, that we may engage in the General Investment Business, which includes investments in various businesses including agriculture, forestry, fishery, animal husbandry, industry, mining and merchandising business, investments in service companies, securities companies, bank insurance companies, trading companies, cultural companies, construction of residential buildings, commercial building, recreation businesses, and tourist hotels-related business.

We were incorporated on April 30, 2018 as a company limited by shares under the R.O.C. Company Law. Our authorized share capital was NT\$55,000,000,000, divided into 5,500,000,000 Common Shares with a par value of NT\$10 per Share. We do not have any equity in the form of preference shares or otherwise outstanding as of the date of this annual report.

Subject to limited exceptions, with the approval of our board of directors and the FSC, we may grant share options to our employees; share options worth NT\$4,000,000,000 are reserved for employee subscription. We may issue new shares to employees with restricted rights after the resolutions of the shareholders' meeting. See "Item 6. Directors, Senior Management and Employees—Compensation."

Directors

Our Articles of Incorporation provide that we are to have nine directors (three independent directors and six non-independent directors) who will be elected by the general shareholders' meeting from candidates with legal capacity. Each director shall hold office for a term of three years and may continue to serve in the office if re-elected. The election of the directors of the Company shall be conducted pursuant to the R.O.C. Company Act and relevant regulations. The election of independent directors and non-independent directors should be held concurrently, with the exception that the number of independent directors and non-independent directors elected shall be calculated separately; those who receive votes representing more voting rights will be elected as independent directors or non-independent directors.

Our audit committee replaced the function of supervisors in accordance with the R.O.C. Securities and Exchange Act to exercise the powers and duties of supervisors. The audit committee shall be comprised solely of independent directors.

A candidate nomination system is used in the election of directors. Shareholders who hold 1% or more of our issued shares and the board of directors may nominate a list of candidates for directors. Re-elections are allowed. The board of directors have certain powers and duties, including (1) preparing business plans; (2) preparing surplus distribution or loss make-up proposals; (3) preparing proposals to increase or decrease capital; (4) reviewing material internal rules and contracts; (5) hiring and discharging the general manager; (6) establishing and dissolving branch offices; (7) reviewing budgets and audited financial statements; and (8) other duties and powers granted by or in accordance with the R.O.C. Company Act or shareholders' resolutions.

The board of directors is constituted of directors, and the chairman and vice chairman are elected by more than half of the directors at a board meeting at which two-thirds or more of the directors are present. If the chairman is absent or unable to discharge his or her duties for any reason, his or her acting proxy shall be elected in accordance with the R.O.C. Company Act. Board meetings may be held in the R.O.C. or at any location that is convenient for the directors to attend and appropriate for the meeting to be convened, or by video conference. A director may appoint another director to attend a board meeting and vote by proxy, but only one proxy may be accepted.

Dividends and Distributions

In general, we are not permitted to distribute dividends or make other distributions to shareholders in any given year in which we did not have either earnings or retained earnings. Before distribution of dividends, we shall offset the losses incurred in prior years and set aside 10% of remaining net earnings as a legal reserve until the accumulated legal reserve equals our paid-in capital, and then allocate or reverse a special surplus reserve in accordance with laws or regulations set forth by the authorities concerned. The remainder plus the undistributed earnings shall be distributed in accordance with the proposal submitted by the board of directors and adopted by the general meeting of shareholders. However, if earnings are to be distributed as cash dividends, they shall be reported to the shareholders' meeting with the approval of the majority of the directors at a board meeting, at which over two-thirds of the directors are present.

According to our Articles of Incorporation, the remuneration of our independent directors is set at NT\$3.0 million per person per year. For those that do not serve a full year, the remuneration will be calculated in proportion to the number of days of the term that were actually served. The additional remuneration of our independent directors who are also the members of our compensation committee is set at NT\$360.0 thousand per person per year. For those that do not serve a full year, the additional remuneration will be calculated in proportion to the number of days of the term that were actually served.

If we are profitable, we set aside 0.01% (inclusive) to 1.00% (inclusive) and 0.75% (inclusive) or less as compensation to employees and remuneration to directors, respectively, of net profit before income tax, employees' compensation and remuneration to directors. While we have accumulated losses, the profit shall be set aside to compensate losses before distribution.

At the annual general meeting of shareholders, our board of directors submits to the shareholders for their approval any proposal for the distribution of dividends or the making of any other distribution to shareholders from our net income for the preceding fiscal year. All Common Shares outstanding and fully paid as of the relevant record date are entitled to share equally in any dividend or other distribution so approved. Dividends may be distributed in cash, in the form of Common Shares or a combination of the two, as determined by the shareholders at the meeting. According to our Articles of Incorporation, we have a general policy that cash dividend distribution shall not be less than 30% of the total dividend amount and the residual dividends shall be distributed in form of stocks in accordance with the distribution plan proposed by the board of directors and resolved by the general shareholders' meeting. See "Item 8. Financial Information—Consolidated Statements and Other Financial Information—Dividends and Dividend Policy."

The compensation being distributed to employees in the form of stock or cash shall be approved by more than half of the directors at a board meeting at which two-thirds or more of the directors are present and report to the general shareholders' meeting. In addition to permitting dividends to be paid out of earnings or retained earnings, the R.O.C. Company Act permits us to make distributions to our shareholders in cash or in the form of Common Shares from capital surplus and the legal reserve. While legal reserve is distributed by issuing new shares or by cash, only the portion of legal reserve which exceeds 25% of our paid-in capital can be distributed. We distribute profit to employees in the form of shares by a resolution of a meeting of the board of directors, and may resolve, at the same meeting of the board of directors, to distribute the shares by way of new shares to be issued by us or existing shares to be repurchased by us.

For information on the dividends paid in recent years, see "Item 8. Financial Information—Consolidated Statements and Other Financial Information—Dividends and Dividend Policy." For information as to R.O.C. taxes on dividends and distributions, see "—Taxation—R.O.C. Taxation—Dividends."

Preemptive Rights

Under the R.O.C. Company Law, when an R.O.C. company issues new shares for cash, existing shareholders who are listed on the shareholders' register as of the record date have preemptive rights to subscribe for the new issue in proportion to their existing shareholdings, while a company's employees, whether or not they are shareholders of the company, have rights to subscribe for 10% to 15% of the new issue. Any new shares that remain unsubscribed at the expiration of the subscription period may be freely offered, subject to compliance with applicable R.O.C. law.

In addition, in accordance with the R.O.C. Securities and Exchange Act, a public company that intends to offer new shares for cash must offer to the public at least 10% of the shares to be sold, except under certain circumstances or when exempted by the FSC. This percentage can be increased by a resolution passed at a shareholders' meeting, which would diminish the number of new shares subject to the preemptive rights of existing shareholders.

These preemptive rights provisions do not apply to offerings of new shares through a private placement approved at a shareholders' meeting.

Meetings of Shareholders

General shareholders' meetings include both annual general meetings and extraordinary general meetings. We are required to hold an annual general meeting of our shareholders within six months following the end of each fiscal year. These meetings are generally held in Kaohsiung, Taiwan. Any shareholder who holds 1% or more of our issued and outstanding shares may submit one proposal for discussion at our annual general meeting. Extraordinary general shareholders' meetings may be convened by resolution of the board of directors or by the board of directors upon the written request of any shareholder or shareholders who have held 3% or more of the outstanding Common Shares for a period of one year or longer or shareholders who have held more than 50% of the outstanding Common Shares for three months or longer. Shareholders' meetings may also be convened by the audit committee. Notice in writing of meetings of shareholders, stating the place, time, and purpose, must be dispatched to each shareholder at least 30 days, in the case of annual general meetings, and 15 days, in the case of extraordinary meetings, before the date set for each meeting. A majority of the holders of all issued and outstanding Common Shares present at a shareholders' meeting constitutes a quorum for meetings of shareholders.

Voting Rights

Under the R.O.C. Company Law, except under limited circumstances, shareholders have one vote for each Common Share held. Under the R.O.C. Company Law, our directors are elected at a shareholders' meeting through cumulative voting.

In general, a resolution can be adopted by the holders of at least a majority of our Common Shares represented at a shareholders' meeting at which the holders of a majority of all issued and outstanding Common Shares are present. Under R.O.C. Company Law, the approval by at least a majority of our Common Shares represented at a shareholders' meeting in which a quorum of at least two-thirds of all issued and outstanding Common Shares are represented is required for major corporate actions, including:

- amendment to the Articles of Incorporation, including increase of authorized share capital and any changes of the rights of different classes of shares;
- execution, amendment, or termination of any contract through which the company leases its entire business to others, or the company appoints others to operate its business, or the company operates its business with others on a continuous basis;
- transfer of its entire business or assets or a substantial part of its business or assets;
- acquisition of the entire business or assets of any other company, which would have a significant impact on the company's operations;
- distribution of any stock dividend;
- dissolution, merger, or spin-off of the company;
- issuance of restricted stocks to employees; and
- removal of the directors.

However, in the case of a listed company such as us, the resolution may be adopted by the holders of at least two-thirds of our issued and outstanding Common Shares represented at a shareholders' meeting at which the holders of at least a majority of all issued and outstanding Common Shares are present.

A shareholder may be represented at an annual general or extraordinary meeting by proxy if a valid proxy form is delivered to us five days before the commencement of the annual general or extraordinary general shareholders' meeting. Shareholders may exercise their voting rights by way of a written ballot or by way of electronic transmission if the voting decision is delivered to us two days before the commencement of the annual general or extraordinary general shareholders' meeting.

Holders of ADSs do not have the right to exercise voting rights with respect to the underlying Common Shares, except as described in the deposit agreement.

Other Rights of Shareholders

Under the R.O.C. Company Law, dissenting shareholders are entitled to appraisal rights in certain major corporate actions such as a proposed amalgamation by the company. If agreement with the company cannot be reached, dissenting shareholders may seek a court order for the company to redeem all of their shares. Shareholders may exercise their appraisal rights by serving written notice on the company prior to or at the related shareholders' meeting and/or by raising and registering an objection at the shareholders' meeting. In addition to appraisal rights, shareholders have the right to sue for the annulment of any resolution adopted at a shareholders' meeting where the procedures were legally defective within 30 days after the date of the shareholders' meeting. One or more shareholders who have held 1% or more of the issued and outstanding shares of a company for a period of six months or longer may require the audit committee to bring a derivative action on behalf of the company against a director as a result of the director's unlawful actions or failure to act.

Rights of Holders of Deposited Securities

Except as described below, holders of ADSs generally have no right under the deposit agreement to instruct the depositary to exercise the voting rights for our Common Shares represented by the ADSs. Instead, by accepting ADSs or any beneficial interest in ADSs, holders of ADSs are deemed to have authorized and directed the depositary to appoint our chairman or his designee to represent them at our shareholders' meetings and to vote our Common Shares deposited with the custodian according to the terms of the deposit agreement.

The depositary will mail to holders of ADSs any notice of a shareholders' meeting received from us together with information explaining how to instruct the depositary to exercise the voting rights of the securities represented by ADSs.

If we fail to timely provide the depositary with an English-language translation of our notice of meeting or other materials related to any meeting of owners of Common Shares, the depositary will endeavor to cause all the deposited securities represented by ADSs to be present at the applicable meeting, insofar as practicable and permitted under applicable law, but will not cause those securities to be voted.

If the depositary timely receives voting instructions from owners of at least 51.0% of the outstanding ADSs to vote in the same direction regarding one or more resolutions to be proposed at the meeting, including election of directors, the depositary will notify our chairman or his designee to attend the meeting and vote all the securities represented by the holders' ADSs in accordance with the direction received from owners of at least 51.0% of the outstanding ADSs.

If we have timely provided the depositary with the materials described in the deposit agreement and the depositary has not timely received instructions from holders of at least 51.0% of the outstanding ADSs to vote in the same direction regarding any resolution to be considered at the meeting, then holders of ADSs will be deemed to have authorized and directed the depositary bank to give a discretionary proxy to our chairman or his designee to attend and vote at the meeting our Common Shares represented by the ADSs in any manner our chairman or his designee may wish, which may not be in the interests of holders.

The ability of the depositary to carry out voting instructions may be limited by practical and legal limitations and the terms of the securities on deposit. We cannot assure ADS holders that they will receive voting materials in time to enable them to return voting instructions to the depositary in a timely manner.

While shareholders who own 1% or more of our outstanding shares are entitled to submit one proposal to be considered at our annual general meetings, only holders representing at least 51% of our ADSs outstanding at the relevant record date are entitled to submit one proposal to be considered at our annual general meetings. Hence, only one proposal may be submitted on behalf of all ADS holders.

Register of Shareholders and Record Dates

Our share registrar, President Securities Corp., maintains our register of shareholders at its offices in Taipei, Taiwan. Under the R.O.C. Company Law and our Articles of Incorporation, we may, by giving advance public notice, set a record date and close the register of shareholders for a specified period in order for us to determine the shareholders or pledgees that are entitled to rights pertaining to our Common Shares. The specified period required is as follows:

- annual general meeting—60 days;
- extraordinary general shareholders' meeting—30 days; and
- relevant record date for distribution of dividends, bonuses, or other interests—5 days.

Annual Financial Statements

At least 10 days before the annual general meeting, our annual financial statements, which are prepared in conformity with Taiwan-IFRS, must be available at our principal executive office in Kaohsiung, Taiwan for inspection by the shareholders. According to the regulations of the FSC, we are required to publish our annual and quarterly financial statements on a consolidated basis. In addition, the R.O.C. Securities and Exchange Act requests a public company, such as us, to publicly announce its audited annual financial report within three months after the close of each fiscal year.

Transfer of Common Shares

The transfer of Common Shares in registered form is effected by endorsement and delivery of the related share certificates but, in order to assert shareholders' rights against us, the transferee must have his or her name and address registered on our register of shareholders. Shareholders are required to file their respective specimen seals, also known as chops, with us. Chops are official stamps widely used in Taiwan by individuals and other entities to authenticate the execution of official and commercial documents. The settlement of trading in our Common Shares is normally carried out on the book-entry system maintained by the Taiwan Depository & Clearing Corporation.

Acquisition of Common Shares by ASEH

Under the R.O.C. Securities and Exchange Act, we may purchase our own Common Shares for treasury stock under limited circumstances, including:

- to transfer shares to our employees;
- to deliver shares upon the conversion or exercise of bonds with warrants, preferred shares with warrants, convertible bonds, convertible preferred shares, or warrants issued by us; and
- to maintain our credit and our shareholders' equity, provided that the shares so purchased shall be canceled.

We may purchase our Common Shares on the TWSE or by means of a public tender offer. These transactions require the approval of a majority of our board of directors at a meeting in which at least two-thirds of the directors are in attendance. The total amount of Common Shares purchased for treasury stock may not exceed 10.0% of the total issued shares. In addition, the total cost of the purchased shares shall not exceed the aggregate amount of our retained earnings, any premium from share issuances, and the realized portion of our capital reserve.

We may not pledge or hypothecate any of our shares purchased by us. In addition, we may not exercise any shareholders' rights attaching to such shares. In the event that we purchase our shares on the TWSE, our affiliates, directors, managers, and shareholders, together with their respective spouses, minor children, and/or nominees who hold 10.0% or more of our total issued shares (as well as such respective spouses, minor children and/or nominees) are prohibited from selling any of our shares during the period in which we are purchasing our shares.

Pursuant to the R.O.C. Company Law, an entity in which our company directly or indirectly owns more than 50.0% of the voting shares or paid-in capital, which is referred to as a controlled entity, may not purchase our shares. Also, if our company and a controlled entity jointly own, directly or indirectly, more than 50.0% of the voting shares or paid-in capital of another entity, which is referred to as a third entity, the third entity may not purchase shares in either our company or a controlled entity.

Liquidation Rights

In the event of our liquidation, the assets remaining after payment of all debts, liquidation expenses, and taxes will be distributed pro rata to the shareholders in accordance with the relevant provisions of the R.O.C. Company Law.

Transfer Restrictions

Substantial Shareholders

The R.O.C. Securities and Exchange Act currently requires:

- each director, manager, or substantial shareholder (that is, a shareholder who holds more than 10.0% of the shares of a company), together with their respective spouses, minor children, or nominees, to report any change in that person's shareholding (as well as such respective spouses, minor children, or nominees), on a monthly basis, to the issuer of the shares; and
- each director, manager, or substantial shareholder, together with their respective spouses, minor children, or nominees, after acquiring the status of director, manager, or substantial shareholder for a period of six months, to report his or her intent to transfer any shares (as well as such respective spouses, minor children, or nominees) on the TWSE or on the Taipei Exchange to the FSC at least three days before the intended transfer, unless the number of shares to be transferred does not exceed 10,000 shares.

In addition, the number of shares that can be sold or transferred on the TWSE or on the Taipei Exchange by any person subject to the restrictions described above on any given day may not exceed the greater of:

- 0.2% of the outstanding shares of the company in the case of a company with no more than 30 million outstanding shares; or
- 0.2% of 30 million shares plus 0.1% of the outstanding shares exceeding 30 million shares in the case of a company with more than 30 million outstanding shares; and
- 5.0% of the average trading volume (number of shares) on the TWSE for the 10 consecutive trading days preceding the reporting day on which the director, manager or substantial shareholder reports the intended share transfer to the FSC.

These restrictions do not apply to sales or transfers of our ADSs.

MATERIAL CONTRACT

None.

FOREIGN INVESTMENT IN THE R.O.C.

Historically, foreign investment in the R.O.C. securities market has been restricted. Since 1983, the R.O.C. government has from time to time enacted legislation and adopted regulations to permit foreign investment in the R.O.C. securities market.

On September 30, 2003, the Executive Yuan approved an amendment to the Regulations Governing Investment in Securities by Overseas Chinese and Foreign National (the "Regulations"), which took effect on October 2, 2003. Pursuant to the Regulations, the FSC abolished the mechanism of the "qualified foreign institutional investors" and "general foreign investors" as stipulated in the Regulations before the amendment.

Under the Regulations, foreign investors (other than P.R.C. persons) are classified as either "onshore foreign investors" or "offshore foreign investors" according to their respective geographical location. Both onshore and offshore foreign investors are allowed to invest in R.O.C. securities after they register with the TWSE or the Taiwan Futures Exchange. The Regulations further classify foreign investors into foreign institutional investors and foreign individual investors. "Foreign institutional investors" refer to those investors incorporated and registered in accordance with foreign laws outside of the R.O.C. (i.e., offshore foreign institutional investors) or their branches set up and recognized within the R.O.C. (i.e., onshore foreign institutional investors). Offshore overseas Chinese and foreign individual investors may be subject to a maximum investment ceiling that will be separately determined by the FSC, after consultation with the Central Bank of the Republic of China (Taiwan). Currently, there is no maximum investment ceiling for offshore overseas Chinese and foreign individual investors. Foreign institutional investors are not subject to any ceiling for investment in the R.O.C. securities market.

Except for certain specified industries, such as telecommunications, investments in R.O.C. listed companies by foreign investors are not subject to individual or aggregate foreign ownership limits. Custodians for foreign investors are required to submit to the Central Bank of the Republic of China (Taiwan) and the TWSE a monthly report of trading activities and status of assets under custody and other matters. Capital remitted to the R.O.C. under these guidelines may be remitted out of the R.O.C. at any time after the date the capital is remitted to the R.O.C. Capital gains and income on investments may be remitted out of the R.O.C. at any time.

Foreign investors (other than P.R.C. persons) who wish to make (i) direct investments in the shares of R.O.C. private companies or (ii) investment in 10.0% or more of the equity interest of a R.O.C. company listed on the TWSE or the Taipei Exchange in any single transaction are required to submit a foreign investment approval application to the DIR or other applicable government authority. The DIR or such other government authority reviews each foreign investment approval application and approves or disapproves each application after consultation with other governmental agencies (such as the Central Bank of the Republic of China (Taiwan) and the FSC).

Under current R.O.C. law, any non-R.O.C. person possessing a foreign investment approval may remit capital for the approved investment and is entitled to repatriate annual net profits, interest, and cash dividends attributable to the approved investment. Dividends attributable to such investment may be repatriated upon submitting certain required documents to the remitting bank, and investment capital and capital gains attributable to such investment may be repatriated after approvals of the DIR or other government authorities have been obtained.

In addition to the general restriction against direct investment by foreign investors in securities of R.O.C. companies, foreign investors (except in certain limited cases) are currently prohibited from investing in certain industries in the R.O.C. pursuant to a “negative list,” as amended by the Executive Yuan. The prohibition on foreign investment in the prohibited industries specified in the negative list is absolute in the absence of a specific exemption from the application of the negative list. Pursuant to the negative list, certain other industries are restricted so that foreign investors (except in limited cases) may invest in these industries only up to a specified level and with the special approval of the relevant competent authority that is responsible for enforcing the relevant legislation that the negative list is intended to implement.

The FSC announced the P.R.C. Regulations on April 30, 2009. According to the P.R.C. Regulations, a P.R.C. QDII is allowed to invest in R.O.C. securities (including less than 10.0% (or less in certain industries) of shareholding of a R.O.C. company listed on the TWSE or the Taipei Exchange), provided that the total investment amount of any QDII does not exceed US\$500 million. The custodians of QDIIs must apply with the TWSE for the remittance amount for each QDII, which cannot exceed US\$100 million, and QDII can only invest in R.O.C. securities at an amount approved by the TWSE. In addition, QDIIs are currently prohibited from investing in certain industries, and their investment in any company of certain other industries is restricted to a certain percentage pursuant to a list promulgated by the FSC and amended from time to time. P.R.C. investors other than QDII are prohibited from making investments in a R.O.C. company listed on the TWSE or the Taipei Exchange if the investment is less than 10.0% of the equity interest of such R.O.C. company.

In addition to investments permitted under the P.R.C. Regulations, P.R.C. investors who wish to make (i) a direct investment in the shares of R.O.C. private companies or (ii) investments, individually or in the aggregate, in 10.0% or more of the equity interest of a R.O.C. company listed on the TWSE or the Taipei Exchange, are required to submit an investment approval application to the DIR or other government authority. The DIR or such other government authority reviews each investment approval application and approves or disapproves each application after consultation with other governmental agencies.

In addition to the general restriction against a direct investment by P.R.C. investors in securities of R.O.C. companies, P.R.C. investors may only invest in certain industries on the “positive list” promulgated by the Executive Yuan. Furthermore, a P.R.C. investor who wishes to be elected as a R.O.C. company’s director or supervisor shall submit an investment approval application to the DIR or other government authority for approval.

EXCHANGE CONTROLS

R.O.C. Exchange Controls

The R.O.C. Foreign Exchange Control Act and regulations provide that all foreign exchange transactions must be executed by banks designated by the FSC and by the Central Bank of the Republic of China (Taiwan) to engage in such transactions. Current regulations favor trade-related or service-related foreign exchange transactions. Consequently, foreign currency earned from exports of merchandise and services may now be retained and used freely by exporters, and all foreign currency needed for the importation of merchandise and services may be purchased freely from designated foreign exchange banks.

Apart from trade-related or service-related foreign exchange transactions, R.O.C. companies and individual residents of the R.O.C. reaching the age of 18 years old may, without foreign exchange approval, remit foreign currency of up to US\$100 million (or its equivalent) and US\$10 million (or its equivalent) to and from the R.O.C. (or such other amount as determined by the Central Bank of the Republic of China (Taiwan) from time to time at its discretion in consideration of the economic and financial conditions of the R.O.C. or the needs to maintain the order of the foreign exchange market in the R.O.C.), respectively, in each calendar year. The above limits apply to remittances involving either a conversion of NT dollars into a foreign currency or a conversion of foreign currency into NT dollars. In addition, a requirement is also imposed on all enterprises incorporated or registered in the R.O.C. to register their medium- and long-term foreign debts with the Central Bank of the Republic of China (Taiwan).

In addition, foreign persons may, subject to specified requirements, but without foreign exchange approval of the Central Bank of the Republic of China (Taiwan), remit to and from the R.O.C. foreign currencies of up to US\$100,000 (or its equivalent) per remittance if the required documentation is provided to the R.O.C. authorities. The above limit applies to remittances involving either a conversion of NT dollars into a foreign currency or a conversion of foreign currency into NT dollars. The above limit does not, however, apply to the conversion of NT dollars into other currencies, including U.S. dollars, from the proceeds of a sale of any underlying shares withdrawn from a depository receipt facility.

TAXATION

R.O.C. Taxation

The following discussion describes the material R.O.C. tax consequences of the ownership and disposition of our Common Shares or ADSs by and to a nonresident individual or nonresident entity holder that owns our Common Shares or ADSs (referred to here as a “non-R.O.C. holder”). As used in this context, a “nonresident individual” is a non-R.O.C. national who owns our Common Shares or ADSs and is not physically present in the R.O.C. for 183 days or more during any calendar year, and a “nonresident entity” is a corporation or a noncorporate body that owns our Common Shares or ADSs, is organized under the laws of a jurisdiction other than the R.O.C. and has no fixed place of business or business agent in the R.O.C.

Dividends

Dividends (whether in cash or Common Shares) declared by us out of retained earnings and distributed to a non-R.O.C. holder are subject to R.O.C. withholding tax at 21% (unless a preferable tax rate is provided under a tax treaty between the R.O.C. and the jurisdiction where the non-R.O.C. holder is a resident) on the amount of the distribution (in the case of cash dividends) or on the par value of the distributed Common Shares (in the case of stock dividends).

Distributions of Common Shares or cash out of capital reserves will not be subject to withholding tax, except under limited circumstances.

Capital Gains

Starting from January 1, 2016, capital gains realized upon the sale or other disposition of common shares are exempt from R.O.C. income tax.

Sales of ADSs are not regarded as sales of R.O.C. securities, and thus any gains derived from transfers of ADSs by non-R.O.C. holders are not currently subject to R.O.C. income tax.

Securities Transaction Tax

Securities transaction tax will be imposed on the seller at the rate of 0.3% of the transaction price upon a sale of common shares. Transfers of ADSs are not subject to R.O.C. securities transaction tax. During the one-year period from April 28, 2017 to April 27, 2018, the tax rate for day trading of shares meeting certain criteria was reduced to 0.15%. The Legislative Yuan approved on April 13, 2018 is an extension of the aforesaid reduction in the tax rate. Under the amended Securities Transaction Tax Act, which became effective on April 27, 2018, the aforesaid reduction in the tax rate applies until December 31, 2027.

Subscription Rights

Distributions of statutory subscription rights for our Common Shares in compliance with the R.O.C. Company Law are currently not subject to R.O.C. tax. Sales of statutory subscription rights evidenced by securities are subject to securities transaction tax, currently at the rate of 0.3% of the gross amount received. Holders are exempt from income tax on capital gains from the sale of statutory subscription rights evidenced by securities. Proceeds derived from sales of statutory subscription rights, which are not evidenced by securities, are not subject to securities transaction tax but are subject to income tax at a fixed rate of 20% of the income if the seller is a non-R.O.C. holder. Subject to compliance with R.O.C. law, we, in our sole discretion, may determine whether statutory subscription rights are evidenced by securities.

Estate and Gift Tax

R.O.C. estate tax is payable on any property within the R.O.C. left by a deceased nonresident individual, and R.O.C. gift tax is payable on any property within the R.O.C. donated by a nonresident individual. Estate tax and gift tax are currently imposed at the progressive rates of 10%, 15% and 20%. Under the R.O.C. Estate and Gift Tax Act, common shares issued by R.O.C. companies are deemed property located in the R.O.C. without regard to the location of the owner. It is unclear whether a holder of ADSs will be considered to own common shares for this purpose.

Tax Treaty

At present, the R.O.C. has income tax treaties with Indonesia, Singapore, New Zealand, Australia, the United Kingdom, South Africa, Gambia, eSwatini (Swaziland), Malaysia, North Macedonia, the Netherlands, Senegal, Sweden, Belgium, Denmark, Israel, Vietnam, Paraguay, Hungary, France, India, Slovakia, Switzerland, Germany, Thailand, Kiribati, Luxembourg, Austria, Italy, Japan, Canada, Poland, Czech Republic, Saudi Arabia, and Korea. These tax treaties may limit the rate of R.O.C. withholding tax on dividends paid with respect to common shares issued by R.O.C. companies. A non-R.O.C. holder of ADSs may or may not be considered as the beneficial owner of common shares for the purposes of such treaties. Accordingly, holders of ADSs who wish to apply a reduced withholding tax rate that is provided under a tax treaty should consult their own tax advisers concerning such application. The U.S. does not have an income tax treaty with the R.O.C.

U.S. Federal Income Taxation

The following discussion describes material U.S. federal income tax consequences of the ownership and disposition of our Common Shares or ADSs to the U.S. Holders described below that hold such Common Shares or ADSs as capital assets for U.S. federal income tax purposes. As used herein, a “U.S. Holder” is a person that, for U.S. federal income tax purposes, is a beneficial owner of our Common Shares or ADSs and:

- a citizen or individual resident of the U.S.;
- a corporation, or other entity taxable as a corporation, created or organized under the laws of the U.S. or of any political subdivision of the U.S.; or
- an estate or trust the income of which is subject to U.S. federal income taxation regardless of its source.

This discussion does not describe all of the tax consequences that may be relevant in light of a U.S. Holder’s particular circumstances, including any minimum tax consequences, the provisions of the Internal Revenue Code of 1986, as amended (the “Code”) known as the Medicare contribution tax, and tax consequences that may be relevant to U.S. Holders subject to special rules, including:

- insurance companies;
- tax-exempt entities, “individual retirement accounts” or “Roth IRAs”;
- dealers or traders in securities that use a mark-to-market method of accounting for U.S. federal income tax purposes;
- certain financial institutions;
- partnerships or other entities classified as partnerships for U.S. federal income tax purposes and partners therein;
- persons holding Common Shares or ADSs in connection with a trade or business conducted outside of the U.S.;
- persons that hold or will hold Common Shares or ADSs as part of a straddle, integrated transaction, or similar transactions;
- persons whose functional currency for U.S. federal income tax purposes is not the U.S. dollar;
- persons that own or are deemed to own 10% or more of the voting power or value of our stock; or
- persons that acquired our Common Shares or ADSs pursuant to the exercise of any employee stock option or otherwise as compensation.

If an entity that is classified as a partnership for U.S. federal income tax purposes holds our Common Shares or ADSs, the U.S. federal income tax treatment of a partner will generally depend on the status of the partner and the activities of the partnership. Partnerships holding our Common Shares or ADSs and their partners should consult their tax advisers as to the particular U.S. federal income tax consequences of holding and disposing of our Common Shares or ADSs.

This discussion is based on the Code, final, temporary, and proposed Treasury regulations, administrative pronouncements, and judicial decisions, all as of the date hereof. These laws and regulations are subject to change, possibly with retroactive effect.

In general, for U.S. federal income tax purposes, a U.S. Holder that owns ADSs should be treated as the owner of the Common Shares represented by the ADSs. Accordingly, no gain or loss should be recognized if a U.S. Holder exchanges ADSs for the Common Shares represented by those ADSs.

U.S. Holders should consult their tax advisers with regard to the application of the U.S. federal income tax laws to their Common Shares or ADSs, as well as any tax consequences arising under the laws of any state, local or non-U.S. taxing jurisdiction.

Dividends

Distributions paid on our Common Shares or ADSs, other than certain pro rata distributions of our Common Shares to all holders of our Common Shares and ADSs, will generally constitute dividend income to the extent paid out of our current or accumulated earnings and profits, as determined in accordance with U.S. federal income tax principles. Because we do not maintain calculations of our earnings and profits under U.S. federal income tax principles, it is expected that distributions generally will be reported to U.S. Holders as dividends. The amount a U.S. Holder will be required to include in income with respect to any dividend paid in NT dollars will be equal to the U.S. dollar value of the NT dollars paid, calculated by reference to the exchange rate in effect on the date the payment is received by the depositary (in the case of ADSs) or by a U.S. Holder (in the case of Common Shares), regardless of whether the payment is in fact converted into U.S. dollars on the date of receipt. If a U.S. Holder does not convert the NT dollars so received into U.S. dollars on the date of receipt, any gain or loss recognized on a subsequent sale or other disposition of the NT dollars generally will be U.S.-source ordinary income or loss. The amount of any taxable distribution of property other than cash will be the fair market value of such property on the date of distribution. Dividends will not be eligible for the dividends-received deduction generally available to U.S. corporations under the Code.

Subject to applicable limitations, certain dividends paid by “qualified foreign corporations” to certain non-corporate U.S. Holders are taxable at the preferential rates applicable to long-term capital gain. A non-U.S. corporation is treated as a qualified foreign corporation with respect to dividends it pays on shares (or depositary shares representing such shares) that are readily tradable on an established securities market in the U.S., such as the NYSE, where our ADSs are traded. Noncorporate U.S. Holders of ADSs should consult their tax advisers to determine whether these preferential rates may apply to dividends they receive and whether they are subject to any special rules that limit their ability to be taxed at these preferential rates.

Dividend income will be foreign-source and will include the amount of any R.O.C. taxes withheld thereon. Subject to applicable limitations and restrictions, which can vary depending upon the U.S. Holder’s circumstances (such as a requirement to satisfy certain minimum holding periods), R.O.C. taxes withheld from dividend distributions may be eligible for credit against the U.S. Holder’s U.S. federal income tax liability. Under certain Treasury regulations, in order for non-U.S. income taxes to be creditable the relevant non-U.S. income tax rules must be consistent with certain U.S. federal income tax principles, and we have not determined whether the R.O.C. income tax system meets these requirements. However, the Internal Revenue Service released notices that provide relief from certain of the provisions of the Treasury regulations described above for taxable years ending before the date that a notice or other guidance withdrawing or modifying the temporary relief is issued (or any later date specified in such notice or other guidance). The limitation on foreign taxes eligible for credit is calculated separately with respect to specific classes of income. In lieu of claiming a credit, U.S. Holders may, at their election, deduct otherwise creditable R.O.C. taxes in computing their taxable income, subject to generally applicable limitations. An election to deduct non-U.S. taxes instead of claiming foreign tax credits applies to all creditable non-U.S. taxes paid or accrued in the taxable year. The rules governing foreign tax credits are complex and U.S. Holders should consult their tax advisers regarding the creditability or deductibility of any R.O.C. tax generally (including under the Treasury regulations and notices mentioned above) and in their particular circumstances.

Certain *pro rata* distributions of Common Shares by us to all our shareholders (including ADS holders) will not be subject to U.S. federal income tax. Accordingly, these distributions will not give rise to U.S. federal income tax against which the R.O.C. tax imposed on these distributions may be credited. U.S. Holders should consult their tax advisers as to whether any R.O.C. tax imposed on such distributions may be creditable in general, and if so, the extent to which such R.O.C. tax may be creditable against their U.S. federal income tax on foreign-source income from other sources.

Capital Gains

A U.S. Holder generally will recognize U.S.-source capital gain or loss for U.S. federal income tax purposes on the sale or taxable exchange of our Common Shares or ADSs, which will be long-term capital gain or loss if our Common Shares or ADSs have been held by the U.S. Holder for more than one year. The amount of gain or loss will be equal to the difference between the U.S. Holder’s tax basis in our Common Shares or ADSs disposed of and the amount realized on disposition, in each case as determined in U.S. dollars. A U.S. Holder’s tax basis in our Common Shares or ADSs acquired for cash will generally equal the U.S. Holder’s cost of such Common Shares or ADSs. U.S. Holders should consult their tax advisers about the treatment of capital gains, which may be taxed at lower rates than ordinary income for noncorporate taxpayers, and capital losses, the deductibility of which may be limited.

The R.O.C. securities transaction tax imposed upon a sale of Common Shares (as discussed above under “R.O.C. Taxation—Securities Transaction Tax”) will not be creditable foreign tax for U.S. federal income tax purposes. However, such tax may reduce the amount realized by a U.S. Holder upon a disposition of our Common Shares.

Passive Foreign Investment Company Rules

We believe that we were not a passive foreign investment company (“PFIC”) for U.S. federal income tax purposes for our 2024 taxable year. However, since PFIC status depends upon the composition of a company’s income and assets and the market value of its assets (including its equity investments), there can be no assurance that we will not be a PFIC for any taxable year.

If we are a PFIC for any taxable year during which a U.S. Holder owns a Common Share or an ADS, certain adverse consequences could apply to that U.S. Holder, such as an increased U.S. federal income tax liability on (i) gains from dispositions of our Common Shares or ADSs (which generally would be treated as ordinary income) and (ii) certain “excess distributions”. Certain elections may be available that would result in alternative treatments if we are a PFIC for any taxable year. In addition, if we are a PFIC for any taxable year during which a U.S. Holder owns a Common Share or an ADS, such U.S. Holder will generally be required to file Internal Revenue Service Form 8621 with its annual U.S. federal income tax returns, subject to certain exceptions. Furthermore, if we are a PFIC for any taxable year in which we pay a dividend or the preceding taxable year, any preferential tax that may have otherwise applied in the case of noncorporate U.S. Holders will not be available. U.S. Holders should consult their tax advisers regarding the potential application of the PFIC rules to their ownership or disposition of our Common Shares or ADSs.

Information Reporting and Backup Withholding

Payments of dividends and sales proceeds that are made within the U.S. or through certain U.S.-related financial intermediaries generally are subject to information reporting, and may be subject to backup withholding, unless (i) the U.S. Holder is an exempt recipient (and establishes that fact if required to do so) or (ii) in the case of backup withholding, the U.S. Holder provides a correct taxpayer identification number and certifies that it is not subject to backup withholding.

The amount of any backup withholding from a payment to a U.S. Holder will be allowed as a credit against the U.S. Holder’s U.S. federal income tax liability and may entitle it to a refund, provided that the required information is timely furnished to the Internal Revenue Service.

DIVIDENDS AND PAYING AGENTS

Not applicable.

STATEMENT BY EXPERTS

Not applicable.

DOCUMENTS ON DISPLAY

We file annual reports on Form 20-F and furnish periodic reports on Form 6-K with the SEC. You can read and copy these reports and other information at the SEC’s Public Reference Room at 450 Fifth Street, N.W., Washington, D.C. 20549. You can also request copies of the documents, upon payment of a duplicating fee, by writing to the Public Reference Section of the SEC. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the public reference room. The reports and other information we file electronically with the SEC are also available to the public from the SEC’s website at <https://www.sec.gov>. Information about ASEH is also available to the public on our website at <https://www.aseglobal.com>.

SUBSIDIARY INFORMATION

Not applicable.

ANNUAL REPORT TO SECURITY HOLDERS

We intend to submit any annual report provided to security holders in electronic format as an exhibit to a current report on Form 6-K.

Item 11. Quantitative and Qualitative Disclosures about Market Risk

The derivative instruments used by us were to mitigate risks arising from ordinary business operations. Our risk management department monitored risks to mitigate risk exposures, and reported unsettled positions, transaction balances, and related gains or losses to our chief financial officer on monthly basis. See Note 34 to our consolidated financial statements included in this annual report for details.

Market Risk

Our exposure to financial market risks relates primarily to changes in foreign currency exchange rates. Gains or losses arising from fluctuations in foreign currency exchange rates of a variety of derivative financial instruments were approximately offset by those of hedged items. Interest rate risk was not significant as the cost of capital was expected to be fixed.

Interest Rate Risk. Our exposure to interest rate risks relates primarily to our borrowings with floating rates, which are normally incurred to support our corporate activities and capital expenditures. We utilized financing instruments with low interest rates and favorable terms to maintain low financing costs and adequate banking facilities, as well as to hedge interest rate risk.

For assets and liabilities with floating interest rates, a 100-basis point increase or decrease was used when reporting interest rate risk internally to key management personnel. If interest rates had been 100 basis points (1%) higher or lower and all other variables held constant, our profit before income tax for the year ended 2024 would have decreased or increased approximately by NT\$1,049.0 million (US\$32.0 million).

The tables below set forth information relating to our short-term and long-term bank loans as of December 31, 2024.

Expected Maturity Date

	Expected Maturity Date						Total	Fair Value
	2025	2026	2027	2028	2029	Thereafter		
	(in millions, except percentages)							
Short-term borrowings:								
Variable rate (NT\$)	14,273.0	-	-	-	-	-	14,273.0	14,273.0
Average interest rate	2.03%	-	-	-	-	-	2.03%	-
Fixed rate (NT\$)	3,800.0	-	-	-	-	-	3,800.0	3,800.0
Average interest rate	1.84%	-	-	-	-	-	1.84%	-
Variable rate (US\$)	325.4	-	-	-	-	-	325.4	325.4
Average interest rate	5.18%	-	-	-	-	-	5.18%	-
Fixed rate (US\$)	52.0	-	-	-	-	-	52.0	52.0
Average interest rate	6.24%	-	-	-	-	-	6.24%	-
Variable rate (RMB)	340.0	-	-	-	-	-	340.0	340.0
Average interest rate	2.63%	-	-	-	-	-	2.63%	-
Fixed rate (RMB)	20.0	-	-	-	-	-	20.0	20.0
Average interest rate	2.45%	-	-	-	-	-	2.45%	-
Variable rate (EUR)	8.2	-	-	-	-	-	8.2	8.2
Average interest rate	3.16%	-	-	-	-	-	3.16%	-
Fixed rate (EUR)	339.5	-	-	-	-	-	339.5	339.5
Average interest rate	3.54%	-	-	-	-	-	3.54%	-
Variable rate (HKD)	832.6	-	-	-	-	-	832.6	832.6
Average interest rate	5.42%	-	-	-	-	-	5.42%	-
Long-term borrowings:								
Variable rate (NT\$)	1,600.4	36,350.4	7,208.8	1,850.4	1,037.7	-	48,047.7	48,047.7
Average interest rate	2.04%	1.95%	2.24%	2.51%	2.74%	-	2.03%	-
Fixed rate (NT\$)	15,000.0	3,500.0	2,000.0	-	-	-	20,500.0	20,500.0
Average interest rate	0.88%	1.54%	2.16%	-	-	-	1.12%	-
Variable rate (US\$)	-	1,413.5	473.4	-	-	-	1,886.9	1,886.9
Average interest rate	-	4.84%	4.84%	-	-	-	4.84%	-
Fixed rate (US\$)	-	-	60.0	-	-	-	60.0	60.0
Average interest rate	-	-	3.90%	-	-	-	3.90%	-
Fixed rate (EUR)	2.0	2.0	2.0	-	-	-	6.0	6.0
Average interest rate	3.90%	3.90%	3.90%	-	-	-	3.90%	-
Variable rate (RMB)	487.5	287.5	86.1	90.4	105.5	1,405.0	2,462.0	2,462.0
Average interest rate	2.89%	2.14%	2.28%	2.77%	2.48%	0.80%	1.57%	-
Fixed rate (RMB)	-	-	2,678.7	-	-	-	2,678.7	2,678.7
Average interest rate	-	-	1.30%	-	-	-	1.30%	-

Foreign Currency Exchange Rate Risk. Our foreign currency exposure gives rise to market risk associated with exchange rate movements against the NT dollar, our functional currency. Currently, the majority of our revenues are denominated in U.S. dollars, with a portion denominated in NT dollars and Japanese yen. Our costs of revenues and operating expenses are incurred in several currencies, primarily in NT dollars, U.S. dollars, RMB, Japanese yen, Korean won, and Euro, as well as, to a lesser extent, Singapore dollars and Malaysian ringgit and Polish zloty. In addition, a substantial portion of our capital expenditures, primarily for the purchase of equipment, has been, and is expected to continue to be, denominated primarily in U.S. dollars with the remainder in Japanese yen. The majority of our borrowings are denominated in NT dollars, U.S. dollars, EUR, HKD, and RMB. Fluctuations in exchange rates, primarily among the U.S. dollar and Japanese yen against the NT dollar, RMB, and EUR, will affect our costs and operating margins and could result in exchange losses and increased costs in NT dollar and other local currency terms.

We use 1% fluctuation when reporting foreign currency exchange rate risk internally to key management personnel and it represents management's assessment of reasonably possible changes in foreign currency exchange rates. The sensitivity analysis included financial assets and liabilities and intercompany receivables and payables within the Group. The changes in profit before income tax due to a 1% change in U.S. dollar and Japanese yen against NT dollar, RMB, and EUR would be NT\$274.0 million (US\$8.4 million) for the year ended December 31, 2024. Hedging contracts and hedged items have been considered while measuring the changes in profit before income tax. The abovementioned sensitivity analysis mainly focused on the foreign currency monetary items at each balance sheet date. As the year-end exposure did not reflect the exposure for the year ended December 31, 2024, the abovementioned sensitivity analysis was unrepresentative.

To protect against reductions in value and the volatility of future cash flows caused by changes in foreign currency exchange rates, we entered into a variety of nonderivative financial instruments and derivative financial instruments to minimize the impact of foreign currency fluctuations on our results of operations. Despite these hedging and mitigating techniques, fluctuations in exchange rates have affected, and may continue to affect, our financial condition and results of operations.

Our hedging strategy was to lift borrowings denominated in foreign currencies to avoid exchange rate exposure from its investments in equity instruments denominated in foreign currencies (recognized under the line item of financial assets at FVTPL) and net investment in foreign subsidiary, USIFR, which has EUR as its functional currency. Those transactions were designated as fair value hedges and a hedge of net investment in foreign operation, respectively. Hedge adjustments were made to totally offset the foreign exchange gains or losses from those equity instruments denominated in foreign currencies and foreign operations when they were evaluated based on the exchange rates on each balance sheet date. The hedge ineffectiveness in these hedging relationships arose from the material difference between the notional amounts of borrowings denominated in foreign currencies and the original investments in equity instruments denominated in foreign currencies and net investment in foreign operations. No other source of ineffectiveness is expected to emerge from these hedging relationships.

The table below sets forth our outstanding forward exchange contracts and swap contracts, for which the expected maturity dates are in 2025, in aggregate terms by type of contract as of December 31, 2024.

	<u>Forward Exchange Contracts</u>	<u>Swap Contracts</u>
Buy US\$ against NT\$		
Notional Amount	US\$110.0 million	US\$3,496.0 million
Weighted Average Strike Price	US\$/NT\$32.227	US\$/NT\$31.047
Fair Value	US\$1.978 million	US\$130.029 million
Buy US\$ against RMB		
Notional Amount	US\$18.0 million	US\$114.0 million
Weighted Average Strike Price	US\$/RMB7.250	US\$/RMB7.287
Fair Value	Negative US\$0.170 million	Negative US\$1.610 million
Buy US\$ against EUR		
Notional Amount	US\$6.0 million	-
Weighted Average Strike Price	US\$/EUR0.906	-
Fair Value	US\$0.296 million	-
Buy US\$ against HKD		
Notional Amount	-	US\$2.9 million
Weighted Average Strike Price	-	US\$/HKD7.769
Fair Value	-	Negative US\$0.003 million
Buy US\$ against JPY		
Notional Amount	-	US\$7.0 million
Weighted Average Strike Price	-	US\$/JPY148.035
Fair Value	-	US\$0.349 million
Buy US\$ against MXN		
Notional Amount	-	US\$45.0 million
Weighted Average Strike Price	-	US\$/MXN20.527
Fair Value	-	US\$0.226 million
Buy TND against EUR		
Notional Amount	TND24.0 million	-
Weighted Average Strike Price	TND/EUR0.295	-
Fair Value	Negative US\$0.048 million	-
Buy JPY against RMB		
Notional Amount	JPY165.0 million	-
Weighted Average Strike Price	JPY/RMB0.048	-
Fair Value	Negative US\$0.036 million	-
Buy NTD against RMB		
Notional Amount	NTD44.5 million	-
Weighted Average Strike Price	NTD/RMB0.225	-
Fair Value	Negative US\$0.030 million	-

	<u>Forward Exchange Contracts</u>	<u>Swap Contracts</u>
Sell US\$ against EUR		
Notional Amount	US\$3.2 million	-
Weighted Average Strike Price	US\$/EUR0.948	-
Fair Value	Negative US\$0.040 million	-
Sell US\$ against NT\$		
Notional Amount	US\$81.6 million	US\$254.4 million
Weighted Average Strike Price	US\$/NT\$32.518	US\$/NT\$32.312
Fair Value	Negative US\$0.683 million	Negative US\$2.289 million
Sell US\$ against RMB		
Notional Amount	US\$436.0 million	-
Weighted Average Strike Price	US\$/RMB7.276	-
Fair Value	US\$5.514 million	-
Sell US\$ against JPY		
Notional Amount	US\$54.0 million	-
Weighted Average Strike Price	US\$/JPY154.301	-
Fair Value	Negative US\$0.451 million	-
Sell US\$ against MYR		
Notional Amount	US\$6.0 million	-
Weighted Average Strike Price	US\$/MYR4.460	-
Fair Value	Negative US\$0.025 million	-
Sell US\$ against SGD		
Notional Amount	US\$13.1 million	-
Weighted Average Strike Price	US\$/SGD1.336	-
Fair Value	Negative US\$0.225 million	-
Sell US\$ against KRW		
Notional Amount	US\$7.0 million	US\$69.0 million
Weighted Average Strike Price	US\$/KRW1438.763	US\$/KRW1434.819
Fair Value	Negative US\$0.147 million	Negative US\$1.586 million

Other Market Risk. We are exposed to equity price risk through investments in financial assets at FVTPL and financial assets at FVTOCI. The value of these investments may fluctuate based on various factors including prevailing market conditions. Moreover, the fair value of investments in unquoted securities may be significantly different from their carrying value. As of December 31, 2024, our investments in quoted shares, open-end mutual funds, unquoted shares, private-placement funds, convertible notes, preferred shares with warrants, and documentary investment agreement, classified as financial assets at FVTPL were NT\$6,291.2 million (US\$191.9 million). As of December 31, 2024, our investments in equity instruments at FVTOCI were NT\$12,933.7 million (US\$394.4 million). If equity price was 1% higher or lower, profit before income tax for the year ended December 31, 2024 would have increased or decreased approximately by NT\$53.0 million (US\$1.6 million) and other comprehensive income before income tax would have increased or decreased approximately by NT\$129.0 million (US\$3.9 million) for the same year. Furthermore, fluctuations in gold prices may also affect the price at which we have been able to purchase gold wire. How this will impact the results of our operations depends on whether such costs can be transferred to our customers.

Item 12. Description of Securities Other Than Equity Securities

DEBT SECURITIES

Not applicable.

WARRANTS AND RIGHTS

Not applicable.

OTHER SECURITIES

Not applicable.

AMERICAN DEPOSITARY SHARES

Depository Fees and Charges

As an ADS holder, you will be required to pay the following fees under the terms of the deposit agreement:

Service	Fees
Issuance of ADSs (e.g., an issuance upon a deposit of shares, upon a change in ADS(s)-to-Common Share(s) ratio, or for any other reason), excluding issuances as a result of distributions of Common Shares	Up to U.S. \$5.00 per 100 ADSs issued
Cancellation of ADSs (e.g., a cancellation of ADSs for delivery of deposited Common Shares, upon a change in the ADS(s)-to-Common Share(s) ratio, or for any other reason)	Up to U.S. \$5.00 per 100 ADSs cancelled
Distribution of cash dividends or other cash distributions (e.g., upon a sale of rights and other entitlements)	Up to U.S. \$5.00 per 100 ADSs held
Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions, or (ii) exercise of rights to purchase additional ADSs	Up to U.S. \$5.00 per 100 ADSs held
Distribution of securities other than ADSs or rights to purchase additional ADSs (e.g., upon a spin-off)	Up to U.S. \$5.00 per 100 ADSs held
ADS Services	Up to U.S. \$5.00 per 100 ADSs held on the applicable record date(s) established by the Depositary

As an ADS holder you will also be responsible to pay certain charges such as:

- taxes (including applicable interest and penalties) and other governmental charges;
- the registration fees as may from time to time be in effect for the registration of Common Shares on the share register and applicable to transfers of Common Shares to or from the name of the custodian, the Depositary or any nominees upon the making of deposits and withdrawals, respectively;
- certain cable, telex, and facsimile transmission and delivery expenses;
- the expenses and charges incurred by the Depositary in the conversion of foreign currency;
- the fees and expenses incurred by the Depositary in connection with compliance with exchange control regulations and other regulatory requirements applicable to Common Shares, ADSs and ADRs; and
- the fees and expenses incurred by the Depositary, the custodian, or any nominee in connection with the servicing or delivery of deposited property.

ADS fees and charges payable upon (i) the issuance of ADSs and (ii) cancellation of ADSs will be payable by the person to whom the ADSs are so issued (in the case of ADS issuances) and by the person whose ADSs are being cancelled (in the case of ADS cancellations). In the case of ADSs issued by the Depositary into DTC or held via DTC, the ADS issuance and cancellation fees and charges will be payable by the DTC participant(s) receiving the ADSs or whose ADSs are being cancelled, as the case may be, on behalf of the beneficial owner(s) and will be charged by the DTC participant(s) to the account(s) of the applicable beneficial owner(s) in accordance with the procedures and practices of the DTC participant(s) as in effect at the time. ADS fees and charges in respect of distributions and the ADS service fee are charged to the holders as of the applicable ADS record date. In the case of distributions of cash, the amount of the applicable ADS fees and charges is deducted from the funds being distributed. In the case of (i) distributions other than cash and (ii) the ADS service fee, holders as of the ADS record date will be invoiced for the amount of the ADS fees and charges and such ADS fees and charges may be deducted from distributions made to holders of ADSs. For ADSs held through DTC, the ADS fees and charges for distributions other than cash and the ADS service fee may be deducted from distributions made through DTC and may be charged to the DTC participants in accordance with the procedures and practices prescribed by DTC and the DTC participants in turn charge the amount of such ADS fees and charges to the beneficial owners for whom they hold ADSs.

In the event of refusal to pay the Depositary fees, the Depositary may, under the terms of the Deposit Agreement, refuse the requested service until payment is received or may set off the amount of the Depositary fees from any distribution to be made to the ADS holder. Certain of the depositary fees and charges (such as the ADS services fee) may become payable shortly after the Closing Date. Note that the fees and charges you may be required to pay may vary over time and may be changed by us and by the Depositary. You will receive prior notice of such changes. The Depositary may reimburse us for certain expenses incurred by us in respect of the ADR program, by making available a portion of the ADS fees charged in respect of the ADR program or otherwise, upon such terms and conditions as we and the Depositary agree from time to time.

Depositary Payments

In 2024, we received direct reimbursement of US\$2,702,989.23 (net of U.S. withholding tax) from Citibank, N.A., the depositary bank for our ADR programs.

PART II

Item 13. Defaults, Dividend Arrearages and Delinquencies

Not applicable.

Item 14. Material Modifications to the Rights of Security Holders and Use of Proceeds

Not applicable.

Item 15. Controls and Procedures

Disclosure Controls and Procedures

As of December 31, 2024, our management, with the participation of our principal executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as defined in Rules 13a-15I and 15(d)-15(e) under the Exchange Act. Our management necessarily applied its judgment in assessing the costs and benefits of such controls and procedures, which by their nature can provide only reasonable assurance regarding management's control objectives. Based on this evaluation, our principal executive officer and chief financial officer concluded that our disclosure controls and procedures are effective for recording, processing, summarizing and reporting, within the time periods specified in the SEC's rules and forms, for information required to be disclosed in the reports we file or submit under the Exchange Act, and for accumulating and communicating such information to our management, including our principal executive officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) and 15d-15(f) promulgated under the Securities Exchange Act of 1934.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2024. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework (2013)*.

Based on this assessment, management concluded that, as of December 31, 2024, our internal control over financial reporting is effective based on those criteria.

Our evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2024 excluded the internal control over financial reporting of CHE and ASEPCAYMAN, because CHE and ASEPCAYMAN were acquired on August 1, 2024, and whose financial statements constituted less than 1% of net and total assets, operating revenues, and profit of the respective consolidated financial statement amounts as of and for the year ended December 31, 2024.

Our independent registered public accounting firm, Deloitte & Touche, assessed the effectiveness of our internal control over financial reporting. Deloitte & Touche has issued an attestation report, which is included below.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of
ASE Technology Holding Co., Ltd.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of ASE Technology Holding Co., Ltd. (a Republic of China corporation) and its subsidiaries (collectively, the “Group”) as of December 31, 2024, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Group maintained, in all material respects, effective internal control over financial reporting as of December 31, 2024, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2024, of the Group and our report dated March 26, 2025, expressed an unqualified opinion on those consolidated financial statements.

As described in Management’s Annual Report on Internal Control Over Financial Reporting, management excluded from its assessment the internal control over financial reporting at ASEP Cayman Ltd. and its subsidiaries (collectively, the “ASEPCAYMAN”) and ASE Cheonan, Inc. (the “CHE”), which were acquired on August 1, 2024, and whose financial statements constituted less than 1% of net and total assets, operating revenues, and profit of the respective consolidated financial statement amounts as of and for the year ended December 31, 2024. Accordingly, our audit did not include the internal control over financial reporting at ASEPCAYMAN and CHE.

Basis for Opinion

The Group’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Group’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Group in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Deloitte & Touche
Taipei, Taiwan
Republic of China
March 26, 2025

Changes in Internal Control over Financial Reporting

Other than as explained below, there has been no change in our internal control over financial reporting that occurred during the period covered by this annual report that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting during 2024.

On August 1, 2024, we acquired control of CHE and ASEPCAYMAN. As a result of the timing, breadth and complexity of the transaction, we increased the level of resources devoted to the application of our internal processes and controls to the financial closing process. In 2025, we expect the following will occur with respect to these acquired businesses: (1) CHE and ASEPCAYMAN will continue the transition to our accounting and reporting policies and processes, (2) CHE and ASEPCAYMAN will assess the design and operating effectiveness of their internal control system based on criteria established in *Internal Control- Integrated Framework (2013)* issued by the COSO, and (3) CHE's and ASEPCAYMAN's control systems and processes will be integrated into our framework of internal controls over financial reporting. These actions may precipitate changes in our processes or controls.

Item 16. [Reserved]

Item 16A. Audit Committee Financial Expert

Our board of directors determined that Shen-Fu Yu, Mei-Yueh Ho, and Wen-Chyi Ong are audit committee financial experts as defined under the applicable rules of the SEC issued pursuant to Section 407 of the Sarbanes-Oxley Act of 2002 and are independent for the purposes of Rule 10A-3 of the Exchange Act.

Item 16B. Code of Ethics

We have adopted a Code of Business Conduct and Ethics (the "Code of Ethics"), which satisfies the requirements of Item 16B of Form 20-F and applies to all employees, officers, supervisors, and directors of our Company and subsidiaries, including our principal executive officer, chief financial officer, and principal accounting officer. The Code of Ethics contains the policies with respect to anti-corruption, fair competition, anti-money laundering, whistleblowing, and regulatory compliance. The robust and effective policies and procedures have been built in the Code of Ethics to enable us to persistently maintain high ethical standards of business conduct. We have continued to implement the Code of Ethics through promoting awareness and educational activities among our employees, officers, supervisors, and directors of our Company and subsidiaries in daily operation. For further details on the Code of Ethics, please refer to our website at https://ir.aseglobal.com/html/ir_doc.php

Item 16C. Principal Accountant Fees and Services

Policy on Pre-Approval of Audit and Non-Audit Services of Independent Registered Public Accounting Firm

Our audit committee pre-approves all audit and non-audit services provided by our independent registered public accounting firm, including audit services, audit-related services, tax services and other services, on a case-by-case basis.

Independent Registered Public Accounting Firm's Fees

The following table sets forth the aggregate fees by categories specified below in connection with certain professional services rendered by Deloitte & Touche and its network of member firms and their related entities.

	Year Ended December 31,		
	2023	2024	
	NT\$	NT\$	US\$
	(in thousands)		
Audit fees ⁽¹⁾	187,606.9	216,303.1	6,596.6
Audit-related fees ⁽²⁾	3,274.1	4,053.6	123.6
Tax fees ⁽³⁾	33,432.5	33,625.2	1,025.5
All other fees ⁽⁴⁾	17,009.3	8,951.4	273.0
Total	241,322.8	262,933.3	8,018.7

- (1) Audit fees are defined as the standard audit and review work that needs to be performed each year in order to issue an opinion on our consolidated financial statements and to issue reports on the local statutory financial statements. It also includes services that can only be provided by our auditor such as statutory audits required by the Tax Bureau of the R.O.C. and the Customs Bureau of the R.O.C., consents, and comfort letters and any other audit services required for SEC or other regulatory filings.
- (2) Audit-related fees consist of assurance and related services by Deloitte & Touche and its network of member firms and their related entities that are reasonably related to the performance of the audit or review of our financial statements and are not reported above under Audit Fees. The service for the fees disclosed under this category relate to cash capital increase and bonds offering.
- (3) Tax fees consist of professional services rendered by Deloitte & Touche and its network of member firms and their related entities for tax compliance and tax advice. The services for the fees disclosed under this category include tax return preparation and technical tax advice.
- (4) Other fees primarily consist of a risk management advisory fee and a business operation and process advisory fee, among others.

Item 16D. Exemptions from the Listing Standards for Audit Committees

Not applicable.

Item 16E. Purchases of Equity Securities by the Issuer and Affiliated Purchasers

Neither we, nor the affiliated purchaser of the Company, has purchased any of our Common Shares during 2024.

Item 16F. Change in Registrant's Certifying Accountant

Not applicable.

Item 16G. Corporate Governance

As a company listed on the NYSE, we are subject to certain corporate governance rules of the NYSE. The application of the NYSE's corporate governance rules is limited for foreign private issuers, recognizing that they must comply with domestic requirements. As a foreign private issuer, we must comply with the following NYSE corporate governance rules: 1) satisfy the audit committee requirements of the SEC; 2) the principal executive officer must promptly notify the NYSE in writing upon becoming aware of any material non-compliance with applicable NYSE corporate governance rules; 3) submit annual and interim affirmations to the NYSE regarding compliance with applicable NYSE corporate governance requirements; and 4) provide a brief description of any significant differences between our corporate governance practices and those required of U.S. companies under the NYSE listing standards. The table below sets forth the significant differences between our corporate governance practices and those required of U.S. companies under the NYSE listing standards.

New York Stock Exchange Corporate Governance Rules Applicable to U.S. Companies	Description of Significant Differences Between Our Governance Practices and the NYSE Corporate Governance Rules Applicable to U.S. Companies
Director independence	
Listed companies must have a majority of independent directors, as defined under the NYSE listing standards.	Three members of our board of directors are independent as defined in Rule 10A-3 under the Exchange Act. We do not assess the independence of our directors under the independence requirements of the NYSE listing standards. Pursuant to relevant laws and regulations of the R.O.C., we have three independent directors on our board of directors that were elected through the candidate nomination system at our annual general shareholders' meeting on June 26, 2024.
To empower non-management directors to serve as a more effective check on management, the non-management directors of each company must meet at regularly scheduled executive sessions without management.	All of our directors attend the meetings of the board of directors. Our non-management directors do not meet at regularly scheduled executive sessions without management. The R.O.C. Company Law does not require companies incorporated in the R.O.C. to have their non-management directors meet at regularly scheduled executive sessions without management.
Nominating/Corporate governance committee	
Listed companies must have a nominating/corporate governance committee composed entirely of independent directors and governed by a written charter that provides for certain responsibilities of the committee set out in the NYSE listing standards.	We do not have a nominating/corporate governance committee. The R.O.C. Company Law does not require companies incorporated in the R.O.C. to have a nominating/corporate governance committee. Currently, our board of directors performs the duties of a corporate governance committee and regularly reviews our corporate governance principles and practices. In addition, our chief administration officer was appointed as the corporate governance officer by the board of directors to facilitate the operation of the board of directors.
	The R.O.C. Company Law requires that directors be elected by shareholders. Under R.O.C. laws and regulations, companies that have independent directors are required to adopt a candidate nomination system for the election of independent directors. Our three independent directors were elected through the candidate nomination system provided in our Articles of Incorporation. However, starting from 2021, the directors (including independent directors) of the company listed on the TWSE or the Taipei Exchange shall be nominated by adopting the candidate nomination system.
Compensation committee	
Listed companies must have a compensation committee composed entirely of independent directors and governed by a written charter that provides for certain responsibilities of the committee set out in the NYSE listing standards.	We have a compensation committee as required by the regulations promulgated by the FSC. The charter of such committee contains similar responsibilities as those provided under NYSE listing standards.
In addition to any requirement of Rule 10A-3(b)(1), all compensation committee members must satisfy the independence requirements for independent directors set out in the NYSE listing standards.	We do not assess the independence of our compensation committee member under the independence requirements of the NYSE listing standards but adopt the independence standard as promulgated under the R.O.C. Regulations Governing the Appointment and Exercise of Powers by the Remuneration Committee of a Company Whose Stock is Listed on the TWSE or the Taipei Exchange.
Audit committee	
Listed companies must have an audit committee that satisfies the requirements of Rule 10A-3 under the Exchange Act.	We have an audit committee that satisfies the requirements of Rule 10A-3 under the Exchange Act and the requirements under the R.O.C. Securities and Exchange Act.
The audit committee must have a minimum of three members. In addition to any requirement of Rule 10A-3(b)(1), all audit committee members must satisfy the independence requirements for independent directors set out in the NYSE listing standards.	We currently have three members on our audit committee. Our audit committee members satisfy the independence requirements of Rule 10A-3 under the Exchange Act. We do not assess the independence of our audit committee member under the independence requirements of the NYSE listing standards.

**New York Stock Exchange
Corporate
Governance Rules
Applicable to U.S. Companies**

**Description of Significant Differences Between Our
Governance Practices and the NYSE Corporate
Governance Rules Applicable to U.S. Companies**

The audit committee must have a written charter that provides for the duties and responsibilities set out in Rule 10A-3 and addresses certain other matters required by the NYSE listing standards.

Our audit committee charter provides for the audit committee to assist our board of directors in its oversight of (i) the integrity of our financial statements, (ii) the qualifications, independence, and performance of our independent auditor and (iii) our compliance with legal and regulatory requirements and provides for the duties and responsibilities set out in Rule 10A-3. Our audit committee charter does not address all the matters required by the NYSE listing standards beyond the requirements of Rule 10A-3.

Because the appointment and retention of our independent auditor are the responsibility of our entire board of directors under R.O.C. laws and regulations, our audit committee charter provides that the audit committee shall make recommendations to the board of directors with respect to these matters.

Each listed company must have an internal audit function.

We have an internal audit function. Under the R.O.C. Regulations for the Establishment of Internal Control Systems by Public Companies, a public company is required to set out its internal control systems in writing, including internal audit implementation rules, which must be approved by the board of directors. Our entire board of directors and the principal executive officer are responsible for the establishment of the internal audit functions, compliance with the internal audit implementation rules, and oversight of our internal control systems, including the appointment and retention of our independent auditor.

Equity compensation plans

Shareholders must be given the opportunity to vote on all equity compensation plans and material revisions thereto, except for employment inducement awards, certain grants, plans, and amendments in the context of mergers and acquisitions, and certain specific types of plans.

The board of directors has authority under R.O.C. laws and regulations to approve (i) the distribution of employee compensation and (ii) employee stock option plans by a majority vote of the board of directors at a meeting where at least two-thirds of all directors are present and to grant options to employees pursuant to such plans, provided that shareholders' approval is required if the exercise price of an option would be less than the closing price of the Common Shares on the TWSE on the grant date of the option, subject to the approval of the Securities and Futures Bureau of the FSC, and to approve treasury stock programs and the transfer of shares to employees under such programs by a majority vote of the board of directors in a meeting where at least two-thirds of all directors are present.

Corporate governance guidelines

Listed companies must adopt and disclose corporate governance guidelines.

We have adopted the corporate governance best practice principles in accordance with the Corporate Governance Best Practice Principles for TWSE and Taipei Exchange Listed Companies promulgated by the TWSE and the Taipei Exchange, and we provide an explanation of the differences between our practice and the principles, if any, in our R.O.C. annual report. We have posted our corporate governance best practice principles on our website. Also, we have a dedicated section on our website to disclose the relevant information and inform investors how to access such principles.

Code of ethics for directors, officers, and employees

Listed companies must adopt and disclose a code of business conduct and ethics for directors, officers, and employees, and promptly disclose any waivers of the code for directors or executive officers.

We have adopted a code of ethics that satisfies the requirements of Item 16B of Form 20-F and applies to all employees, officers, supervisors and directors of our company and our subsidiaries and will disclose any waivers of the code as required by Item 16B of Form 20-F. We have posted our code of ethics on our website.

Description of significant differences

Listed foreign private issuers must disclose any significant ways in which their corporate governance practices differ from those followed by domestic companies under NYSE listing standards.

This table contains the significant differences between our corporate governance practices and those required of U.S. companies under the NYSE listing standards.

**New York Stock Exchange
Corporate
Governance Rules
Applicable to U.S. Companies**

**Description of Significant Differences Between Our
Governance Practices and the NYSE Corporate
Governance Rules Applicable to U.S. Companies**

Principal Executive Officer certification

Each listed company principal executive officer must certify to the NYSE each year that he or she is not aware of any violation by the company of NYSE corporate governance listing standards, qualifying the certification to the extent necessary.

As a foreign private issuer, we are not required to comply with this rule; however, our principal executive officer provides certifications under Sections 302 and 906 of the Sarbanes-Oxley Act.

Each listed company principal executive officer must promptly notify the NYSE in writing after any executive officer of the listed company becomes aware of any material non-compliance with any applicable provisions of Section 303A.

We intend to comply with this requirement.

Each listed company must submit an executed Written Affirmation annually to the NYSE. In addition, each listed company must submit an interim Written Affirmation each time a change occurs to the board or any of the committees subject to Section 303A. The annual and interim Written Affirmations must be in the form specified by the NYSE.

We have complied with this requirement to date and intend to continue to comply going forward.

Website

Listed companies must have and maintain a publicly accessible website.

We have and maintain a publicly accessible website.

Item 16H. Mine Safety Disclosure

Not applicable.

Item 16I. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

Item 16J. Insider Trading Policies

We have adopted insider trading policies and procedures (Administrative and Practice Procedures to Prevent Insider Trading) governing the purchase, sale, and other disposition of our securities by directors, senior management, and employees, implementing procedures reasonably designed to promote compliance with applicable insider trading laws, rules and regulations, and any applicable listing standards. A copy of Administrative and Practice Procedures to Prevent Insider Trading is attached as Exhibit 11 to this annual report.

Item 16K. Cybersecurity

Cybersecurity risk management is an integral part of our overall risk management program. Our board of directors has overall oversight responsibility for our risk management, and delegates cybersecurity risk management oversight to the information security management committee established by the CSC. The information security management committee is responsible for overall information security across all subsidiaries. Our vice chairman, who has participated in yearly professional courses relating to information security, has been appointed the chair of the committee, which is dedicated to enhancing information security, preventing and mitigating information security threats and risks by developing strategic plans for information security, establishing benchmarks for information security maturity assessments, promoting information security risk management in our subsidiaries, and coordinating internal and external technologies, resources and information. Our chief administrative officer and chief corporate governance officer, who previously taught technology law at the college-level, has been appointed as the chief information security officer of the committee, and assumes responsibility for establishing the information security management framework that covers conducting regular reviews with all subsidiaries and implementing incident response plans. The information security management committee provides a status report to the board of directors in the last quarter of each fiscal year. Our cybersecurity team maintains numerous active industry-recognized cyber certifications, including Certified Information Security Manager (CISM), Certified Information Systems Security Professional (CISSP), and ISO 27001 Lead Auditor.

In addition, our Corporate CSR division, established under the CSC, is responsible for promoting and executing information security-related work across ASE, SPIL and USI Group entities, and each subsidiary appoints its information security team as members of the committee, tasked with implementing information security operations as resolved by the information security management committee. We hold quarterly information security management committee meetings to report and discuss the progress of our information security work and invite external experts to share insights on information security trends and topics of concern.

We set a threshold for material information security incidents by following relevant regulations promulgated by the FSC. On an annual basis, our cybersecurity team engages a third-party company to conduct regular cybersecurity audit and assessments, such as external audit, vulnerability scanning, and penetration testing to ensure that our network and information comply with safety standards. In addition to managing operational risks from the perspective of corporate governance, we prioritize elevating employees' cybersecurity awareness and enhancing organizational capabilities. All employees are mandated to complete Proprietary Information Protection ("PIP") cybersecurity educational training, including training covering topics such as policy adherence, management frameworks, and control measures. Additionally, periodic social engineering email drills have been conducted to enhance employees' awareness of email-based social engineering attacks. We have gradually introduced management mechanisms to foster active participation in cybersecurity initiatives, such as cybersecurity meetings, educational trainings, incident management, confidential file labeling, antivirus/software security, and other cybersecurity-related projects in a systematic manner. Regular monitoring and audits serve as an extension of our management scope, with compliance integrated into our employees' key performance indicators to mitigate risks such as penalties, legal liabilities, and disruptions to business operations.

In 2020, initiated by the information security management committee of the CSC, information security committees of our subsidiaries worked together to integrate and strengthen the information security protection of each subsidiary. The committees also set up an information security risk alert system, through which we could conduct on-site operational inspections to minimize information security risks by hiring third-party experts. In addition, our major subsidiaries have obtained ISO 27001 certification (for information security management system) and ISO 22301 certification to strengthen crisis management and disaster response. In addition, our Kaohsiung facility has been facing accelerating digital transition and is the first semiconductor assembly and testing facility in the world to receive the ISO 21434 international automotive network security standard certification and has passed the mobile communication security certification standard and obtained the GSMA certification. We also have established management procedures for the reporting and handling of information security incidents which allow employees to report any security incidents to ensure prompt handling that will be followed by efficient responses in order to mitigate information security risks. In addition, we conduct an annual disaster recovery drill to mitigate the risk of service disruptions caused by impacts from major crisis events to our information systems. All employees participate in our annual proprietary information protection training courses, which include training on information security policy, management framework, and control measures.

Furthermore, we employ third-party service experts to conduct an annual audit and review of our information security performance. In the event of a sudden external cyberattack, our on-site safety teams would immediately hold a meeting to share information and discuss responses and countermeasures; external experts would be invited to join the meeting to conduct reviews and analyses if necessary.

In addition to focusing on information security technologies and capabilities of the semiconductor industry and high-tech manufacturing, in 2021, we joined the SEMI to jointly develop and launch the SEMI E187- Specification for Cybersecurity of Fab Equipment.

In terms of trade secrets management, we continuously train our employees to enhance the protection of trade secrets and mitigate the risk of infringement. Third-party service providers are required to strictly abide by our cybersecurity requirements, and are required to sign additional confidentiality or privacy agreements when necessary. Our management team provides regular reports to the board of directors on the progress of the management plan and its implementation, and sets forth improvement measures based on the board of directors' recommendations at least once a year. We believe that our processes provide us with a comprehensive assessment of potential cyber threats, including those risks arising from threats associated with third-party service providers.

In 2024, we did not identify any cybersecurity threats that have materially affected or are reasonably likely to materially affect our business strategy, results of operations, or financial condition. However, despite our efforts, we cannot eliminate all risks from cybersecurity threats, or provide assurances that we have not experienced an undetected cybersecurity incident. While we actively take measures to manage information technology security risks, there can be no assurance that these measures will be sufficient to mitigate all potential risks to our system, networks, and data. For more information about these risks, see "Risk Factors – Cyber-attacks could harm our business, financial condition, and results of operations."

PART III

Item 17. Financial Statements

The Company has elected to provide financial statements and related information pursuant to Item 18.

Item 18. Financial Statements

See the consolidated financial statements starting on page F-1 of this annual report.

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<u>Consolidated Financial Statements of ASE Technology Holding Co., Ltd. and Subsidiaries</u>	F-1
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Item 19. Exhibits

1. [Articles of Incorporation of the Registrant \(English translation\) \(incorporating all amendments as of June 26, 2024\) \(incorporated by reference to Exhibit 4.1 to our registration statement on Form S-8 \(File No. 333-281564\) filed on August 15, 2024\).](#)
2.
 - (a) [Deposit Agreement dated April 30, 2018 by and among ASE Technology Holding Co., Ltd., a company organized under the laws of the Republic of China and previously known as "ASE Industrial Holding Co., Ltd.," Citibank, N.A., as Depositary, and the Holders and Beneficial Owners of American Depositary Shares issued thereunder \(incorporated by reference to Exhibit 2\(a\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2019 filed on March 31, 2020, as amended\).](#)
 - (b) [Description of Securities \(incorporated by reference to Exhibit 2\(b\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2021 filed on March 29, 2022\).](#)
4.
 - (a) ^Asset Purchase Agreement dated July 3, 1999 among ASE (Chung Li) Inc., ASE Inc., Motorola Electronics Taiwan, Ltd. and Motorola, Inc. (incorporated by reference to Exhibit 10.2 to ASE Test's registration statement on Form F-3 (File No. 333-10892) filed on September 27, 1999 (the "ASE Test 1999 Form-3")).
 - (b) [Agreement dated June 5, 2002 among ASE \(Chung Li\) Inc., ASE Inc., Motorola Electronics Taiwan, Ltd. and Motorola, Inc. amending certain earn-out arrangements provided for in Section 2.09\(b\)\(ii\)\(D\) of the Asset Purchase Agreement dated July 3, 1999 among the same parties \(incorporated by reference to Exhibit 4\(b\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2002 filed on June 30, 2003\).](#)
 - (c) ^Stock Purchase Agreement dated July 3, 1999 among ASE Investment (Labuan) Inc., ASE Inc., Motorola Asia Ltd. and Motorola, Inc. relating to the purchase and sale of 100.0% of the common stock of Motorola Korea Ltd. (incorporated by reference to Exhibit 10.3 to the ASE Test 1999 Form F-3).
 - (d) [†BGA Immunity Agreement dated January 25, 1994 between ASE Inc. and Motorola, Inc. \(incorporated by reference to Exhibit 10.6 to the Form F-1\).](#)
 - (e) [†Amendment dated March 18, 2003 renewing the BGA Immunity Agreement dated January 25, 1994 between ASE Inc. and Motorola, Inc. \(incorporated by reference to Exhibit 4\(g\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2003 filed on June 30, 2004\).](#)
 - (f) [Consent dated June 9, 2004 to the Assignment of the BGA Immunity Agreement between ASE Inc. and Motorola, Inc. dated January 25, 1994 \(incorporated by reference to Exhibit 4\(h\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2003 filed on June 30, 2004\).](#)
 - (g) [Asset Purchase Agreement by and among Flextronics Manufacturing \(M\) Sdn. Bhd., as Buyer, ASE Electronics \(M\) Sdn. Bhd., as Company, dated October 3, 2005 \(incorporated by reference to Exhibit 4\(g\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2005 filed on June 19, 2006\).](#)
 - (h) [Joint Venture Agreement dated July 14, 2006 among ASE and Powerchip Semiconductor Corp. relating to the establishment of, and our investment of 60.0% in, PowerASE \(incorporated by reference to Exhibit 4\(r\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2006 filed on June 25, 2007, as amended\).](#)

- (i) [Sale and Purchase Agreement dated January 11, 2007 among J&R Holding Limited and Seacoast Profits Limited relating to our acquisition of 100% of GAPT \(incorporated by reference to Exhibit 4\(s\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2006 filed on June 25, 2007, as amended\).](#)
- (j) [Equity Interests Transfer Agreement dated August 6, 2007 by and among NXP B.V., NXP Semiconductors Suzhou Ltd. and J&R Holding Limited relating to our acquisition of 60% of ASEN, our joint venture with NXP Semiconductors \(incorporated by reference to Exhibit 4\(j\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2008 filed on June 24, 2009\).](#)
- (k) [Scheme Implementation Agreement dated September 4, 2007 between ASE and ASE Test Limited relating to our acquisition of all the outstanding ordinary shares of, and the privatization of, ASE Test \(incorporated by reference to Appendix A to Exhibit \(a\)\(1\) to Schedule 13E-3 \(File No. 005-55723\) filed by ASE Test on January 4, 2008\).](#)
- (l) [Syndicated Loan Agreement in the amount of NT\\$24,750 million dated March 3, 2008 among ASE, Citibank, N.A., Taipei Branch and the banks and banking institutions listed on Schedule I thereto relating to our acquisition of all the outstanding ordinary shares of, and the privatization of, ASE Test \(incorporated by reference to Exhibit 4\(l\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2008 filed on June 24, 2009\).](#)
- (m) [Equity Purchase Agreement dated March 17, 2008 between Aimhigh Global Corp., TCC Steel and J&R Holding Limited in respect of Weihai Aimhigh Electronic Co. Ltd. relating to our acquisition of 100% of ASE \(Weihai\), Inc. \(incorporated by reference to Exhibit 4\(m\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2008 filed on June 24, 2009\).](#)
- (n) [Syndicated Loan Agreement in the amount of US\\$200 million dated May 29, 2008 among ASE, Citibank, N.A., Taipei Branch and the banks and banking institutions listed on Schedule I thereto relating to our acquisition of all the outstanding ordinary shares of, and the privatization of, ASE Test \(incorporated by reference to Exhibit 4\(n\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2008 filed on June 24, 2009\).](#)
- (o) [Equity Purchase Agreement dated October 25, 2011 between PowerASE Technology, Inc. and certain shareholders of Lu-Chu Development Corporation relating to our acquisition of 72.97% of all the outstanding ordinary shares of Lu-Chu Development Corporation \(incorporated by reference to Exhibit 4\(o\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2011 filed on April 20, 2012\).](#)
- (p) [Equity Purchase Agreement dated October 25, 2011 between PowerASE Technology, Inc. and shareholders of Lu-Chu Development Corporation listed on Schedule I thereto relating to our acquisition of 9.3% of all the outstanding ordinary shares of Lu-Chu Development Corporation \(incorporated by reference to Exhibit 4\(p\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2011 filed on April 20, 2012\).](#)
- (q) [Equity Purchase Agreement dated November 17, 2011 between ASE Assembly & Test \(Shanghai\) Limited and Kunshan Ding Yao Real Estate Development Co., Ltd. relating to our acquisition of 10% equity of Shanghai Ding Hui Real Estate Development Co., Ltd. \(incorporated by reference to Exhibit 4\(q\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2011 filed on April 20, 2012\).](#)
- (r) [Equity Purchase Agreement dated January 13, 2012 between ASE and shareholders of Yang Ting Tech Co., Ltd. listed on Schedule I thereto relating to our acquisition of 61.63% of all the outstanding ordinary shares of Yang Ting Tech Co., Ltd. \(incorporated by reference to Exhibit 4\(r\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2011 filed on April 20, 2012\).](#)

- (s) [Equity Purchase Agreement dated January 13, 2012 between ASE and shareholders of Yang Ting Tech Co., Ltd. listed on Schedule I thereto relating to our acquisition of 38.37% of all the outstanding ordinary shares of Yang Ting Tech Co., Ltd. \(incorporated by reference to Exhibit 4\(s\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2011 filed on April 20, 2012\).](#)
 - (t) [Joint Share Exchange Agreement dated June 30, 2016 between ASE and SPIL relating to our proposed acquisition of 100% of the common shares and American depositary shares of SPIL \(incorporated by reference to Annex A to our registration statement on Form F-4 \(File No. 333-214752\) filed on November 22, 2016\).](#)
 - (u) [**Syndicated Loan Agreement in the amount of NT\\$90,000 million dated April 30, 2018 among ASE Technology Holding Co., Ltd. and Bank of Taiwan, Mega International Commercial Bank, Citibank, N.A., Taipei Branch, and banks and banking institutions listed on Schedule I thereto relating to our financing needs for the SPIL Acquisition \(incorporated by reference to Exhibit 4\(u\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2018 filed on April 26, 2019\).](#)
 - (v) [ASE Technology Holding Co., Ltd. 2021 Restricted Stock Awards Plan \(English translation\) \(incorporated by reference to Exhibit 99.1 to our registration statement on Form S-8 \(File No. 333-263006\) filed on February 25, 2022\).](#)
 - (w) [**Sale and Purchase Agreement dated December 1, 2021 between ASEH, Global Advanced Packaging Technology Limited, Alto Enterprises Limited, ASE Investment \(Kunshan\) Limited and ASE Mauritius Inc., as sellers, and Beijing Wise Road Asset Management Co., Ltd., as purchaser, relating to the disposal of shares and equity interests in GAPT Holding Limited and ASE \(Kunshan\) Inc. \(incorporated by reference to Exhibit 4\(w\) to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2021 filed on March 29, 2022\).](#)
 - (x) [ASE Technology Holding Co., Ltd. 2024 Restricted Stock Awards Plan \(English translation\) \(incorporated by reference to Exhibit 99.1 to our registration statement on Form S-8 \(File No. 333- 281564\) filed on August 15, 2024\).](#)
8. [*List of Subsidiaries](#)
11. [*Administrative and Practice Procedures to Prevent Insider Trading \(English translation\)](#)
- 12.
- (a) [*Certification of Jason C.S. Chang, required by Rule 13a-14\(a\) of the Exchange Act.](#)
 - (b) [*Certification of Joseph Tung, required by Rule 13a-14\(a\) of the Exchange Act.](#)
- 13.
- (a) [*Certification of the Principal Executive Officer required by Rule 13a-14\(b\) of the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code](#)
 - (b) [*Certification of the Chief Financial Officer required by Rule 13a-14\(b\) of the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code](#)
15. [*Consent of Deloitte & Touche](#)
97. [Compensation Recoupment Policy \(incorporated by reference to Exhibit 97 to our annual report on Form 20-F \(File No. 001-16125\) for the year ended December 31, 2023 filed on April 3, 2024\).](#)

101.INS* Inline XBRL Instance Document—this instance document does not appear in the Interactive Data File because its XBRL tags embedded within the Inline XBRL document

101.SCH* Inline XBRL Taxonomy Extension Schema Document

101.CAL* Inline XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF* Inline XBRL Taxonomy Extension Definition Linkbase Document

101.LAB* Inline XBRL Taxonomy Extension Label Linkbase Document

101.PRE* Inline XBRL Taxonomy Extension Presentation Linkbase Document

104 Cover Page Interactive Data File (Embedded in Inline XBRL and contained in Exhibits 101)

† Pursuant to Item 601(b)(10)(iv) of Regulation S-K promulgated by the Securities and Exchange Commission, certain portions of this exhibit have been redacted because they are both not material and the type that the Company treats as private or confidential

^ Filed in paper.

* Filed herewith.

** Schedules and annexes have been omitted.

The Company agrees to furnish to the SEC upon request a copy of any instrument which defines the rights of holders of long-term debt of the Company and its consolidated subsidiaries.

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing an annual report on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

ASE TECHNOLOGY HOLDING CO., LTD.

By: /s/ Joseph Tung

Name: Joseph Tung

Title: Chief Financial Officer

Date: March 27, 2025

**ASE Technology Holding Co., Ltd.
and Subsidiaries**

**Consolidated Financial Statements as of December 31,
2023 and 2024 and for the Years Ended December 31,
2022, 2023 and 2024, and
Report of Independent Registered Public
Accounting Firm**

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of
ASE Technology Holding Co., Ltd.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of ASE Technology Holding Co., Ltd. (a Republic of China corporation) and its subsidiaries (collectively, the “Group”) as of December 31, 2023 and 2024, the related consolidated statements of comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2024, and the related notes (collectively referred to as the “consolidated financial statements”) (all expressed in New Taiwan Dollars). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Group as of December 31, 2023 and 2024, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2024, in conformity with IFRS Accounting Standards as issued by the International Accounting Standards Board (IASB).

Our audits also comprehended the translation of New Taiwan dollar amounts into U.S. dollar amounts and, in our opinion, such translation has been made in conformity with the basis stated in Note 4 to the consolidated financial statements. Such U.S. dollar amounts are presented solely for the convenience of the readers outside the Republic of China.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Group’s internal control over financial reporting as of December 31, 2024, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 26, 2025, expressed an unqualified opinion on the Group’s internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Group’s management. Our responsibility is to express an opinion on the Group’s consolidated financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Group in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Goodwill – Allocated to the Packaging and Testing Segments for Impairment - Refer to Notes 4, 5 and 18 to the consolidated financial statements

Critical Audit Matter Description

The Group's evaluation of goodwill for impairment involves the estimates of the value in use of each segment. The Group used the discounted cash flow model to estimate value in use, which required management to make significant estimates and assumptions related to discount rates and forecasts of future revenues. Changes in these estimates and assumptions could have a significant impact on either the value in use, the amount of any goodwill impairment charge, or both. The goodwill balance was NT\$52,525,342 thousand (US\$1,601,871 thousand) as of December 31, 2024, of which NT\$35,437,523 thousand (US\$1,080,742 thousand) and NT\$13,489,766 thousand (US\$411,399 thousand) were allocated to the packaging and testing segments, respectively. The value in use of the packaging and testing segments exceeded their carrying values as of the measurement date and, therefore, no impairment was recognized.

We identified the valuation of goodwill for the Group's packaging and testing segments as a critical audit matter due to the significant estimates and assumptions management makes to estimate the value in use of the packaging and testing segments and the sensitivity of their operations to changes in demand. Auditing management's judgments related to the selection of the discount rates and forecasts of future revenues for the packaging and testing segments required a high degree of auditor's judgment and an increased extent of effort, including the need to involve our valuation specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the discount rates and forecasts of future revenues used by management to estimate the value in use of the packaging and testing segments included the following, among others:

- We tested the design and operating effectiveness of controls over management's evaluation of goodwill allocated to the packaging and testing segments for impairment, including those over the determination of the value in use of the packaging and testing segments, such as controls related to management's selection of the discount rates and assessment on the reasonableness of forecasts of future revenues.
- We evaluated management's ability to accurately forecast future revenues of the packaging and testing segments by comparing their actual results to management's historical forecasts.
- We performed sensitivity analyses to evaluate the risk of impairment if key assumptions were changed.

- With the assistance of our valuation specialists, we evaluated the reasonableness of the discount rates by performing certain procedures, including:
 - Testing the source information underlying the determination of the discount rates and the mathematical accuracy of the calculation.
 - Developing a range of independent estimates and comparing those to the discount rates selected by management.

/s/ Deloitte & Touche
Taipei, Taiwan
Republic of China
March 26, 2025

We have served as the Group's auditor since 1984.

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(Amounts in Thousands)

ASSETS	December 31, 2023 (Retrospectively Adjusted)	December 31, 2024	
	NT\$	NT\$	US\$ (Note 4)
CURRENT ASSETS			
Cash and cash equivalents (Note 6)	\$ 67,284,518	\$ 76,492,824	\$ 2,332,810
Financial assets at fair value through profit or loss - current (Note 7)	4,084,715	8,390,606	255,889
Contract assets - current (Note 41)	5,100,076	5,640,317	172,013
Trade receivables, net (Note 10)	99,536,761	113,419,820	3,458,976
Other receivables (Note 10)	15,902,053	2,895,495	88,304
Current tax assets (Note 26)	875,598	731,828	22,319
Inventories (Note 11)	59,658,354	57,313,938	1,747,909
Inventories related to real estate business (Notes 12 and 36)	3,668,476	3,866,994	117,932
Other financial assets - current (Notes 13 and 36)	598,136	985,925	30,068
Other current assets	4,973,647	5,547,339	169,178
Total current assets	261,682,334	275,285,086	8,395,398
NON-CURRENT ASSETS			
Financial assets at fair value through profit or loss - non-current (Note 7)	2,543,975	2,441,436	74,457
Financial assets at fair value through other comprehensive income - non-current (Note 8)	1,663,737	13,959,493	425,724
Investments accounted for using the equity method (Note 14)	19,678,314	20,423,340	622,853
Property, plant and equipment (Notes 15, 25, 36 and 37)	264,871,522	312,531,471	9,531,304
Right-of-use assets (Note 16)	11,442,266	11,851,087	361,424
Investment properties (Notes 17, 25 and 36)	20,169,116	20,055,044	611,621
Goodwill (Note 18)	52,419,427	52,525,342	1,601,871
Other intangible assets (Notes 19 and 25)	17,820,133	15,692,350	478,571
Deferred tax assets (Note 26)	6,395,595	7,175,371	218,828
Other financial assets - non-current (Notes 13 and 36)	5,564,331	4,691,997	143,092
Other non-current assets	3,141,985	4,428,052	135,043
Total non-current assets	405,710,401	465,774,983	14,204,788
TOTAL	\$ 667,392,735	\$ 741,060,069	\$ 22,600,186

(Continued)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(Amounts in Thousands)

	December 31, 2023 (Retrospectively Adjusted)		December 31, 2024			
	NT\$		NT\$	US\$ (Note 4)		
LIABILITIES AND EQUITY						
CURRENT LIABILITIES						
Short-term borrowings (Notes 20 and 36)	\$	37,737,217	\$	34,988,758	\$	1,067,056
Short-term bills payable (Note 20)		2,787,340		-		-
Financial liabilities at fair value through profit or loss - current (Note 7)		1,302,342		324,278		9,889
Financial liabilities for hedging - current (Notes 20 and 34)		12,516,971		12,456,104		379,875
Trade payables		70,329,069		78,221,100		2,385,517
Other payables (Note 22)		44,556,840		63,179,235		1,926,784
Current tax liabilities (Note 26)		9,649,556		8,888,506		271,074
Lease liabilities - current (Note 16)		1,062,239		986,489		30,085
Current portion of bonds payable (Note 21)		24,520,052		14,997,976		457,395
Current portion of long-term borrowings (Notes 20 and 36)		4,096,255		3,884,906		118,478
Other current liabilities		17,411,904		16,496,364		503,091
Total current liabilities		225,969,785		234,423,716		7,149,244
NON-CURRENT LIABILITIES						
Financial liabilities at fair value through profit or loss - non-current (Note 7)		-		508,591		15,510
Bonds payable (Note 21)		20,489,434		17,978,188		548,283
Long-term borrowings (Notes 20 and 36)		81,364,448		121,750,192		3,713,028
Deferred tax liabilities (Note 26)		7,703,646		6,850,104		208,908
Lease liabilities - non-current (Note 16)		7,159,767		6,825,534		208,159
Net defined benefit liabilities (Note 23)		4,130,104		3,396,161		103,573
Other non-current liabilities		5,824,896		7,056,670		215,208
Total non-current liabilities		126,672,295		164,365,440		5,012,669
Total liabilities		352,642,080		398,789,156		12,161,913
EQUITY ATTRIBUTABLE TO OWNERS OF THE COMPANY (Note 24)						
Share capital						
Ordinary shares		43,801,992		44,120,643		1,345,552
Shares subscribed in advance		52,656		31,862		972
Share capital awaiting canceled		(150)		-		-
Total share capital		43,854,498		44,152,505		1,346,524
Capital surplus		144,272,626		148,717,262		4,535,446
Retained earnings						
Legal reserve		18,584,524		21,817,390		665,367
Special reserve		2,959,573		2,791,960		85,147
Unappropriated earnings		89,980,210		96,640,231		2,947,247
Total retained earnings		111,524,307		121,249,581		3,697,761
Other equity		(3,212,216)		7,866,011		239,891
Treasury shares		(1,959,107)		(1,959,107)		(59,747)
Equity attributable to owners of the Company		294,480,108		320,026,252		9,759,875
NON-CONTROLLING INTERESTS (Note 24)		20,270,547		22,244,661		678,398
Total equity		314,750,655		342,270,913		10,438,273
TOTAL	\$	667,392,735	\$	741,060,069	\$	22,600,186

The accompanying notes are an integral part of the consolidated financial statements.

(Concluded)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Amounts in Thousands Except Earnings Per Share)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
OPERATING REVENUES (Note 41)	\$ 670,872,643	\$ 581,914,471	\$ 595,409,585	\$ 18,158,267
OPERATING COSTS (Notes 11 and 25)	535,942,631	490,157,339	498,477,841	15,202,130
GROSS PROFIT	134,930,012	91,757,132	96,931,744	2,956,137
OPERATING EXPENSES (Note 25)				
Selling and marketing expenses	6,920,503	6,569,478	7,467,844	227,748
General and administrative expenses	23,464,019	19,360,539	21,467,202	654,687
Research and development expenses	24,369,907	25,499,408	28,830,313	879,241
Total operating expenses	54,754,429	51,429,425	57,765,359	1,761,676
OTHER OPERATING INCOME AND EXPENSES, NET (Note 25)	1,014,328	1,321,770	1,172,592	35,761
PROFIT FROM OPERATIONS	81,189,911	41,649,477	40,338,977	1,230,222
NON-OPERATING INCOME AND EXPENSES				
Other income (Note 25)	1,730,740	2,709,694	2,924,734	89,196
Other gains and losses (Note 25)	1,667,382	3,444,138	4,349,992	132,662
Finance costs (Note 25)	(4,009,782)	(6,272,086)	(6,777,032)	(206,680)
Share of the profit or loss of associates and joint ventures	1,185,377	1,080,600	896,702	27,347
Total non-operating income and expenses	573,717	962,346	1,394,396	42,525
PROFIT BEFORE INCOME TAX	81,763,628	42,611,823	41,733,373	1,272,747
INCOME TAX EXPENSE (Note 26)	17,145,534	5,303,963	7,916,463	241,429
PROFIT FOR THE YEAR	64,618,094	37,307,860	33,816,910	1,031,318
OTHER COMPREHENSIVE INCOME (LOSS)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	1,157,261	(66,384)	234,388	7,148
Unrealized gain (loss) on equity instruments at fair value through other comprehensive income	(423,303)	211,468	10,016	305
Share of other comprehensive income (loss) of associates and joint ventures	(2,929,474)	2,468,244	160,374	4,891
Income tax relating to items that will not be reclassified subsequently to profit or loss	161,609	(264,618)	(84,472)	(2,576)
	(2,033,907)	2,348,710	320,306	9,768

(Continued)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (Amounts in Thousands Except Earnings Per Share)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Items that may be reclassified subsequently to profit or loss:				
Exchange differences on translating foreign operations	\$ 10,326,729	\$ (1,536,221)	\$ 12,788,423	\$ 390,010
Unrealized loss on debt investments at fair value through other comprehensive income	(16,746)	(16,807)	(17,145)	(523)
Gain (loss) on hedging instruments	509,229	(312,029)	562,598	17,158
Share of other comprehensive loss of associates and joint ventures	(152,833)	(28,511)	(18,192)	(555)
Income tax related to items that may be reclassified subsequently to profit or loss	-	(5,792)	2,315	71
	<u>10,666,379</u>	<u>(1,899,360)</u>	<u>13,317,999</u>	<u>406,161</u>
Other comprehensive income for the year, net of income tax	<u>8,632,472</u>	<u>449,350</u>	<u>13,638,305</u>	<u>415,929</u>
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	<u>\$ 73,250,566</u>	<u>\$ 37,757,210</u>	<u>\$ 47,455,215</u>	<u>\$ 1,447,247</u>
NET PROFIT ATTRIBUTABLE TO:				
Owners of the Company	\$ 61,501,545	\$ 35,457,908	\$ 32,378,936	\$ 987,464
Non-controlling interests	<u>3,116,549</u>	<u>1,849,952</u>	<u>1,437,974</u>	<u>43,854</u>
	<u>\$ 64,618,094</u>	<u>\$ 37,307,860</u>	<u>\$ 33,816,910</u>	<u>\$ 1,031,318</u>
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:				
Owners of the Company	\$ 69,706,868	\$ 36,020,578	\$ 45,203,116	\$ 1,378,564
Non-controlling interests	<u>3,543,698</u>	<u>1,736,632</u>	<u>2,252,099</u>	<u>68,683</u>
	<u>\$ 73,250,566</u>	<u>\$ 37,757,210</u>	<u>\$ 47,455,215</u>	<u>\$ 1,447,247</u>
EARNINGS PER SHARE (Note 27)				
Basic	\$ 14.39	\$ 8.25	\$ 7.50	\$ 0.23
Diluted	<u>\$ 13.81</u>	<u>\$ 8.04</u>	<u>\$ 7.20</u>	<u>\$ 0.22</u>
EARNINGS PER AMERICAN DEPOSITARY SHARE ("ADS") (Note 27)				
Basic	\$ 28.77	\$ 16.51	\$ 14.99	\$ 0.46
Diluted	<u>\$ 27.61</u>	<u>\$ 16.08</u>	<u>\$ 14.40</u>	<u>\$ 0.44</u>

The accompanying notes are an integral part of the consolidated financial statements.

(Concluded)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Amounts in Thousands)

	Equity Attributable to Owners of the Company																
	Share Capital							Other Equity									
								Exchange Differences on Translating Foreign Operations	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Employee Benefit	Equity Directly Associated with Disposal Groups Held for Sale	Total	Treasury Shares	Total	Non-controlling Interests	Total Equity
	Shares (In Thousands)	Amounts	Capital Surplus	Legal Reserve	Special Reserve	Unappropriated Earnings	Total										
BALANCE ATJANUARY 1,2022	4,408,650	\$ 44,086,502	\$ 143,693,168	\$ 6,300,198	\$ 9,569,027	\$ 69,712,555	\$ 85,581,780	\$ (15,393,646)	\$ 4,190,361	\$ 121,833	\$ (1,164,991)	\$ -	\$ (12,246,443)	\$ (7,488,362)	\$ 253,626,645	\$ 14,544,415	\$ 268,171,060
Appropriation of2021 earnings																	
Legal reserve	-	-	-	6,282,762	-	(6,282,762)	-	-	-	-	-	-	-	-	-	-	-
Special reserve	-	-	-	-	798,025	(798,025)	-	-	-	-	-	-	-	-	-	-	-
Cash dividends distributed by the Company	-	-	-	-	-	(30,501,981)	(30,501,981)	-	-	-	-	-	-	-	(30,501,981)	-	(30,501,981)
	-	-	-	6,282,762	798,025	(37,582,768)	(30,501,981)	-	-	-	-	-	-	-	(30,501,981)	-	(30,501,981)
Donations fromshareholders	-	-	471,894	-	-	-	-	-	-	-	-	-	-	-	471,894	-	471,894
Change from investments in associates accounted for using the equity method	-	-	7,623	-	-	152,102	152,102	-	(152,102)	-	-	-	(152,102)	-	7,623	-	7,623
Other changes in the capital surplus	-	-	1,186	-	-	-	-	-	-	-	-	-	-	-	1,186	-	1,186
Net profit for the year ended December 31, 2022	-	-	-	-	-	61,501,545	61,501,545	-	-	-	-	-	-	-	61,501,545	3,116,549	64,618,094
Other comprehensive income (loss) for the year ended December 31, 2022, net ofincome tax	-	-	-	-	-	895,896	895,896	9,864,258	(2,953,279)	398,448	-	-	7,309,427	-	8,205,323	427,149	8,632,472
Total comprehensive income (loss) for the year ended December 31, 2022	-	-	-	-	-	62,397,441	62,397,441	9,864,258	(2,953,279)	398,448	-	-	7,309,427	-	69,706,868	3,543,698	73,250,566
Buy-back ofordinary shares	-	-	-	-	-	-	-	-	-	-	-	-	-	(205,608)	(205,608)	-	(205,608)
Cancellation oftreasury shares	(55,000)	(550,000)	(2,463,716)	-	-	(2,721,147)	(2,721,147)	-	-	-	-	-	-	5,734,863	-	-	-
Cash dividends received by subsidiaries from the Company	-	-	38,404	-	-	-	-	-	-	-	-	-	-	-	38,404	-	38,404
Changes in percentage ofownership interest in subsidiaries	-	-	(8,963)	-	-	(211,184)	(211,184)	-	-	-	-	-	-	-	(220,147)	(312,775)	(532,922)
Share-based payment fromthe Company (Note 28)	14,334	143,339	742,845	-	-	-	-	-	-	-	732,144	-	732,144	-	1,618,328	-	1,618,328
Cash dividends distributed by subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(575,089)	(575,089)
Share-based payment fromsubsidiaries (Note 28)	-	-	125,049	-	-	-	-	-	-	-	-	-	-	-	125,049	315,871	440,920
Issue ofconvertible bonds by subsidiary (Note 21)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,092,004	1,092,004
Disposal ofinvestments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	(190,525)	(190,525)	-	190,525	-	-	-	190,525	-	-	-	-
BALANCE ATDECEMBER 31, 2022	4,367,984	\$ 43,679,841	\$ 142,607,490	\$ 12,582,960	\$ 10,367,052	\$ 91,556,474	\$ 114,506,486	\$ (5,529,388)	\$ 1,275,505	\$ 520,281	\$ (432,847)	\$ -	\$ (4,166,449)	\$ (1,959,107)	\$ 294,668,261	\$ 18,608,124	\$ 313,276,385
BALANCE ATJANUARY 1, 2023	4,367,984	\$ 43,679,841	\$ 142,607,490	\$ 12,582,960	\$ 10,367,052	\$ 91,556,474	\$ 114,506,486	\$ (5,529,388)	\$ 1,275,505	\$ 520,281	\$ (432,847)	\$ -	\$ (4,166,449)	\$ (1,959,107)	\$ 294,668,261	\$ 18,608,124	\$ 313,276,385
Appropriation of2022 earnings																	
Legal reserve	-	-	-	6,001,564	-	(6,001,564)	-	-	-	-	-	-	-	-	-	-	-
Special reserve	-	-	-	-	(6,845,501)	6,845,501	-	-	-	-	-	-	-	-	-	-	-
Cash dividends distributed by the Company	-	-	-	-	-	(38,482,083)	(38,482,083)	-	-	-	-	-	-	-	(38,482,083)	-	(38,482,083)
	-	-	-	6,001,564	(6,845,501)	(37,638,146)	(38,482,083)	-	-	-	-	-	-	-	(38,482,083)	-	(38,482,083)
Reversal ofspecial reserve appropriated at the first-time adoption ofIFRS Accounting Standards	-	-	-	-	(561,978)	561,978	-	-	-	-	-	-	-	-	-	-	-
Change from investments in associates accounted for using the equity method	-	-	3,255	-	-	-	-	-	-	-	-	-	-	-	3,255	-	3,255
Other changes in the capital surplus	-	-	87	-	-	-	-	-	-	-	-	-	-	-	87	-	87
Net profit for the year ended December 31, 2023	-	-	-	-	-	35,457,908	35,457,908	-	-	-	-	-	-	-	35,457,908	1,849,952	37,307,860
Other comprehensive income (loss) for the year ended December 31, 2023, net ofincome tax	-	-	-	-	-	(32,134)	(32,134)	(1,505,241)	2,347,561	(242,840)	-	(4,676)	594,804	-	562,670	(113,320)	449,350
Total comprehensive income (loss) for the year ended December 31, 2023	-	-	-	-	-	35,425,774	35,425,774	(1,505,241)	2,347,561	(242,840)	-	(4,676)	594,804	-	36,020,578	1,736,632	37,757,210
Cash dividends received by subsidiaries from the Company	-	-	641,387	-	-	-	-	-	-	-	-	-	-	-	641,387	-	641,387

(Continued)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(Amounts in Thousands)

	Equity Attributable to Owners of the Company							Other Equity									
	Share Capital		Capital Surplus	Retained Earnings				Exchange Differences on Translating Foreign Operations	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Employee Benefit	Equity Directly Associated with Disposal Groups Held for Sale	Total	Treasury Shares	Total	Non-controlling Interests	Total Equity
	Shares (In Thousands)	Amounts		Legal Reserve	Special Reserve	Unappropriated Earnings	Total										
Disposal of subsidiary (Note 30)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(295,895)	(295,895)
Differences between consideration and carrying amount arising from acquisition of subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	427,913	427,913
Share-based payment from the Company (Note 28)	17,466	174,657	929,634	-	-	712	712	-	-	-	432,847	-	432,847	-	1,537,850	-	1,537,850
Cash dividends distributed by subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(912,261)	(912,261)
Share-based payment from subsidiaries (Note 28)	-	-	90,773	-	-	-	-	-	-	-	-	-	-	-	90,773	293,740	384,513
Issue of convertible bonds by subsidiary (Note 21)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	412,294	412,294
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	73,418	73,418	-	(73,418)	-	-	-	(73,418)	-	-	-	-
BALANCE AT DECEMBER 31, 2023	4,385,450	\$ 43,854,498	\$ 144,272,626	\$ 18,584,524	\$ 2,959,573	\$ 89,980,210	\$ 111,524,307	\$ (7,034,629)	\$ 3,549,648	\$ 277,441	\$ -	\$ (4,676)	\$ (3,212,216)	\$ (1,959,107)	\$ 294,480,108	\$ 20,270,547	\$ 314,750,655
BALANCE AT JANUARY 1, 2024	4,385,450	\$ 43,854,498	\$ 144,272,626	\$ 18,584,524	\$ 2,959,573	\$ 89,980,210	\$ 111,524,307	\$ (7,034,629)	\$ 3,549,648	\$ 277,441	\$ -	\$ (4,676)	\$ (3,212,216)	\$ (1,959,107)	\$ 294,480,108	\$ 20,270,547	\$ 314,750,655
Appropriation of 2023 earnings																	
Legal reserve	-	-	-	3,232,866	-	(3,232,866)	-	-	-	-	-	-	-	-	-	-	-
Special reserve	-	-	-	-	(167,613)	167,613	-	-	-	-	-	-	-	-	-	-	-
Cash dividends distributed by the Company	-	-	-	-	-	(22,838,947)	(22,838,947)	-	-	-	-	-	-	-	(22,838,947)	-	(22,838,947)
	-	-	-	3,232,866	(167,613)	(25,904,200)	(22,838,947)	-	-	-	-	-	-	-	(22,838,947)	-	(22,838,947)
Change from investments in associates accounted for using the equity method	-	-	4,445	-	-	-	-	-	-	-	-	-	-	-	4,445	-	4,445
Other changes in the capital surplus	-	-	68	-	-	-	-	-	-	-	-	-	-	-	68	-	68
Net profit for the year ended December 31, 2024	-	-	-	-	-	32,378,936	32,378,936	-	-	-	-	-	-	-	32,378,936	1,437,974	33,816,910
Other comprehensive income (loss) for the year ended December 31, 2024 net of income tax	-	-	-	-	-	173,524	173,524	12,085,635	122,083	438,262	-	4,676	12,650,656	-	12,824,180	814,125	13,638,305
Total comprehensive income (loss) for the year ended December 31, 2024	-	-	-	-	-	32,552,460	32,552,460	12,085,635	122,083	438,262	-	4,676	12,650,656	-	45,203,116	2,252,099	47,455,215
Cash dividends received by subsidiaries from the Company	-	-	379,462	-	-	-	-	-	-	-	-	-	-	-	379,462	-	379,462
Changes in percentage of ownership interest in subsidiaries (Note 31)	-	-	(250,106)	-	-	(5,439)	(5,439)	-	-	-	-	-	-	-	(255,545)	(201,150)	(456,695)
Share-based payment from the Company (Note 28)	29,801	298,007	4,228,820	-	-	76,028	76,028	-	-	-	(1,631,257)	-	(1,631,257)	-	2,971,598	-	2,971,598
Non-controlling interests arising from capital increase of subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	177,487	177,487
Cash dividends distributed by subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	(593,390)	(593,390)
Share-based payment from subsidiaries (Note 28)	-	-	81,947	-	-	-	-	-	-	-	-	-	-	-	81,947	238,183	320,130
Issue of convertible bonds by subsidiary (Note 21)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100,885	100,885
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	(58,828)	(58,828)	-	58,828	-	-	-	58,828	-	-	-	-
BALANCE AT DECEMBER 31, 2024	4,415,251	\$ 44,152,505	\$ 148,717,262	\$ 21,817,390	\$ 2,791,960	\$ 96,640,231	\$ 121,249,581	\$ 5,051,006	\$ 3,730,559	\$ 715,703	\$ (1,631,257)	\$ -	\$ 7,866,011	\$ (1,959,107)	\$ 320,026,252	\$ 22,244,661	\$ 342,270,913
US DOLLARS (Note 4)																	
BALANCE AT DECEMBER 31, 2024	4,415,251	\$ 1,346,524	\$ 4,535,446	\$ 665,367	\$ 85,147	\$ 2,947,247	\$ 3,697,761	\$ 154,041	\$ 113,771	\$ 21,827	\$ (49,748)	\$ -	\$ 239,891	\$ (59,747)	\$ 9,759,875	\$ 678,398	\$ 10,438,273

The accompanying notes are an integral part of the consolidated financial statements.

(Concluded)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(Amounts in Thousands)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
CASH FLOWS FROM OPERATING ACTIVITIES				
Profit before income tax	\$ 81,763,628	\$ 42,611,823	\$ 41,733,373	\$ 1,272,747
Adjustments for:				
Depreciation expense	51,520,810	54,195,380	55,995,198	1,707,691
Amortization expense	3,931,079	3,906,483	3,820,014	116,499
Net gain on fair value change of financial assets and liabilities at fair value through profit or loss	(4,107,745)	(1,860,511)	(9,832,900)	(299,875)
Finance costs	4,009,782	6,272,086	6,777,032	206,680
Interest income	(654,747)	(1,513,407)	(1,883,518)	(57,442)
Dividend income	(278,381)	(256,160)	(194,812)	(5,941)
Share-based payment compensations	989,843	742,890	2,188,600	66,746
Share of profit of associates and joint ventures	(1,185,377)	(1,080,600)	(896,702)	(27,347)
Gain on disposal of property, plant and equipment	(113,356)	(161,761)	(208,980)	(6,373)
Gain on disposal of investments accounted for using the equity method	(80,317)	(55,795)	(20,952)	(639)
Impairment loss recognized on financial assets	119,974	108,443	195,455	5,961
Impairment loss recognized on non-financial assets	2,359,055	3,536,506	603,756	18,413
Gain on disposal of subsidiaries	-	(529,721)	-	-
Gain on bargain purchase	-	-	(76,715)	(2,340)
Net loss on foreign currency exchange	6,318,273	10,127	3,377,808	103,013
Others	6,766	34,888	(65,671)	(2,003)
Changes in operating assets and liabilities				
Financial assets mandatorily at fair value through profit or loss	7,070,941	8,453,963	7,767,363	236,882
Contract assets	(123,964)	631,097	(540,241)	(16,476)
Trade receivables	754,156	15,868,810	(14,331,791)	(437,078)
Other receivables	(1,953,605)	348,614	1,068,459	32,585
Inventories	(21,669,101)	25,401,815	1,781,135	54,319
Other current assets	20,864	(292,294)	(620,913)	(18,936)
Other financial assets	(3,476,090)	(718,946)	1,009,130	30,776
Other operating activities assets	(606,418)	92,135	181,390	5,532
Financial liabilities held for trading	(5,928,083)	(3,619,901)	(2,966,792)	(90,478)
Trade payables	(5,456,906)	(9,037,355)	7,694,702	234,666
Other payables	7,047,162	(8,281,769)	1,540,330	46,976
Other current liabilities	1,592,098	(877,245)	95,790	2,921
Other operating activities liabilities	5,265,384	(182,534)	(387,660)	(11,822)
Cash generated from operations	127,135,725	133,747,061	103,801,888	3,165,657
Interest received	652,679	1,479,507	1,811,676	55,251
Dividend received	957,611	668,883	665,916	20,309
Interest paid	(3,494,516)	(5,998,956)	(6,419,091)	(195,764)
Income tax paid	(14,250,527)	(15,474,646)	(9,072,635)	(276,689)
Net cash generated from operating activities	111,000,972	114,421,849	90,787,754	2,768,764

(Continued)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS (Amounts in Thousands)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
CASH FLOWS FROM INVESTING ACTIVITIES				
Purchase of financial assets at fair value through other comprehensive income	\$ (20,000)	\$ (184,355)	\$ (13,560)	\$ (413)
Proceeds from disposal of financial assets at fair value through other comprehensive income	-	-	405	12
Return of capital from financial assets at fair value through other comprehensive income	63,051	188,347	184,050	5,613
Acquisition of associates and joint ventures	(117,589)	(2,259,757)	(14,700)	(448)
Proceeds from disposal of investments accounted for using the equity method	-	489,329	-	-
Net proceeds outflow on acquisition of subsidiaries (Note 29)	-	(1,224,183)	(1,627,074)	(49,621)
Net proceeds from disposal of subsidiaries (Note 30)	-	2,093,700	-	-
Payments for property, plant and equipment	(72,639,905)	(54,158,229)	(79,521,938)	(2,425,189)
Proceeds from disposal of property, plant and equipment	749,757	475,326	908,053	27,693
Payments for intangible assets	(382,767)	(395,651)	(1,567,300)	(47,798)
Proceeds from disposal of intangible assets	4,932	9,901	10,177	310
Payments for right-of-use assets	(682,602)	(35,851)	(593,496)	(18,100)
Payments for investment properties	(114,786)	(35,304)	(15,145)	(462)
Proceeds from disposal of investment properties	-	-	34	1
Increase in other financial assets	(268,205)	(485,132)	(1,686,349)	(51,429)
Decrease in other financial assets	252,845	226,397	1,530,701	46,682
Increase in other non-current assets	(267,003)	(294,680)	(473,350)	(14,436)
Decrease in other non-current assets	280,916	80,668	140,976	4,300
Income tax paid	(842,440)	-	(1,170,149)	(35,686)
Other investing activities items	31,922	387,480	-	-
Net cash used in investing activities	(73,951,874)	(55,121,994)	(83,908,665)	(2,558,971)
CASH FLOWS FROM FINANCING ACTIVITIES				
Proceeds from short-term borrowings	1,866,253	3,231,840	-	-
Repayment of short-term borrowings	-	-	(4,514,729)	(137,686)
Proceeds from short-term bills payable	-	2,787,340	-	-
Repayment of short-term bills payable	-	-	(2,787,340)	(85,006)
Proceeds from bonds offering	6,365,377	2,426,634	1,035,014	31,565
Repayment of bonds payable	(9,904,800)	(5,000,000)	(13,902,400)	(423,983)
Proceeds from long-term borrowings	214,642,236	286,268,360	244,731,255	7,463,594
Repayment of long-term borrowings	(244,158,657)	(300,531,590)	(208,074,986)	(6,345,684)
Repayment of the principle portion of lease liabilities	(1,035,019)	(1,136,666)	(1,547,291)	(47,188)
Dividends paid	(29,990,842)	(37,840,609)	(22,459,417)	(684,947)
Proceeds from exercise of employee share options	1,069,255	1,175,260	1,103,058	33,640
Payments for buy-back of ordinary shares	(205,608)	-	-	-
Decrease in non-controlling interests	(1,108,010)	(484,348)	(872,613)	(26,612)
Other financing activities items	1,009	2,740	18,243	556
Net cash used in financing activities	(62,458,806)	(49,101,039)	(7,271,206)	(221,751)

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ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS (Amounts in Thousands)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
EFFECTS OF EXCHANGE RATE CHANGES ON THE BALANCE OF CASH AND CASH EQUIVALENTS HELD IN FOREIGN CURRENCY	\$ 7,376,757	\$ (954,692)	\$ 9,600,423	\$ 292,785
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	(18,032,951)	9,244,124	9,208,306	280,827
CASH AND CASH EQUIVALENTS AT THE BEGINNING OF THE YEAR	76,073,345	58,040,394	67,284,518	2,051,983
CASH AND CASH EQUIVALENTS AT THE END OF THE YEAR	<u>\$ 58,040,394</u>	<u>\$ 67,284,518</u>	<u>\$ 76,492,824</u>	<u>\$ 2,332,810</u>

The accompanying notes are an integral part of the consolidated financial statements.

(Concluded)

ASE TECHNOLOGY HOLDING CO., LTD. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Amounts in Thousands, Unless Stated Otherwise)

1. GENERAL INFORMATION

ASE Technology Holding Co., Ltd. (the “Company”) is a corporation incorporated in Nanzih Technology Industrial Park under the laws of Republic of China (“R.O.C.”) starting from April 30, 2018 (date of incorporation). The Company and its subsidiaries (collectively referred to as the “Group”) offer a comprehensive range of semiconductors packaging, testing, and electronic manufacturing services (“EMS”).

The Company’s subsidiaries, Advanced Semiconductor Engineering, Inc. (symbol “2311”, “ASE”) and Siliconware Precision Industries Co., Ltd. (symbol “2325”, “SPIL”), entered into and executed a joint share exchange agreement to establish the Company and the Company acquired all issued and outstanding ordinary shares of ASE and SPIL on April 30, 2018. Both of ASE’s and SPIL’s ordinary shares have been delisted while the ordinary shares of the Company were listed starting from the same date under the symbol “3711”. In addition, ASE’s ordinary shares that have been traded on the New York Stock Exchange (the “NYSE”) under the symbol “ASX” in the form of American Depositary Shares (“ADS”) starting from September 2000 were exchanged as the Company’s ADSs under the same symbol “ASX” starting from April 30, 2018.

The Company’s subsidiaries, ASE and SPIL, were respectively approved by the competent authority to terminate their public offering in March and April of 2024.

The ordinary shares of the Company’s subsidiary, Universal Scientific Industrial (Shanghai) Co., Ltd. (“USISH”), have been listed on the Shanghai Stock Exchange under the symbol “601231” since February 2012.

The consolidated financial statements are presented in the Company’s functional currency, New Taiwan dollar (NT\$).

2. APPROVAL OF FINANCIAL STATEMENTS

The consolidated financial statements were authorized for issue by the management on March 14, 2025.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS AS ISSUED BY THE INTERNATIONAL ACCOUNTING STANDARDS BOARD (“IASB”) (collectively, “IFRS Accounting Standards”)

a. Amendments to IFRS Accounting Standards that are mandatorily effective for the current year

In the current year, the Group applied the amendments to IFRS 16 “Leases Liability in a Sale and Leaseback,” amendments to IAS 1 “Classification of Liabilities as Current or Non-current (referred to as the “2020 amendments”))” and “Non-current Liabilities with Covenants (referred to as the “2022 amendments”),” and amendments to IAS 7 and IFRS 7 “Supplier Finance Arrangements.”

Except for the following, the initial application of the aforementioned new, revised or amended standards and interpretations did not have material impact on the Group’s accounting policies:

- 1) The 2020 amendments and the 2022 amendments

The 2020 amendments clarify that for a liability to be classified as non-current, the Group shall assess whether it has the right at the end of the reporting period to defer settlement of the liability for at least twelve months after the reporting period. If such rights exist at the end of the reporting period, the liability is classified as non-current regardless of whether the Group will exercise that right.

The 2020 amendments also stipulate that, if the right to defer settlement is subject to compliance with specified conditions, the Group must comply with those conditions at the end of the reporting period even if the lender does not test compliance until a later date. The 2022 amendments further clarify that only covenants with which the Group is required to comply on or before the reporting date should affect the classification of a liability as current or non-current. Although the covenants to be complied with within twelve months after the reporting period do not affect the classification of a liability, the Group shall disclose information that enables users of financial statements to understand the risk of the Group, which may have difficulty complying with the covenants and repaying its liabilities within twelve months after the reporting period.

The 2020 amendments stipulate that, for the purpose of liability classification, the aforementioned settlement refers to a transfer of cash, other economic resources or the Group's own equity instruments to the counterparty that results in the extinguishment of the liability. However, if the terms of a liability that, at the option of the counterparty, result in its settlement by a transfer of the Group's own equity instruments, and if such an option is recognized separately as equity in accordance with IAS 32 "Financial Instruments: Presentation", the aforementioned terms would not affect the classification of the liability.

2) Amendments to IAS 7 and IFRS 7 "Supplier Finance Arrangements"

The Group has applied the amendments since January 1, 2024. The amendments stipulate that supplier finance arrangements are characterized by one or more finance providers offering to pay amounts an entity owes its suppliers and the entity agreeing to pay according to the terms and conditions of the arrangements at the same date as, or a date later than, the suppliers are paid. The Group shall disclose the relevant information about its supplier finance arrangements that enables users of financial statements to assess the effects of those arrangements on the Group's liabilities and cash flows and on the Group's exposure to liquidity risk. See Note 32 for the details.

b. New, revised or amended IFRS Accounting Standards in issue but not yet effective

The Group has not applied the following new, revised or amended IFRS Accounting Standards that have been issued but are not yet effective:

New, Revised or Amended Standards and Interpretations	Effective Date Announced by IASB (Note 1)
Amendments to IAS 21 "Lack of Exchangeability"	January 1, 2025 (Note 2)
Annual Improvements to IFRS Accounting Standards - Volume 11	January 1, 2026
Amendments to IFRS 9 and IFRS 7 "Amendments to the Classification and Measurement of Financial Instruments"	January 1, 2026
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
IFRS 18 "Presentation and Disclosures in Financial Statements"	January 1, 2027

Note 1: Unless stated otherwise, the above IFRS Accounting Standards are effective for annual reporting periods beginning on or after their respective effective dates.

Note 2: The Group shall apply those amendments for annual reporting periods beginning on or after January 1, 2025. Upon initial application of the amendments to IAS 21, the Group shall not restate the comparative information and shall recognize any effect of initially applying the

amendments as an adjustment to the opening balance of retained earnings or, if applicable, to the cumulative amount of translation differences in equity as well as affected assets or liabilities.

- c. Material changes in accounting policy resulted from new, revised and amended IFRS Accounting Standards in issue but not yet effective

Except for the following, as of the date that the accompanying consolidated financial statements were authorized for issue, the Group is continuously assessing other impacts of the above amended standards and interpretations on the Group's financial position and financial performance and will disclose the relevant impact when the assessment is completed.

1) IFRS 18 "Presentation and Disclosure in Financial Statements"

IFRS 18 will supersede IAS 1 "Presentation of Financial Statements". The main changes comprise:

- Items of income and expenses included in the statement of profit or loss shall be classified into the operating, investing, financing, income taxes and discontinued operations categories.
- The statement of profit or loss shall present totals and subtotals for operating profit or loss, profit or loss before financing and profit or loss.
- Provides guidance to enhance the requirements of aggregation and disaggregation: The Group shall identify the assets, liabilities, equity, income, expenses and cash flows that arise from individual transactions or other events and shall classify and aggregate them into groups based on shared characteristics, so as to result in the presentation in the primary financial statements of line items that have at least one similar characteristic. The Group shall disaggregate items with dissimilar characteristics in the primary financial statements and in the notes. The Group labels items as "other" only if it cannot find a more informative label.
- Disclosures on Management-defined Performance Measures (MPMs): When in public communications outside financial statements and communicating to users of financial statements management's view of an aspect of the financial performance of the Group as a whole, the Group shall disclose related information about its MPMs in a single note to the financial statements, including the description of such measures, calculations, reconciliations to the subtotal or total specified by IFRS Accounting Standards and the income tax and non-controlling interests effects of related reconciliation items.

2) Amendments to IFRS 9 and IFRS 7 "Amendments to the Classification and Measurement of Financial Instruments"

The amendments mainly amend the requirements for the classification of financial assets, including if a financial asset contains a contingent feature that could change the timing or amount of contractual cash flows and the contingent event itself does not relate directly to changes in basic lending risks and costs (e.g., whether the debtor achieves a contractually specified reduction in carbon emissions), the financial asset has contractual cash flows that are solely payments of principal and interest on the principal amount outstanding if, and only if,

- In all possible scenarios (before and after the occurrence of a contingent event), the contractual cash flows are solely payments of principal and interest on the principal amount outstanding; and
- In all possible scenarios, the contractual cash flows would not be significantly different from the contractual cash flows on a financial instrument with identical contractual terms, but without such a contingent feature.

The amendments also stipulate that, when settling a financial liability in cash using an electronic payment system, the Group can choose to derecognize the financial liability before the settlement date if, and only if, the Group has initiated a payment instruction that resulted in:

- The Group having no practical ability to withdraw, stop or cancel the payment instruction;
- The Group having no practical ability to access the cash to be used for settlement as a result of the payment instruction; and
- The settlement risk associated with the electronic payment system being insignificant.

4. SUMMARY OF MATERIAL ACCOUNTING POLICY INFORMATION

a. Statement of compliance

The consolidated financial statements have been prepared in accordance with IFRS Accounting Standards as issued by the IASB.

b. Basis of preparation

The consolidated financial statements have been prepared on the historical cost basis except for financial instruments measured at fair value, contingent considerations assumed in business combinations, and net defined benefit liabilities which are measured at the present value of the defined benefit obligation less the fair value of plan assets.

The fair value measurements, which are grouped into Levels 1 to 3 based on the degree to which the fair value measurement inputs are observable and based on the significance of the inputs to the fair value measurement in its entirety, are described as follows:

- 1) Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities;
- 2) Level 2 inputs are inputs other than quoted prices included within Level 1 that are observable for an asset or a liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- 3) Level 3 inputs are unobservable inputs for an asset or a liability.

c. Classification of current and non-current assets and liabilities

Current assets include cash and cash equivalents and those assets held primarily for trading purposes or expected to be realized within 12 months after the balance sheet date, unless the asset is to be used for an exchange or to settle a liability, or otherwise remains restricted, at more than 12 months after the balance sheet date. Current liabilities are obligations incurred for trading purposes or to be settled within 12 months after the balance sheet date (even if an agreement to refinance, or to reschedule payments, on a long-term basis is completed after the balance sheet date and before the consolidated financial statements are authorized for issue) and liabilities for which the Group does not have the substantial right at the end of the reporting period to defer settlement for at least 12 months after the balance sheet date. Assets and liabilities that are not classified as current are classified as non-current. Terms of a liability that could, at the option of the counterparty, result in its settlement by the transfer of the Group's own equity instruments do not affect its classification as current or non-current if the Group classifies the option as an equity instrument.

The Group engages in the real estate development business which has an operating cycle of over one year. The normal operating cycle applies when considering the classification of the Group's real estate development-related assets and liabilities.

d. Basis of consolidation

1) Principles for preparing consolidated financial statements

The consolidated financial statements incorporate the financial statements of the Company and the entities controlled by the Company (i.e. its subsidiaries).

Income and expenses of subsidiaries acquired or disposed of during the period are included in the consolidated statement of profit or loss and other comprehensive income from the effective dates of acquisitions up to the effective dates of disposals, as appropriate.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies in line with those used by the Company.

All intra-group transactions, balances, income and expenses are eliminated in full upon consolidation. Total comprehensive income of subsidiaries is attributed to the owners of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Changes in the Group's ownership interests in subsidiaries that do not result in the Group losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the interests of the Group 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 the owners of the Company.

When the Group loses control of a subsidiary, a gain or loss is recognized in profit or loss and is calculated as the difference between (i) the aggregate of the fair value of the consideration received and any investment retained in the former subsidiary at its fair value at the date when control is lost and (ii) the assets (including any goodwill) and liabilities and any non-controlling interests of the former subsidiary at their carrying amounts at the date when control is lost. The Group accounts for all amounts recognized in other comprehensive income in relation to that subsidiary on the same basis as would be required had the Group directly disposed of the related assets or liabilities.

2) The detail information of the subsidiaries was as follows:

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%)	
				December 31 2023	December 31 2024
The Company	ASE	Engaged in the packaging and testing of semiconductors	R.O.C.	100.0	100.0
	USI Inc. ("USIINC")	Holding company	R.O.C.	100.0	100.0
	SPIL	Engaged in the assembly, testing and turnkey services of integrated circuit	R.O.C.	100.0	100.0
	ASE Social Enterprise Co., Ltd.	Engaged in social services	R.O.C.	100.0	100.0
	ASE Global Integrated Solutions Co., Ltd.	Engaged in integration-relevant services	R.O.C.	100.0	100.0
ASE	A.S.E. Holding Limited	Holding company	Bermuda	100.0	100.0
	J & R Holding Limited ("J&R Holding")	Holding company	Bermuda	100.0	100.0
	Innosource Limited	Holding company	British Virgin Islands	100.0	100.0
	Omniquiest Industrial Limited	Holding company	British Virgin Islands	71.0	71.0
	ASE Marketing & Service Japan Co., Ltd.	Engaged in marketing and sales services	Japan	100.0	100.0
	ASE Test, Inc. ("ASET")	Engaged in the testing of semiconductors	R.O.C.	100.0	100.0
	Advanced Microelectronic Products Inc. ("AMPI")	Engaged in the manufacturing of integrated circuit	R.O.C.	7.6	6.9
	ASE Singapore Pte. Ltd.	Engaged in the packaging and testing of semiconductors	Singapore	100.0	100.0

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%)	
				December 31	
				2023	2024
ASET	ASE Electronics (M) Sdn. Bhd.	Engaged in the packaging and testing of semiconductors	Malaysia	100.0	100.0
	ASEP Cayman Ltd. ("ASEPCAYMAN")	Engaged in the packaging and testing of semiconductors, and was acquired in August 2024 (Note 29)	British Cayman Islands	-	100.0
	Alto Enterprises Limited	Holding company	British Virgin Islands	100.0	100.0
	Super Zone Holdings Limited	Holding company	Hong Kong	100.0	100.0
	TLJ Intertech Inc.	Engaged in information software services	R.O.C.	60.0	60.0
A.S.E. Holding Limited	AMPI	Engaged in the manufacturing of integrated circuit	R.O.C.	43.4	48.9
	ASE Investment (Labuan) Inc.	Holding company	Malaysia	70.1	70.1
	ASE Test Limited ("ASE Test")	Holding company	Singapore	10.2	10.2
	ASE Technology Partners, Limited	Liquidation completed in March 2024	British Cayman Islands	100.0	-
J&R Holding	Integrated Solutions Enterprise Europe	Trading company	Belgium	100.0	100.0
	ASE Test	Holding company	Singapore	89.8	89.8
	Omniquet Industrial Limited	Holding company	British Virgin Islands	8.4	8.4
	J&R Industrial Inc.	Engaged in leasing and investing activity	R.O.C.	100.0	100.0
Innosource Limited	ASE Japan Co., Ltd.	Engaged in the packaging and testing of semiconductors	Japan	100.0	100.0
	ASE (U.S.) Inc.	After-sales service and sales support	U.S.A.	100.0	100.0
	Global Advanced Packaging Technology Limited	Holding company	British Cayman Islands	100.0	100.0
	Omniquet Industrial Limited	Holding company	British Virgin Islands	20.6	20.6
	ASE (Shanghai) Inc. ("ASEMTL")	Engaged in the production of substrates	Shanghai, China	8.5	8.5
Omniquet Industrial Limited	ASE Enterprise Management (Shanghai) Inc. ("ASEEMSH")	Engaged in the leasing of properties and buildings, and was spun off from ASEMTL in November 2023	Shanghai, China	8.5	8.5
	ASE Corporation	Holding company	British Cayman Islands	100.0	100.0
	Alto Enterprises Limited	ASE Investment (Kun Shan) Limited	Kun Shan, China	100.0	100.0
Super Zone Holdings Limited	Advanced Semiconductor Engineering (China) Ltd.	Engaged in the packaging and testing of semiconductors, after-sale services, advisory and lease of factory	Shanghai, China	100.0	100.0
ASE Investment (Labuan) Inc.	ASE (Korea) Inc.	Engaged in the packaging and testing of semiconductors	Korea	100.0	100.0
ASE (Korea) Inc.	ASE Cheonan, Inc. ("CHE")	Engaged in the packaging and testing of semiconductors, and was acquired in August 2024 (Note 29)	Korea	-	100.0
ASE Technology Partners, Limited	ASE Technology Acquisition Corporation	Liquidation completed in March 2024	British Cayman Islands	100.0	-
ASE Test	ASE Test Holdings, Ltd.	Holding company	British Cayman Islands	100.0	100.0
ASE Test Holdings, Ltd.	ASE Holdings (Singapore) Pte Ltd	Holding company (merged by ASE Test in July 2024)	Singapore	100.0	-
	ASE Investment (Labuan) Inc.	Holding company	Malaysia	29.9	29.9
	ISE Labs, Inc.	Engaged in the testing of semiconductors	U.S.A.	100.0	100.0
ISE Labs, Inc.	ISE Services, Inc.	Engaged in turnkey services of semiconductors	U.S.A.	100.0	100.0
Global Advanced Packaging Technology Limited	ASE Assembly & Test (Shanghai) Limited ("ASESH")	Engaged in the packaging and testing of semiconductors and leasing of properties	Shanghai, China	100.0	100.0
ASESH	Wuxi Tongzhi Microelectronics Co., Ltd.	Engaged in the packaging and testing of semiconductors	Wuxi, China	100.0	100.0
	ISE Labs, China, Ltd.	Engaged in the testing of semiconductor	Shanghai, China	100.0	100.0
	Shanghai Ding Hui Real Estate Development Co., Ltd. ("DH")	Engaged in the development, construction and sale of real estate properties	Shanghai, China	60.0	60.0
	Shanghai Ding Qi Property Management Co., Ltd.	Engaged in the management of real estate properties	Shanghai, China	100.0	100.0
	Shanghai Ding Wei Real Estate Development Co., Ltd.	Engaged in the management of properties, parking lot business and leasing of properties for shopping center	Shanghai, China	100.0	100.0
DH	Shanghai Ding Yu Real Estate Development Co., Ltd.	Engaged in the management of properties, parking lot business and leasing of properties for shopping center	Shanghai, China	100.0	100.0
	Kun Shan Ding Hong Real Estate Development Co., Ltd.	Engaged in the development, construction and leasing of properties for shopping center	Kun Shan, China	100.0	100.0

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%)	
				December 31	
				2023	2024
	Shanghai Ding Xu Property Management Co., Ltd.	Engaged in the management of real estate properties	Shanghai, China	100.0	100.0
	Shanghai Ding Yao Estate Development Co., Ltd.	Engaged in the management of real estate properties	Shanghai, China	100.0	100.0
	Shanghai Ding Fan Business Management Co., Ltd.	Engaged in the management of commercial complex services and department store trading	Shanghai, China	100.0	100.0
ASE Corporation	ASE Mauritius Inc.	Holding company	Mauritius	100.0	100.0
	ASE Labuan Inc.	Holding company	Malaysia	100.0	100.0
ASE Mauritius Inc.	ASEMTL	Engaged in the production of substrates	Shanghai, China	91.5	91.5
	ASEEMSH	Engaged in the leasing of properties and buildings, and was spun off from ASEMTL in November 2023	Shanghai, China	91.5	91.5
ASE Labuan Inc.	ASE Electronics Inc.	Engaged in the production of substrates	R.O.C.	100.0	100.0
ASEMTL	Advanced Semiconductor Engineering (HK) Limited	Trading company	Hong Kong	100.0	100.0
	Universal Scientific Industrial (Shanghai) Co., Ltd. ("USISH")	Engaged in the designing, manufacturing and sales of electronic components	Shanghai, China	0.8	0.8
ASEEMSH	DH	Engaged in the development, construction and sale of real estate properties (spun off from ASEMTL in November 2023)	Shanghai, China	40.0	40.0
ASEPCAYMAN	Cyland Corp.	Engaged in the leasing of real estate	Philippines	-	39.8
USIINC	Huntington Holdings International Co., Ltd.	Holding company	British Virgin Islands	100.0	100.0
Huntington Holdings International Co., Ltd.	Unitech Holdings International Co., Ltd.	Holding company	British Virgin Islands	100.0	100.0
	Real Tech Holdings Limited	Holding company	British Virgin Islands	100.0	100.0
	Universal ABIT Holding Co., Ltd.	In the process of liquidation	British Cayman Islands	100.0	100.0
Real Tech Holdings Limited	USI Enterprise Limited ("USIE")	Engaged in the service of investment advisory and warehousing management	Hong Kong	100.0	100.0
USIE	USISH	Engaged in the designing, manufacturing and sales of electronic components	Shanghai, China	77.0	77.1
USISH	Universal Global Technology Co., Limited	Holding company	Hong Kong	100.0	100.0
	Universal Global Technology (Kunshan) Co., Ltd. ("UGKS")	Engaged in the designing and manufacturing of electronic components	Kun Shan, China	100.0	100.0
	Universal Global Technology (Shanghai) Co., Ltd.	Engaged in the processing and sales of computer and communication peripherals as well as business in import and export of goods and technology	Shanghai, China	100.0	100.0
	Universal Global Electronics (Shanghai) Co., Ltd.	Engaged in the sales of electronic components and telecommunications equipment	Shanghai, China	100.0	100.0
	USI Electronics (Shenzhen) Co., Ltd. ("USISZ")	Engaged in the design, manufacturing and sales of motherboards and computer peripherals	Shenzhen, China	50.0	50.0
	Universal Global Technology (Huizhou) Co., Ltd.	Engaged in the research and manufacturing of new electronic applications, communications, computers and other electronics products and also provided auxiliary technical services as well as import and export services	Huizhou, China	100.0	100.0
Universal Global Technology Co., Limited	FINANCIERE AFG ("FAFG")	Holding company	France	10.4	10.4
	Universal Global Industrial Co., Limited	Engaged in manufacturing, trading and investing activity	Hong Kong	100.0	100.0
	Universal Global Scientific Industrial Co., Ltd. ("UGTW")	Engaged in the manufacturing of components of telecommunication and cars and provision of related R&D services	R.O.C.	100.0	100.0
	USI America Inc.	Engaged in the manufacturing and processing of motherboards and wireless network communication and provision of related technical service	U.S.A.	100.0	100.0
	Universal Scientific Industrial De Mexico S.A. De C.V.	Engaged in the assembling of motherboards and computer components	Mexico	100.0	100.0
	USI Japan Co., Ltd.	Engaged in the manufacturing and sales of computer peripherals, integrated chip and other related accessories	Japan	100.0	100.0

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%)	
				December 31 2023	December 31 2024
Universal Global Industrial Co., Limited	USISZ	Engaged in the design, manufacturing and sales of motherboards and computer peripherals	Shenzhen, China	50.0	50.0
	Universal Global Electronics Co., Ltd. (“UGHK”)	Engaged in accepting and outsourcing orders as well as sales of electronic components and service of technical advisory (disposed to ASTEELFLASH HONG KONG LIMITED in January 2024)	Hong Kong	100.0	-
	Universal Scientific Industrial (France)	Engaged in investing activities	France	100.0	100.0
	UNIVERSAL SCIENTIFIC INDUSTRIAL VIETNAM COMPANY LIMITED	Engaged in IC assembly for wearable devices	Vietnam	100.0	100.0
	Universal Ample Technology Co., Limited	Holding company, and was established in May 2023	Hong Kong	75.1	75.1
	Universal Scientific Industrial De Mexico S.A. De C.V.	Engaged in the assembling of motherboards and computer components	Mexico	(Note 1)	(Note 1)
	UGTW	Engaged in the manufacturing, processing and sales of computers, computer peripherals and related accessories	R.O.C.	100.0	100.0
Universal Global Electronics (Shanghai) Co., Ltd.	USI Science and Technology (Shenzhen) Co., Ltd.	Engaged in the design of electronic components, service of technical advisory; wholesale of electronic components and communication peripherals as well as business in import and export of goods and management of properties	Shenzhen, China	100.0	100.0
Universal Ample Technology Co., Limited	Hirschmann Mobility Holding GmbH (renamed in January 2024, formerly named as setus 80.GmbH)	Holding company	Germany	100.0	100.0
Hirschmann Mobility Holding GmbH	Hirschmann Car Communication Holding S.a.r.l. (“Hirschmann”)	Holding company	Luxembourg	100.0	100.0
Hirschmann	Hirschmann Car Communication GmbH	Engaged in the research and development, manufacturing and sales of PCBAs and tuners	Germany	100.0	100.0
	Hirschmann Car Communication Kft.	Engaged in the manufacturing and sales of antennas, RF amplifiers, connectors and wave straps	Hungary	100.0	100.0
	Hirschmann Car Communication, Inc.	Engaged in the research and development, and sales marketing	U.S.A.	100.0	100.0
Hirschmann Car Communication GmbH	Hirschmann Car Communication S.A.S.	Engaged in the research and development, and sales marketing	France	100.0	100.0
	Hirschmann Car Communication (Shanghai) Co., Ltd.	Engaged in the sales of antennas, RF amplifiers and wave straps, PCBs, and tuners	Shanghai, China	100.0	100.0
Universal Scientific Industrial (France) FAFG	FAFG	Holding company	France	89.6	89.6
	MANUFACTURING POWER TUNISIA	Engaged in the design and manufacturing of electronic components	Tunisia	99.9	99.9
	ASTEELFLASH MEXICO S.A. de C.V.	Engaged in the design and manufacturing of electronic components	Mexico	99.9	99.9
	ASTEELFLASH (BEDFORD) LIMITED	Engaged in the design and manufacturing of electronic components	United Kingdom	100.0	100.0
	ASTEELFLASH FRANCE	Engaged in the design and manufacturing of electronic components	France	99.9	99.9
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	100.0	100.0
	ASTEELFLASH HONG KONG LIMITED	Holding company	Hong Kong	100.0	100.0
	Asteelflash Holding GmbH. (renamed in January 2024, formerly named as ASTEELFLASH GERMANY GmbH)	Engaged in the design and manufacturing of electronic components	Germany	100.0	100.0
	ASTEELFLASH US HOLDING CORP.	Holding company	U.S.A.	100.0	100.0
	AFERH TUNISIE	Engaged in the management, training and consulting of human resources	Tunisia	0.5	0.5

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%)	
				2023	2024
	ASTEEL ELECTRONICS MANUFACTURING SERVICES	Engaged in the design and manufacturing of electronic components	Tunisia	0.1	0.1
	ASTEELFLASH PLZEN S.R.O.	Engaged in the design and manufacturing of electronic components	Czech Republic	100.0	100.0
ASTEELFLASH (BEDFORD) LIMITED	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	(Note 1)	(Note 1)
ASTEELFLASH TECHNOLOGIE	ASTEELFLASH FRANCE	Engaged in the design and manufacturing of electronic components	France	(Note 1)	(Note 1)
ASTEELFLASH FRANCE	ASTEEL ELECTRONICS MANUFACTURING SERVICES	Engaged in the design and manufacturing of electronic components	Tunisia	99.9	99.9
	ASTEELFLASH TECHNOLOGIE	Engaged in projection of plastic and the design and manufacturing of industrial components	France	100.0	100.0
	ASTEELFLASH BRETAGNE	Engaged in the design and manufacturing of electronic components (liquidation completed in January 2024)	France	100.0	-
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	(Note 1)	(Note 1)
	AFERH TUNISIE	Engaged in the management, training and consulting of organization and human resources	Tunisia	99.5	99.5
	ASTEELFLASH MEXICO S.A. de C.V.	Engaged in the design and manufacturing of electronic components	Mexico	0.1	0.1
	MANUFACTURING POWER TUNISIA	Engaged in the design and manufacturing of electronic components	Tunisia	0.1	0.1
ASTEELFLASH HONG KONG LIMITED	Asteelflash Suzhou Co., Ltd.	Engaged in the design and manufacturing of electronic components	Suzhou, China	100.0	100.0
	UGHK	Engaged in accepting and outsourcing orders as well as sales of electronic components and service of technical advisory (acquired from Universal Global Technology Co., Limited in January 2024)	Hong Kong	-	100.0
UGHK	Universal Scientific Industrial Poland Sp. z o.o.	Engaged in the design and manufacturing of electronic components and new electronic applications	Poland	100.0	100.0
Asteelflash Suzhou Co., Ltd.	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	(Note 1)	(Note 1)
Asteelflash Holding GmbH.	ASTEELFLASH Germany GmbH. (renamed in January 2024, formerly named as ASTEELFLASH HERSFELD GmbH)	Engaged in the design and manufacturing of electronic components	Germany	100.0	100.0
	ASTEELFLASH DESIGN SOLUTIONS HAMBURG GmbH	Engaged in the design and manufacturing of electronic components	Germany	100.0	100.0
	EN ELECTRONICNETWORK SRL	Engaged in the design and manufacturing of electronic components	Romania	100.0	100.0
	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	(Note 1)	(Note 1)
ASTEELFLASH MEXICO S.A. de C.V.	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	(Note 1)	(Note 1)
ASTEELFLASH US HOLDING CORP.	ASTEELFLASH USA CORP.	Engaged in the design and manufacturing of electronic components	U.S.A.	100.0	100.0
ASTEELFLASH USA CORP.	ASTEELFLASH TUNISIE S.A.	Engaged in the design and manufacturing of electronic components	Tunisia	(Note 1)	(Note 1)
SPIL	SPIL (B.V.I.) Holding Limited	Engaged in investing activities	British Virgin Islands	100.0	100.0
	Siliconware Precision Malaysia Sdn. Bhd.	Engaged in the assembly and testing, and was established in September 2023	Malaysia	100.0	100.0

(Continued)

Name of Investor	Name of Investee	Main Businesses	Establishment and Operating Location	Percentage of Ownership (%)	
				December 31 2023	December 31 2024
SPIL (B.V.I.) Holding Limited	Siliconware USA, Inc.	Engaged in marketing activities	U.S.A.	100.0	100.0
	SPIL (Cayman) Holding Limited	Engaged in investing activities	British Cayman Islands	100.0	100.0
SPIL (Cayman) Holding Limited	Siliconware Technology (Suzhou) Limited	Engaged in the packaging and testing of semiconductors	Suzhou, China	100.0	100.0

(Concluded)

Note 1: The number of shares held was 1 share and the percentage of ownership was less than 0.1%.

e. Business combinations

Acquisitions of businesses are accounted for using the acquisition method. Acquisition-related costs are generally recognized in profit or loss as they are incurred.

Goodwill is measured as the excess of the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree, and the fair value of the acquirer's previously held equity interest in the acquiree (if any) over the net of the acquisition-date amounts of the identifiable assets acquired and the liabilities assumed. If, after re-assessment, the net of the acquisition-date amounts of the identifiable assets acquired and liabilities assumed exceeds the sum of the consideration transferred, the amount of any non-controlling interests in the acquiree and the fair value of the acquirer's previously held interest in the acquiree (if any), the excess is recognized immediately in profit or loss as a bargain purchase gain.

Where the consideration the Group transfers in a business combination includes assets or liabilities resulting from a contingent consideration arrangement, the contingent consideration is measured at its acquisition-date fair value and considered as part of the consideration transferred in a business combination. Changes in the fair value of the contingent consideration that qualify as measurement period adjustments are adjusted retrospectively, with the corresponding adjustments being made against goodwill or gains on bargain purchases. Measurement period adjustments are adjustments that arise from additional information obtained during the measurement period about facts and circumstances that existed as of the acquisition date. The measurement period does not exceed 1 year from the acquisition date.

The subsequent accounting for changes in the fair value of the contingent consideration that do not qualify as measurement period adjustments depends on how the contingent consideration is classified. Contingent consideration not classified as equity is remeasured at fair value at the end of subsequent reporting period with any gain or loss recognized in profit or loss.

When a business combination is achieved in stages, the Group's previously held equity interest in an acquiree is remeasured to fair value at acquisition date, and the resulting gain or loss, if any, is recognized in profit or loss or other comprehensive income. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are recognized on the same basis as would be required had those interest been directly disposed of by the Group.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted retrospectively during the measurement period, or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed at the acquisition date that, if known, would have affected the amounts recognized at that date.

Business combination involving entities under common control is not accounted for using the acquisition method but is accounted for at the carrying amounts of the entities. The Group elected not to restate comparative information of the prior period in the financial statements as the business combination was an organization restructure under common control.

f. Foreign currencies

In preparing the financial statements of each individual entity, transactions in currencies other than the entity's functional currency (i.e. foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions.

At each balance sheet date, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Exchange differences on monetary items arising from settlement or translation are recognized in profit or loss in the period in which they arise except for exchange differences on transactions entered into in order to hedge certain foreign currency risks.

Non-monetary items denominated in foreign currencies that are measured at fair value are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising from the retranslation of non-monetary items are included in profit or loss for the period except for exchange differences arising from the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which cases, the exchange differences are also recognized directly in other comprehensive income.

Non-monetary items denominated in a foreign currency and measured at historical cost are translated using the exchange rate at the date of the transaction, and are not retranslated.

For the purposes of presenting the consolidated financial statements, the assets and liabilities of the Group's foreign operations (including subsidiaries, associates and joint ventures in other countries that use currencies which are different from the currency of the Company) are translated into the New Taiwan dollars using exchange rates prevailing at each balance sheet date. Income and expense items are translated at the average exchange rates for the period. The resulting currency translation differences are recognized in other comprehensive income and accumulated in equity attributed to the owners of the Company and non-controlling interests as appropriate.

On the disposal of the Group's entire interest in a foreign operation, or a disposal involving the loss of control over a subsidiary that includes a foreign operation, or a partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation of which the retained interest becomes a financial asset, all of the exchange differences accumulated in equity in respect of that operation attributable to the owners of the Company are reclassified to profit or loss.

In relation to a partial disposal of a subsidiary that does not result in the Group losing control over the subsidiary, the proportionate share of accumulated exchange differences is re-attributed to the non-controlling interests of the subsidiary and is not recognized in profit or loss. For all other partial disposals, the proportionate share of the accumulated exchange differences recognized in other comprehensive income is reclassified to profit or loss.

Goodwill and fair value adjustments recognized on identifiable assets and liabilities of acquired foreign operation are treated as assets and liabilities of the foreign operation and translated at the rates of exchange prevailing at the end of each reporting period. Exchange differences are recognized in other comprehensive income.

g. Inventories and inventories related to real estate business

Inventories, including raw materials, supplies, work in process, finished goods, and materials and supplies in transit are stated at the lower of cost or net realizable value. Inventory write-downs are made by item, except for those that may be appropriate to group items of similar or related inventories. Net

realizable value is the estimated selling prices of inventories less all estimated costs of completion and estimated costs necessary to make the sale. Raw materials and supplies are recorded at moving average cost while work in process and finished goods are recorded at standard cost.

Inventories related to real estate business include land and buildings held for sale and construction in progress. Prior to the completion, the borrowing costs directly attributable to construction in progress are capitalized as part of the cost of the asset. Construction in progress is transferred to land and buildings held for sale upon completion. Land and buildings held for sale and construction in progress are stated at the lower of cost or net realizable value and related write-downs are made by item. The amounts received in advance for real estate properties are first recorded as advance receipts and then recognized as revenue when the construction is completed and the title and significant risk of the real estate properties are transferred to customers. Cost of sales of land and buildings held for sale are recognized based on the ratio of property sold to the total property developed.

h. Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence and that is neither a subsidiary nor an interest in a joint venture. Joint venture is a joint arrangement whereby the Group and other parties that have joint control of the arrangement have rights to the net assets of the arrangement.

The Group applies the equity method to investments in an associate and joint venture.

Under the equity method, investments in an associate and a joint venture are initially recognized at cost and adjusted thereafter to recognize the Group's share of the profit or loss and other comprehensive income of the associate and joint venture. The Group also recognizes the changes in the Group's share of equity of associates and joint venture.

Any excess of the cost of acquisition over the Group's share of the net fair value of the identifiable assets and liabilities of an associate or a joint venture at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment and is not amortized. Any excess of the Group's share of the net fair value of the identifiable assets and liabilities over the cost of acquisition after reassessment is recognized immediately in profit or loss.

When the Group subscribes for additional new shares of an associate and joint venture at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Group's proportionate interest in the associate and joint venture. The Group records such a difference as an adjustment to investments with the corresponding amount charged to gain or loss on disposal of investments accounted for using the equity method. When the Group reduces its ownership interest in an associate or a joint venture but the Group continues to use the equity method, the Group reclassifies to profit or loss the proportion of the gain or loss that had previously been recognised in other comprehensive income relating to that reduction in ownership interest if that gain or loss would be reclassified to profit or loss on the disposal of the related assets or liabilities.

When the Group's share of losses of an associate and a joint venture equals or exceeds its interest in that associate and joint venture (which includes any carrying amount of the investment accounted for using the equity method and long-term interests that, in substance, form part of the Group's net investment in the associate and joint venture), the Group discontinues recognizing its share of further losses. Additional losses and liabilities are recognized only to the extent that the Group has incurred legal obligations or constructive obligations, or made payments on behalf of that associate and joint venture.

The entire carrying amount of an investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount with its carrying amount. Any impairment loss recognized is not allocated to any asset, including goodwill, that 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 Group discontinues the use of the equity method from the date on which its investment ceases to be an associate and a joint venture. Any retained investment is measured at fair value at that date, and the fair value is regarded as the investment's fair value on initial recognition as a financial asset. The difference between the previous carrying amount of the associate and the joint venture attributable to the retained interest and its fair value is included in the determination of the gain or loss on disposal of the associate and the joint venture. The Group accounts for all amounts previously recognized in other comprehensive income in relation to that associate and joint venture on the same basis as would be required had that associate directly disposed of the related assets or liabilities. If an investment in an associate becomes an investment in a joint venture or an investment in a joint venture becomes an investment in an associate, the Group continues to apply the equity method and does not remeasure the retained interest.

When the Group transacts with its associate and joint venture, profits and losses resulting from the transactions with the associate and joint venture are recognized in the Group's consolidated financial statements only to the extent that interests in the associate and the joint venture are not related to the Group.

i. Property, plant and equipment

Except for land which is stated at cost, property, plant and equipment are stated at cost less accumulated depreciation and accumulated impairment.

Properties in the course of construction are carried at cost, less any recognized impairment loss. Cost includes professional fees and borrowing costs eligible for capitalization. Such assets are depreciated and classified to the appropriate categories of property, plant and equipment when completed and ready for their intended use.

Freehold land is not depreciated.

Depreciation of property, plant and equipment is recognized using the straight-line method. Each significant part is depreciated separately. The estimated useful lives, residual values and depreciation method are reviewed at each balance sheet date, with the effect of any changes in estimate accounted for on a prospective basis.

On derecognition of an item of property, plant and equipment, the difference between the sales proceeds and the carrying amount of the asset is recognized in profit or loss.

j. Investment properties

Investment properties are properties held to earn rental and/or for capital appreciation. Investment properties include right-of-use assets and properties under construction that meet the definition of investment properties.

Freehold investment properties are initially measured at cost, including transaction costs. Subsequent to initial recognition, investment properties are measured at cost less accumulated depreciation and accumulated impairment loss.

Investment properties acquired through leases are initially measured at cost, which comprises the initial measurement of lease liabilities adjusted for lease payments made on or before the commencement date, plus initial direct costs incurred and an estimate of costs needed to restore the underlying assets, less any lease incentives received. These investment properties are subsequently measured at cost less accumulated depreciation and accumulated impairment loss and adjusted for any remeasurement of the lease liabilities.

Depreciation is recognized using the straight-line method.

Investment properties under construction are measured at cost less accumulated impairment loss. Cost includes professional fees and borrowing costs eligible for capitalization. Depreciation of these assets commences when the assets are ready for their intended use.

For a transfer of classification from investment properties to property, plant and equipment and to right-of-use assets, the deemed cost of the property for subsequent accounting is its carrying amount at the commencement of owner-occupation.

For a transfer of classification from property, plant and equipment and right-of-use assets to investment properties, the deemed cost of an item of property for subsequent accounting is its carrying amount at the end of owner-occupation.

For a transfer of classification from inventories to investment properties, the deemed cost of an item of property for subsequent accounting is its carrying amount at the inception of an operating lease.

On derecognition of an investment property, the difference between the net disposal proceeds and the carrying amount of the asset is included in profit or loss.

k. Goodwill

Goodwill arising from an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment loss.

For the purposes of impairment testing, goodwill is allocated to each of the Group's cash-generating units or groups of cash-generating units (referred to as "cash-generating unit") that is expected to benefit from the synergies of the combination.

A cash-generating unit to which goodwill has been allocated is tested for impairment annually or more frequently whenever there is an indication that the unit may be impaired, by comparing its carrying amount, including the attributed goodwill, with its recoverable amount. However, if the goodwill allocated to a cash-generating unit was acquired in a business combination during the current annual period, that unit shall be tested for impairment before the end of the current annual period. If the recoverable amount of the cash-generating unit is less than its carrying amount, the impairment loss is allocated first to reduce the carrying amount of any goodwill allocated to the unit and then pro rata to the other assets of the unit based on the carrying amount of each asset in the unit. Any impairment loss is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

l. Other intangible assets

1) Separate acquisition

Other intangible assets with finite useful lives acquired separately are initially measured at cost and subsequently measured at cost less accumulated amortization and accumulated impairment loss. Other intangible assets are amortized using the straight-line method over their estimated useful lives. The estimated useful lives, residual values, and amortization methods are reviewed at each balance sheet date, with the effect of any changes in estimate being accounted for on a prospective basis.

2) Acquired through business combinations

Other intangible assets acquired in a business combination and recognized separately from goodwill are initially recognized at their fair value at the acquisition date which is regarded as their cost. Subsequent to initial recognition, they are measured on the same basis as intangible assets that are acquired separately.

3) Derecognition

On derecognition of an intangible asset, the difference between the net disposal proceeds and the carrying amount of the asset is recognized in profit or loss.

m. Impairment of property, plant and equipment, right-of-use asset, investment properties and intangible assets other than goodwill

At each balance sheet date, the Group reviews the carrying amounts of its property, plant and equipment, right-of-use asset, investment properties and intangible assets, excluding goodwill, 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 Group estimates the recoverable amount of the cash-generating unit to which the asset belongs. Corporate assets are allocated to the individual cash-generating units on a reasonable and consistent basis of allocation. The recoverable amount is the higher of fair value less costs to sell and value in use. 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, with the resulting impairment loss recognized in profit or loss.

When an impairment loss is subsequently reversed, the carrying amount of the asset or cash-generating unit is increased to the revised estimate of its recoverable amount, but only to the extent of 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.

n. Financial instruments

Financial assets and financial liabilities are recognized when the Group becomes a party to the contractual provisions of the instruments.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issuance of financial assets and financial liabilities (other than financial assets and financial liabilities at FVTPL) 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 FVTPL are recognized immediately in profit or loss.

1) Financial assets

All regular way purchases or sales of financial assets are recognized and derecognized on a settlement date basis.

a) Measurement categories

Financial assets held by the Group are classified into the following categories: financial assets at FVTPL, financial assets at amortized cost and investments in debt instruments and equity instruments at FVTOCI.

i. Financial asset at FVTPL

Financial asset is classified as at FVTPL when the financial asset is mandatorily classified. The Group's financial assets mandatorily classified as at FVTPL include investments in equity instruments which are not designated as at FVTOCI and debt instruments that do not meet the amortized cost criteria or the FVTOCI criteria.

Financial assets at FVTPL are subsequently measured at fair value, and any dividends or interest earned on such financial assets are recognized in other income; any remeasurement gains or losses on such financial assets are recognized in other gains or losses.

Fair value is determined in the manner described in Note 34.

ii. Financial assets at amortized cost

Financial assets that meet the following conditions are subsequently measured at amortized cost:

- i) The financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- ii) The contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent to initial recognition, financial assets at amortized cost, including cash and cash equivalents, trade receivables at amortized cost, other receivables and other financial assets, are measured at amortized cost, which equals to gross carrying amount determined using the effective interest method less any impairment loss. Exchange differences are recognized in profit or loss.

Interest income is calculated by applying the effective interest rate to the gross carrying amount of a financial asset, except for:

- i) Purchased or originated credit-impaired financial assets, for which interest income is calculated by applying the credit-adjusted effective interest rate to the amortized cost of the financial asset; and
- ii) Financial assets that are not credit-impaired on purchase or origination but have subsequently become credit-impaired, for which interest income is calculated by applying the effective interest rate to the amortized cost of such financial assets in subsequent reporting periods.

A financial asset is credit-impaired when one or more of the following events have occurred:

- i) Significant financial difficulty of the issuer or the borrower;
- ii) Breach of contract, such as a default;
- iii) It is becoming probable that the borrower will enter bankruptcy or undergo a financial reorganization; or
- iv) The disappearance of an active market for that financial asset because of financial difficulties.

Cash equivalents include time deposits with original maturities within 3 months from the date of acquisition, which are highly liquid, readily convertible to a known amount of cash and are subject to an insignificant risk of changes in value. These cash equivalents are held for the purpose of meeting short-term cash commitments.

iii. Investments in debt instruments at FVTOCI

For the Group's debt instruments that meet the following conditions are subsequently measured at FVTOCI:

- i) the debt instrument is held within a business model whose objective is achieved by both the collecting of contractual cash flows and the selling of the financial assets; and
- ii) the contractual terms of the debt instrument give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Investments in debt instruments at FVTOCI are subsequently measured at fair value. Changes in the carrying amounts of these debt instruments relating to changes in foreign currency exchange rates, interest income calculated using the effective interest method and impairment losses or reversals 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 the investment is disposed of.

iv. Investments in equity instruments at FVTOCI

On initial recognition, the Group makes an irrevocable election to designate investments in equity instruments as at FVTOCI. Designation at FVTOCI is not permitted if the equity investment is held for trading or if it is contingent consideration recognized by an acquirer in a business combination.

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. The cumulative gain or loss will not be reclassified to profit or loss on disposal of the equity investments, instead, they will be transferred to retained earnings.

Dividends on these investments in equity instruments are recognized in profit or loss when the Group's right to receive the dividends is established, unless the dividends clearly represent a recovery of part of the cost of the investment.

b) Impairment of financial assets and contract assets

At each balance sheet date, the Group recognizes a loss allowance for expected credit losses on financial assets at amortized cost (including trade receivables) and investments in debt instruments that are measured at FVTOCI and contract assets.

The Group always recognizes lifetime Expected Credit Loss ("ECL") for trade receivables and contract assets. For all other financial instruments, the Group recognizes lifetime ECL when there has been a significant increase in credit risk since initial recognition. If, on the other hand, the credit risk on the financial instrument has not increased significantly since initial recognition, the Group measures the loss allowance for that financial instrument at an amount equal to 12-month ECL.

Expected credit losses reflect the weighted average of credit losses with the respective risks of a default occurring as the weights. Lifetime ECL represents the expected credit losses that will result from all possible default events over the expected life of a financial instrument. In contrast, 12-month ECL represents the portion of lifetime ECL that is expected to result from default events on a financial instrument that are possible within 12 months after the reporting date.

The Group recognizes an impairment gain or 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 Group derecognizes a financial asset only when the contractual rights to the cash flows from the asset expire or when it transfers the financial asset and substantially all the risks and rewards of ownership of the 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 which 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 difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss, and the cumulative gain or loss which had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

2) Equity instruments

Debt and equity instruments issued by a group entity 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 issued by a group entity are recognized at the proceeds received, net of direct issue costs.

Repurchase of the Company's own equity instruments is recognized in and deducted directly from equity and calculated separately by repurchase category. No gain or loss is recognized in profit or loss on the purchase, sale, issue or cancellation of the Company's own equity instruments.

3) Financial liabilities

a) Subsequent measurement

All financial liabilities are measured at amortized cost using the effective interest method except for:

Financial liabilities are classified as at FVTPL when such financial liabilities are held for trading. Financial liabilities held for trading are stated at fair value, and any gains or losses on such financial liabilities are recognized in other gains or losses.

Fair value is determined in the manner described in Note 34.

b) Derecognition of financial liabilities

The difference between the carrying amount of a financial liability derecognized and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss.

4) Derivative financial instruments

The Group enters into a variety of derivative financial instruments to manage its exposure to foreign exchange rate risks, including forward exchange contracts and swap contracts.

Derivatives are initially recognized at fair value at the date on which 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 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 hedging relationship. When the fair value of a derivative financial instrument is positive, the derivative is recognized as a financial asset; when the fair value of a derivative financial instrument is negative, the derivative is recognized as a financial liability.

Derivatives embedded in hybrid contracts that contain financial asset hosts that is within the scope of IFRS 9 are not separated; instead, the classification is determined in accordance with the entire hybrid contract. Derivatives embedded in non-derivative host contracts that are not financial assets that is within the scope of IFRS 9 (e.g. financial liabilities) are treated as separate derivatives when they meet the definition of a derivative, their risks and characteristics are not closely related to those of the host contracts and the host contracts are not measured at FVTPL.

5) Convertible bonds issued by the subsidiaries

The component parts of compound instruments (i.e., convertible bonds) issued by the subsidiary are classified separately as financial liabilities and equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

On initial recognition, the fair value of the liability component is estimated using the prevailing market interest rate for similar non-convertible instruments. This amount is recorded as a liability on an amortized cost basis using the effective interest method until extinguished upon conversion or upon the instrument's maturity date. Any embedded derivative liability is measured at fair value.

The conversion option classified as equity is determined by deducting the amount of the liability component from the fair value of the compound instrument as a whole. This is recognized and included in non-controlling interests, and is not subsequently remeasured. When the conversion option remains unexercised at maturity, the balance recognized in non-controlling interests will be transferred to capital surplus - the change of interest in subsidiaries.

Transaction costs that relate to the issuance of the convertible bonds are allocated to the liability and equity components in proportion to the allocation of the gross proceeds. Transaction costs relating to the equity component are recognized directly in non-controlling interests. Transaction costs relating to the liability component are included in the carrying amount of the liability component.

o. Hedge accounting

The Group designates certain non-derivatives as hedging instruments in respect of foreign currency risk in fair value hedges and hedges of net investments in foreign operations.

1) Fair value hedges

Gains or losses on 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 asset or liability that are attributable to the hedged risk. The change in the fair value of the hedging instrument and the change in the hedged item attributable to the hedged risk are recognized in profit or loss in the line item relating to the hedged item.

The Group 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.

2) Hedges of net investments in foreign operations

Hedges of net investments in foreign operations are accounted for similarly to cash flow hedges. 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.

p. Revenue recognition

The Group identifies the contracts with customers, allocates transaction prices to performance obligations and, when performance obligations are satisfied, recognizes revenues at fixed amounts as agreed in the contracts with taking estimated volume discounts into consideration.

For contracts where the period between the date on which the Group transfers a promised good or service to a customer and the date on which the customer pays for that good or service is one year or less, the Group does not adjust the promised amount of consideration for the effects of a significant financing component.

The Group's duration of contracts with customers is expected to be one year or less, and the consideration from contracts with customers is included in transaction price and, therefore, can apply the practical expedient that not to disclose the performance obligations including (i) the aggregate amount of the transaction price allocated to the performance obligations that are not fully satisfied or have partially completed at the end of the reporting period, and (ii) the expected timing for recognition of revenue.

The Group's operating revenues include revenues from sale of goods and services as well as sale and leasing of real estate properties.

When customers control goods while the packaging and testing are in progress, the Group measures the progress on the basis of costs incurred relative to the total expected costs as there is a direct relationship between the costs incurred and the progress of satisfying the performance obligations. Revenue and contract assets are recognized during the packaging and testing process and contract assets are reclassified to trade receivables when the packaging and testing are completed or when the goods are shipped upon customer's request.

The Group recognizes revenues and trade receivables when the goods are shipped or when the goods are delivered to the customer's specified location because it is the time when the customer has full discretion over the manner of distribution and price to sell the goods, has the primary responsibility for sales to future customers and bears the risks of obsolescence.

Revenues from sale of real estate properties are recognized when customers purchase real estate properties and complete the transfer procedures. Revenues from leasing real estate properties are recognized during leasing periods on the straight-line basis.

q. Leases

At the inception of a contract, the Group assesses whether the contract is, or contains, a lease.

For a contract that contains a lease component and non-lease components, the Group elects to account for the lease and non-lease components as a single lease component.

1) The Group as lessor

Leases are classified as finance leases whenever the terms of a lease transfer substantially all the risks and rewards of ownership to the lessee. All other leases are classified as operating leases.

When the Group subleases a right-of-use asset, the sublease is classified by reference to the right-of-use asset arising from the head lease, not with reference to the underlying asset. However, if the head lease is a short-term lease that the Group, as a lessee, has accounted for applying recognition exemption, the sublease is classified as an operating lease.

Lease payments (less any lease incentives payable) from operating leases are recognized as income on a straight-line basis over the terms of the relevant leases. Initial direct costs incurred in obtaining operating leases are added to the carrying amounts of the underlying assets and recognized as expenses on a straight-line basis over the lease terms.

2) The Group as lessee

The Group recognizes right-of-use assets and lease liabilities for all leases at the commencement date of a lease, except for short-term leases and low-value asset leases accounted for applying a recognition exemption where lease payments are recognized as expenses on a straight-line basis over the lease terms.

Right-of-use assets are initially measured at cost, which comprises the initial measurement of lease liabilities adjusted for lease payments made on or before the commencement date, plus any initial direct costs incurred and an estimate of costs needed to restore the underlying assets, and less any lease incentives received. Right-of-use assets are subsequently measured at cost less accumulated depreciation and impairment losses and adjusted for any remeasurement of the lease liabilities. Right-of-use assets are presented on a separate line in the consolidated balance sheets. With respect to the recognition and measurement of right-of-use assets that meet the definition of investment properties, refer to the aforementioned accounting policies for investment properties.

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. However, if leases transfer ownership of the underlying assets to the Group by the end of the lease terms or if the costs of right-of-use assets reflect that the Group will exercise a purchase option, the Group depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are initially measured at the present value of the lease payments, which comprise fixed payments, in-substance fixed payments, variable lease payments which depend on an index or a rate, residual value guarantees, the exercise price of a purchase option if the Group is reasonably certain to exercise that option, and payments of penalties for terminating a lease if the lease term reflects such termination, less any lease incentives receivable. The lease payments are discounted using the interest rate implicit in a lease, if that rate can be readily determined. If that rate cannot be readily determined, the lessee's incremental borrowing rate will be used.

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 the amounts expected to be payable under a residual value guarantee, a change in the

assessment of an option to purchase an underlying asset, or a change in future lease payments resulting from a change in an index or a rate used to determine those payments, the Group remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. However, if the carrying amount of the right-of-use assets is reduced to zero, any remaining amount of the remeasurement is recognized in profit or loss. For a lease modification that is not accounted for as a separate lease, the Group accounts for the remeasurement of the lease liability by (a) decreasing the carrying amount of the right-of-use assets of lease modifications that decreased the scope of the lease, and recognizing in profit or loss any gain or loss on the partial or full termination of the lease; (b) making a corresponding adjustment to the right-of-use asset of all other lease modifications. Lease liabilities are presented on a separate line in the consolidated balance sheets.

Variable lease payments that do not depend on an index or a rate are recognized as expenses in the periods in which they are incurred.

r. Borrowing costs

Borrowing costs directly attributable to the acquisition, construction or production of qualifying assets are added to the cost of those assets, until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

Other than stated above, all other borrowing costs are recognized in profit or loss in the period in which they are incurred.

s. Government grants

Government grants are not recognized until there is reasonable assurance that the Group will comply with the conditions attaching to them and that the grants will be received.

Government grants related to income are recognized in other income on a systematic basis over the periods in which the Group recognizes as expenses the related costs for which the grants are intended to compensate. Specifically, government grants whose primary condition is that the Group should purchase, construct or otherwise acquire non-current assets are recognized as deferred revenue in the consolidated financial statements and transferred to profit or loss on a systematic and rational basis over the useful lives of the related assets.

Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Group with no future related costs are recognized in profit or loss in the period in which they become receivable.

The benefit of a government loan received at a below-market rate of interest is treated as a government grant, measured as the difference between the proceeds received and the fair value of the loan based on prevailing market interest rates.

t. Employee benefits

1) 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 the related services.

2) Retirement benefits

Payments to defined contribution retirement benefit plans are recognized as expenses when

employees have rendered services entitling them to the contributions.

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 past 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 (asset) represents the actual deficit (surplus) in the Group's defined benefit plan. Any surplus resulting from this calculation is limited to the present value of any refunds from the plans or reductions in future contributions to the plans.

u. Share-based payment arrangements

The fair value at the grant date of the employee share options and restricted stocks for employees is expensed on a straight-line basis over the vesting period, based on the Group's best estimate of the number of options or shares that are expected to ultimately vest, with a corresponding increase in capital surplus - employee share options or non-controlling interests (employee share options issued by subsidiaries) and other equity - unearned employee benefits or non-controlling interests (restricted stocks for employees issued by subsidiaries). It is recognized as an expense in full at the grant date if vesting immediately. The grant date of issued ordinary shares for cash which are reserved for employees is the date on which the number of shares that the employees purchase is confirmed.

When restricted stocks for employees are issued, other equity - unearned employee benefits is recognized on the grant date, with a corresponding increase in capital surplus - restricted stocks for employees.

At each balance sheet date, the Group revises its estimate of the number of employee share options and restricted stocks for employees expected to vest. The impact of the revision of the original estimates is recognized in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment to the capital surplus - employee share options or non-controlling interests (employee share options issued by subsidiaries) and other equity - unearned employee benefits or non-controlling interests (restricted stocks for employees issued by subsidiaries).

v. Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

1) Current tax

Income tax payable (recoverable) is based on taxable profit (loss) for the year determined according to the applicable tax laws of each tax jurisdiction. Taxable profit differs from net profit as reported in profit or loss because it excludes items of income or expense that are taxable or deductible in other years and it further excludes items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

2) 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. If a temporary difference arises from the initial recognition (other than in a business combination) of assets and liabilities in a transaction that affects neither the taxable profit nor the accounting profit, and at the time of the transaction, does not give rise to equal taxable and deductible temporary differences, the resulting deferred tax asset or liability is not recognized. In addition, a deferred tax liability is not recognized on taxable temporary differences arising from the initial recognition of goodwill.

Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, unused loss carryforwards and unused tax credits for capital expenditure 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 Group is able to control the reversal of the temporary differences and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary difference associated with such investments and interests 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 each balance sheet date 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 assets to be recovered. A previously unrecognized deferred tax asset is also reviewed at each balance sheet date and recognized to the extent that it has become probable that future taxable profit will allow 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 period in which the liabilities are settled or assets are realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the balance sheet date. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Group expects, at the balance sheet date, to recover or settle the carrying amount of its assets and liabilities.

The Group has applied the exception from the recognition and disclosure of deferred tax assets and liabilities relating to Pillar Two income taxes. Accordingly, the Group neither recognizes nor discloses information about deferred tax assets and liabilities related to Pillar Two income taxes.

3) Current and deferred tax

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.

Where current tax or deferred tax arises from the initial accounting for a business combination, the tax effect is included in the accounting for the business combination.

w. U.S. Dollar Amounts

A translation of the consolidated financial statements into U.S. dollars is included solely for the convenience of the readers and has been translated from New Taiwan dollar (NT\$) at the exchange rate as set forth in the statistical release by the Federal Reserve Board of the United States, which was NT\$32.79 to US\$1.00 as of December 31, 2024. The translation should not be construed as a representation that the NT\$ amounts have been, could have been, or could in the future be, converted into U.S. dollars at this or any other rate of exchange.

5. MATERIAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION UNCERTAINTY

In the application of the Group's accounting policies, management is required to make judgments, estimates and assumptions on the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and underlying 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 estimates are revised if the revisions affect only that year or in the year of the revisions and future years if the revisions affect both current and future years.

Impairment of goodwill

Determining whether goodwill is impaired requires an estimation of the value in use of the cash-generating units to which goodwill has been allocated. The calculation of the value in use requires management to estimate the future cash flows expected to be generated from the cash-generating units and a suitable discount rate in order to calculate the present value. Where the change in facts and circumstances results in downward revision of actual future cash flows or upward revision of discount rates, a material impairment loss may arise.

6. CASH AND CASH EQUIVALENTS

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Cash on hand	\$ 4,623	\$ 5,204	\$ 159
Checking accounts and demand deposits	55,972,581	54,752,776	1,669,801
Cash equivalents (time deposits with original maturity of less than three months)	<u>11,307,314</u>	<u>21,734,844</u>	<u>662,850</u>
	<u>\$ 67,284,518</u>	<u>\$ 76,492,824</u>	<u>\$ 2,332,810</u>

7. FINANCIAL INSTRUMENTS AT FAIR VALUE THROUGH PROFIT OR LOSS (FVTPL)

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Financial assets mandatorily classified as at FVTPL			
Derivative instruments (non-designated hedges)			
Swap contracts	\$ 1,453,868	\$ 4,282,512	\$ 130,604
Forward exchange contracts	161,924	258,362	7,879
Non-derivative financial assets			
Quoted shares	2,099,844	2,898,751	88,404
Private-placement funds	1,796,015	1,503,382	45,849
Unquoted shares	747,960	863,484	26,334
Open-end mutual funds	307,669	590,346	18,004

(Continued)

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Hybrid financial assets			
Convertible notes	\$ 61,410	\$ 360,635	\$ 10,998
Preferred shares with warrants	-	65,570	2,000
Documentary investment agreement	-	9,000	274
	<u>\$ 6,628,690</u>	<u>\$ 10,832,042</u>	<u>\$ 330,346</u>
Current	\$ 4,084,715	\$ 8,390,606	\$ 255,889
Non-current	<u>2,543,975</u>	<u>2,441,436</u>	<u>74,457</u>
	<u>\$ 6,628,690</u>	<u>\$ 10,832,042</u>	<u>\$ 330,346</u>
<hr/> Financial liabilities held for trading <hr/>			
Derivative instruments (non-designated hedges)			
Swap contracts	\$ 1,183,469	\$ 179,967	\$ 5,488
Forward exchange contracts	<u>118,873</u>	<u>63,785</u>	<u>1,945</u>
	1,302,342	243,752	7,433
Contingent considerations (Note 29)	-	589,117	17,966
	<u>\$ 1,302,342</u>	<u>\$ 832,869</u>	<u>\$ 25,399</u>
Current	\$ 1,302,342	\$ 324,278	\$ 9,889
Non-current	<u>-</u>	<u>508,591</u>	<u>15,510</u>
	<u>\$ 1,302,342</u>	<u>\$ 832,869</u>	<u>\$ 25,399</u>

- a. At each balance sheet date, outstanding swap contracts not accounted for hedge accounting were as follows:

Currency	Maturity Period	Notional Amount (In Thousands)
<hr/> December 31, 2023 <hr/>		
Sell RMB/Buy US\$	2024.01	RMB869,750/US\$122,000
Sell HKD/Buy US\$	2024.03	HKD11,340/US\$1,455
Sell JPY/Buy US\$	2024.03	JPY385,320/US\$2,746
Sell NT\$/Buy US\$	2024.01-2024.12	NT\$89,691,195/US\$2,988,500
Sell US\$/Buy KRW	2024.01	US\$31,000/KRW40,420,300
Sell US\$/Buy NT\$	2024.01	US\$353,290/NT\$10,965,140
<hr/> December 31, 2024 <hr/>		
Sell RMB/Buy US\$	2025.01	RMB830,661/US\$114,000
Sell HKD/Buy US\$	2025.02-2025.03	HKD22,830/US\$2,939
Sell JPY/Buy US\$	2025.01	JPY1,035,320/US\$6,994
Sell MXN/Buy US\$	2025.01	MXN923,715/US\$45,000
Sell NT\$/Buy US\$	2025.01-2025.12	NT\$108,539,284/US\$3,496,000
Sell US\$/Buy KRW	2025.01-2025.03	US\$69,000/KRW99,002,500
Sell US\$/Buy NT\$	2025.01-2025.02	US\$254,440/NT\$8,221,338

- b. At each balance sheet date, outstanding forward exchange contracts not accounted for hedge accounting were as follows:

Currency	Maturity Period	Notional Amount (In Thousands)
<hr/> December 31, 2023 <hr/>		
Sell RMB/Buy JPY	2024.01	RMB8,292/JPY165,000
Sell RMB/Buy NT\$	2024.02-2024.03	RMB2,628/NT\$11,468
Sell RMB/Buy US\$	2024.01	RMB132,074/US\$18,539
Sell EUR/Buy CZK	2024.01-2024.06	EUR2,435/CZK60,000
Sell NT\$/Buy US\$	2024.01-2024.03	NT\$4,647,815/US\$150,000
Sell US\$/Buy RMB	2024.01-2024.02	US\$297,286/RMB2,118,620
Sell US\$/Buy JPY	2024.01	US\$33,315/JPY4,770,080
Sell US\$/Buy KRW	2024.01	US\$95,710/KRW123,622,879
Sell US\$/Buy MYR	2024.01	US\$16,000/MYR74,547
Sell US\$/Buy NT\$	2024.01-2024.03	US\$67,170/NT\$2,079,110
Sell US\$/Buy PLN	2024.01-2024.06	US\$6,000/PLN26,130
Sell US\$/Buy SGD	2024.01-2024.02	US\$12,500/SGD16,770
<hr/> December 31, 2024 <hr/>		
Sell RMB/Buy JPY	2025.01	RMB7,888/JPY165,000
Sell RMB/Buy NT\$	2025.01-2025.03	RMB10,000/NT\$44,542
Sell RMB/Buy US\$	2025.01	RMB130,495/US\$18,000
Sell EUR/Buy TND	2025.01-2025.12	EUR7,074/TND24,000
Sell EUR/Buy US\$	2025.01-2025.12	EUR5,435/US\$6,000
Sell NT\$/Buy US\$	2025.01-2025.02	NT\$3,545,010/US\$110,000
Sell US\$/Buy RMB	2025.01-2025.02	US\$436,000/RMB3,172,282
Sell US\$/Buy EUR	2025.01	US\$3,165/EUR3,000
Sell US\$/Buy JPY	2025.01-2025.02	US\$54,020/JPY8,335,356
Sell US\$/Buy KRW	2025.01	US\$7,000/KRW10,071,340
Sell US\$/Buy MYR	2025.01	US\$6,000/MYR26,758
Sell US\$/Buy NT\$	2025.01-2025.03	US\$81,610/NT\$2,653,807
Sell US\$/Buy SGD	2025.01-2025.03	US\$13,100/SGD17,506

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME (FVTOCI)

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Investments in equity instruments at FVTOCI	\$ 620,831	\$ 12,933,733	\$ 394,441
Investments in debt instruments at FVTOCI	<u>1,042,906</u>	<u>1,025,760</u>	<u>31,283</u>
	<u>\$ 1,663,737</u>	<u>\$ 13,959,493</u>	<u>\$ 425,724</u>

a. Investments in equity instruments at FVTOCI

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Unquoted ordinary shares	\$ 607,528	\$ 12,846,151	\$ 391,770
Taiwan Innovation Board (TIB) quoted ordinary shares	-	72,774	2,219
Unquoted preferred shares	<u>13,303</u>	<u>14,808</u>	<u>452</u>
	<u>\$ 620,831</u>	<u>\$ 12,933,733</u>	<u>\$ 394,441</u>

b. Investments in debt instruments at FVTOCI

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Unsecured cumulative subordinate corporate bonds	<u>\$ 1,042,906</u>	<u>\$ 1,025,760</u>	<u>\$ 31,283</u>

The Group purchased 1,000 units of the abovementioned corporate bonds with par value of NT\$1,000 thousand (US\$31 thousand) with annual interest rate and effective interest rate at 3.5% and 3.2%, respectively.

9. CREDIT RISK MANAGEMENT FOR INVESTMENTS IN DEBT INSTRUMENTS

The Group's investment in unsecured cumulative subordinate corporate bonds is rated the equivalent of investment grade or higher and has low credit risk for impairment assessment.

There was no significant increase in credit risk of such debt instrument since initial recognition leading to changes in interest rates and terms, and there was also no significant change in bond issuer's operation affecting the ability performing debt obligation. Therefore, no expected credit losses existed. The Group reviews changes in bond yields and other public information periodically and makes an assessment whether there has been a significant increase in lifetime Expected Credit Loss ("ECL") since initial recognition.

10. TRADE RECEIVABLES, NET

	December 31		
	2023	2024	
	(Retrospectively Adjusted)		
	NT\$	NT\$	US\$ (Note 4)
At amortized cost			
Gross carrying amount	\$ 94,232,032	\$ 107,294,445	\$ 3,272,170
Less: Allowance for impairment loss	<u>332,756</u>	<u>407,133</u>	<u>12,416</u>
	93,899,276	106,887,312	3,259,754
At FVTOCI	<u>5,637,485</u>	<u>6,532,508</u>	<u>199,222</u>
	<u>\$ 99,536,761</u>	<u>\$ 113,419,820</u>	<u>\$ 3,458,976</u>

a. Trade receivables

1) At amortized cost

The Group's average credit terms granted to the customers were 30 to 90 days. The Group evaluates the risk and probability of credit loss of trade receivables by reference to the Group's past experiences, financial condition of each customer, as well as competitive advantage and future development of the industry in which the customer operates. The Group then reviews the recoverable amount of each individual trade receivable at each balance sheet date to ensure that adequate allowance is made for possible irrecoverable amounts. In this regard, management believes the Group's credit risk was significantly reduced.

The Group measures the loss allowance for trade receivables at an amount equals to lifetime ECLs. The expected credit losses on trade receivables are estimated using a provision matrix by reference to past default experience of the debtor and an analysis of the debtor's current financial position, adjusted for general economic conditions of the industry in which the debtors operate and an assessment of both the current as well as the forecast direction of economic conditions at each balance sheet date. As the Group's historical credit loss experience shows significantly different loss patterns for different customer groups, the provision matrix for expected credit loss allowance based on trade receivables due status is further distinguished according to the Group's different customer base.

The Group writes off a trade receivable when there is information indicating that the debtor is in severe financial difficulty and there is no realistic prospect of recovery. For trade receivables that have been written off, the Group continues to engage in enforcement activity to attempt to recover the receivables due. Where recoveries are made, these are recognized in profit or loss.

The following table details the loss allowance of trade receivables based on the Group's provision matrix.

December 31, 2023

	Not Past Due	Overdue 1 to 30 days	Overdue 31 to 90 Days	Overdue Over 91 Days	Individually Impaired	Total
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
Expected credit loss rate	0%	0%-10%	0%-70%	1%-100%	0%-100%	
Gross carrying amount	\$ 87,272,289	\$ 4,915,827	\$ 1,334,335	\$ 251,769	\$ 457,812	\$ 94,232,032
Loss allowance (Lifetime ECLs) (Retrospectively Adjusted)	<u>(11,118)</u>	<u>(1,521)</u>	<u>(17,260)</u>	<u>(131,650)</u>	<u>(171,207)</u>	<u>(332,756)</u>
	<u>\$ 87,261,171</u>	<u>\$ 4,914,306</u>	<u>\$ 1,317,075</u>	<u>\$ 120,119</u>	<u>\$ 286,605</u>	<u>\$ 93,899,276</u>

December 31, 2024

	Not Past Due NT\$	Overdue 1 to 30 days NT\$	Overdue 31 to 90 Days NT\$	Overdue Over 91 Days NT\$	Individually Impaired NT\$	Total NT\$
Expected credit loss rate	0%	0%-10%	0%-70%	1%-100%	0%-100%	
Gross carrying amount	\$ 98,650,390	\$ 6,644,672	\$ 1,431,402	\$ 472,061	\$ 95,920	\$ 107,294,445
Loss allowance (Lifetime ECLs)	(31,490)	(4,262)	(57,708)	(229,042)	(84,631)	(407,133)
	<u>\$ 98,618,900</u>	<u>\$ 6,640,410</u>	<u>\$ 1,373,694</u>	<u>\$ 243,019</u>	<u>\$ 11,289</u>	<u>\$ 106,887,312</u>
	Not Past Due US\$ (Note 4)	Overdue 1 to 30 days US\$ (Note 4)	Overdue 31 to 90 Days US\$ (Note 4)	Overdue Over 91 Days US\$ (Note 4)	Individually Impaired US\$ (Note 4)	Total US\$ (Note 4)
Expected credit loss rate	0%	0%-10%	0%-70%	1%-100%	0%-100%	
Gross carrying amount	\$ 3,008,551	\$ 202,643	\$ 43,654	\$ 14,397	\$ 2,925	\$ 3,272,170
Loss allowance (Lifetime ECLs)	(960)	(130)	(1,760)	(6,985)	(2,581)	(12,416)
	<u>\$ 3,007,591</u>	<u>\$ 202,513</u>	<u>\$ 41,894</u>	<u>\$ 7,412</u>	<u>\$ 344</u>	<u>\$ 3,259,754</u>

The movements of the loss allowance of trade receivables were as follows:

	December 31			
	2023 (Retrospectively Adjusted)		2024	
	2022 NT\$	NT\$	NT\$	US\$ (Note 4)
Balance at January 1	\$ 103,353	\$ 164,408	\$ 332,756	\$ 10,148
Remeasurement of loss allowance	59,490	108,672	154,301	4,706
Acquisition through business combinations	-	67,034	-	-
Amounts written off	-	(8,376)	(92,319)	(2,816)
Effects of foreign currency exchange differences	1,565	1,018	12,395	378
Balance at December 31	<u>\$ 164,408</u>	<u>\$ 332,756</u>	<u>\$ 407,133</u>	<u>\$ 12,416</u>

2) At FVTOCI

For the trade receivables due from certain customers, the Group decides whether or not to factor these trade receivables to banks without recourse based on the Group's demand of working capital. These trade receivables are classified as at FVTOCI because they are held within a business model whose objective is achieved by both the collection of contractual cash flows and the selling of financial assets.

The following table details the loss allowance of trade receivables at FVTOCI based on the Group's provision matrix.

December 31, 2023

	<u>Not Past Due</u>	<u>Overdue</u>	<u>Overdue</u>	<u>Overdue</u>	<u>Total</u>
	<u>NT\$</u>	<u>1 to 30 days</u>	<u>31 to 90 Days</u>	<u>Over 91 Days</u>	<u>NT\$</u>
		<u>NT\$</u>	<u>NT\$</u>	<u>NT\$</u>	
Expected credit loss rate	0%	0%	0%	0%	
Gross carrying amount	\$ 5,548,363	\$ 5	\$ 76,717	\$ 12,400	\$ 5,637,485
Loss allowance (Lifetime ECLs)	-	-	-	-	-
	<u>\$ 5,548,363</u>	<u>\$ 5</u>	<u>\$ 76,717</u>	<u>\$ 12,400</u>	<u>\$ 5,637,485</u>

December 31, 2024

	<u>Not Past Due</u>	<u>Overdue</u>	<u>Overdue</u>	<u>Overdue</u>	<u>Total</u>
	<u>NT\$</u>	<u>1 to 30 days</u>	<u>31 to 90 Days</u>	<u>Over 91 Days</u>	<u>NT\$</u>
		<u>NT\$</u>	<u>NT\$</u>	<u>NT\$</u>	
Expected credit loss rate	0%	0%	0%	0%	
Gross carrying amount	\$ 6,407,425	\$ 5,549	\$ 106,134	\$ 13,400	\$ 6,532,508
Loss allowance (Lifetime ECLs)	-	-	-	-	-
	<u>\$ 6,407,425</u>	<u>\$ 5,549</u>	<u>\$ 106,134</u>	<u>\$ 13,400</u>	<u>\$ 6,532,508</u>

	<u>Not Past Due</u>	<u>Overdue</u>	<u>Overdue</u>	<u>Overdue</u>	<u>Total</u>
	<u>US\$ (Note 4)</u>	<u>1 to 30 days</u>	<u>31 to 90 Days</u>	<u>Over 91 Days</u>	<u>US\$ (Note 4)</u>
		<u>US\$ (Note 4)</u>	<u>US\$ (Note 4)</u>	<u>US\$ (Note 4)</u>	
Expected credit loss rate	0%	0%	0%	0%	
Gross carrying amount	\$ 195,408	\$ 169	\$ 3,237	\$ 408	\$ 199,222
Loss allowance (Lifetime ECLs)	-	-	-	-	-
	<u>\$ 195,408</u>	<u>\$ 169</u>	<u>\$ 3,237</u>	<u>\$ 408</u>	<u>\$ 199,222</u>

3) At FVTPL

Some of the Group's subsidiaries sell all of their trade receivables to banks without recourse. The sale will result in the derecognition of these trade receivables because the Group's subsidiaries transfer substantially all risks and rewards to banks. These trade receivables are measured at FVTPL because the objective of those subsidiaries' business model is the selling of financial assets. In April 2024, subsidiaries amended agreements to factor the trade receivables to banks with recourse. As of December 31, 2024, there were no trade receivables at FVTPL held by the Group.

b. Transfers of financial assets

1) Qualify for derecognition

The Group's outstanding trade receivables transferred but not yet due were as follows:

<u>Counterparty</u>	<u>Receivables</u>	<u>Reclassified</u>	<u>Advances</u>	<u>Advances</u>	<u>Annual</u>
	<u>Factoring</u>	<u>to Other</u>	<u>Received -</u>	<u>Received -</u>	<u>Interest Rates</u>
	<u>Proceed</u>	<u>Receivables</u>	<u>Unused</u>	<u>Used</u>	<u>on Advances</u>
					<u>Received (%)</u>
<u>December 31, 2023</u>					
BNP Paribas	EUR 28,545	EUR 28,545	EUR 27,206	EUR -	-

Pursuant to the factoring agreements, losses from commercial disputes (such as sales returns and discounts) are borne by the Group, while losses from credit risk are borne by banks. As of the date that the consolidated financial statements were authorized for issue by the management, the Group

did not have a material commercial dispute and also expected to have no material commercial dispute in the foreseeable future.

2) Not qualifying for derecognition

During the year ended December 31, 2024, the facilities granted by banks for the factoring agreements made between the Group's subsidiary and banks were EUR10,000 thousand, and the trade receivables accumulated factored and cash proceeds collected were EUR61,301 thousand and EUR28,586 thousand, respectively. Pursuant to the agreements, if these trade receivables are not recovered at maturity, banks have the right to request the Group's subsidiary to pay the unsettled balance. As the Group does not transfer substantially all risks and rewards relating to these trade receivables, it continues to recognize the full carrying amount of these trade receivables and treats them as collateral for borrowings. Refer to Note 36 for the carrying amount of trade receivables as collateral.

As of December 31, 2024, the carrying amount of these trade receivables factored but not yet derecognized was NT\$391,030 thousand (US\$11,925 thousand) and the carrying amount of the related liabilities was nil.

11. INVENTORIES

	December 31		
	2023 (Retrospectively Adjusted)	2024	
	NT\$	NT\$	US\$ (Note 4)
Finished goods	\$ 9,942,163	\$ 11,567,645	\$ 352,780
Work in process	5,976,497	6,374,902	194,416
Raw materials	39,600,020	34,600,519	1,055,215
Supplies	3,106,039	3,544,043	108,083
Raw materials and supplies in transit	<u>1,033,635</u>	<u>1,226,829</u>	<u>37,415</u>
	<u>\$ 59,658,354</u>	<u>\$ 57,313,938</u>	<u>\$ 1,747,909</u>

The cost of inventories recognized as operating costs for the years ended December 31, 2022, 2023 and 2024 were NT\$534,314,001 thousand, NT\$488,429,585 thousand and NT\$496,631,340 thousand (US\$15,145,817 thousand), respectively, which included write-downs of inventories at NT\$2,031,485 thousand, NT\$3,389,936 thousand and NT\$469,876 thousand (US\$14,330 thousand), respectively.

12. INVENTORIES RELATED TO REAL ESTATE BUSINESS

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Land and buildings held for sale	\$ 666,665	\$ 647,039	\$ 19,733
Construction in progress	<u>3,001,811</u>	<u>3,219,955</u>	<u>98,199</u>
	<u>\$ 3,668,476</u>	<u>\$ 3,866,994</u>	<u>\$ 117,932</u>

Construction in progress is mainly located on Lidu Road in Kun Shan, China. The capitalized borrowing costs for the years ended December 31, 2022, 2023 and 2024 are disclosed in Note 25.

As of December 31, 2023 and 2024, inventories related to real estate business of NT\$3,668,476 thousand and NT\$3,220,603 thousand (US\$98,219 thousand), respectively, are expected to be realized longer than twelve months.

Refer to Note 36 for the carrying amount of inventories related to real estate business that had been pledged by the Group to secure bank borrowings.

13. OTHER FINANCIAL ASSETS

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Guarantee deposits	\$ 5,481,446	\$ 4,956,488	\$ 151,159
Pledged time deposits (Note 36)	470,373	513,582	15,663
Time deposits with original maturity over three months	61,067	82,680	2,521
Others (Note 36)	149,581	125,172	3,817
	<u>\$ 6,162,467</u>	<u>\$ 5,677,922</u>	<u>\$ 173,160</u>
Current	\$ 598,136	\$ 985,925	\$ 30,068
Non-current	<u>5,564,331</u>	<u>4,691,997</u>	<u>143,092</u>
	<u>\$ 6,162,467</u>	<u>\$ 5,677,922</u>	<u>\$ 173,160</u>

14. INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Investments in associates	\$ 19,662,937	\$ 20,410,983	\$ 622,476
Investments in joint venture	<u>15,377</u>	<u>12,357</u>	<u>377</u>
	<u>\$ 19,678,314</u>	<u>\$ 20,423,340</u>	<u>\$ 622,853</u>

a. Investments in associates

- 1) Investments in associates accounted for using the equity method that were not individually material consisted of the following:

Name of Associate	Main Business	Operating Location	Carrying Amount as of December 31		
			2023	2024	
			NT\$	NT\$	US\$ (Note 4)
Yann Yuan Investment Co., Ltd. ("Yann Yuan")	Engaged in investing activities	R.O.C.	\$ 10,250,888	\$ 10,317,044	\$ 314,640
ChipMOS Technologies Inc. ("ChipMOS")	Engaged in the packaging and testing of semiconductors	R.O.C.	2,786,339	2,941,982	89,722
Hung Ching Development & Construction Co. ("HC")	Engaged in the development, construction and leasing of real estate properties	R.O.C.	2,035,230	2,412,818	73,584
M-Universe Investments Pte. Ltd. ("MU")	Investment company	Singapore	2,072,314	2,325,475	70,920
MACHVISION, INC. ("MACHVISION")	Engaged in the manufacturing and trading of non-contact optical inspection equipment	R.O.C.	2,123,368	2,055,590	62,690

(Continued)

Name of Associate	Main Business	Operating Location	Carrying Amount as of December 31		
			2023	2024	
			NT\$	NT\$	US\$ (Note 4)
Chipletz, Inc. ("CHIPLETZ")	Fabless substrate design house	U.S.A.	\$ 248,209	\$ 255,384	\$ 7,788
Questyle Audio Engineering Co., Ltd. ("QUESTYLE")	Engaged in the research and development on technology and sales of electronic products, digital products, audio equipment and spare parts, domestic trading; import and export business	China	72,421	17,798	543
Deca Technologies Inc. ("DECA")	Holding company with group engaged in the development of wafer level packaging	U.S.A.	53,357	58,100	1,772
Goodcare Holdings Inc. ("GOODCARE")	Holding company, engaged in operation investment, long-term care and home services business	R.O.C.	20,811	26,792	817
Hung Ching Kwan Co. ("HCK")	Engaged in the leasing of real estate properties	R.O.C.	(67,703)	(83,098)	(2,534)
			19,595,234	20,327,885	619,942
	Add: Credit balance of investments accounted for using the equity method reclassified to other liabilities		67,703	83,098	2,534
			<u>\$ 19,662,937</u>	<u>\$ 20,410,983</u>	<u>\$ 622,476</u>

(Concluded)

- 2) At each balance sheet date, the total percentages of ownership held by the Group were as follows:

	December 31	
	2023	2024
Yann Yuan	27.94%	27.94%
ChipMOS	10.85%	10.85%
HC	26.22%	26.22%
MU	42.23%	42.23%
MACHVISION	23.08%	23.08%
CHIPLETZ	19.43%	18.74%
HCK	27.31%	27.31%
QUESTYLE	6.67%	6.67%
DECA	17.84%	17.84%
GOODCARE	49.00%	49.00%

- 3) The Group's subsidiary, ISE Labs, Inc., subscribed in cash for additional newly issued shares of CHIPLETZ at a percentage different from its existing ownership percentage, and the employee share options granted by CHIPLETZ were exercised in the third quarter of 2024, which led to a decrease in the Group's ownership interest in CHIPLETZ to 18.74%. The Group considered it still retains significant influence over CHIPLETZ since it involves in making significant decisions by participating in CHIPLETZ's board meetings.
- 4) In June 2023, the Group's subsidiary, ASE, subscribed for 13,418 thousand ordinary shares of MACHVISION through a private placement by NT\$2,167,007 thousand in cash; after the subscription, the Group owned 23.08% shareholdings of MACHVISION and the Group is able to exercise significant influence over MACHVISION. Transfer of the aforementioned ordinary shares within 3 years from the acquisition date is prohibited by regulations. As of December 31, 2023, the Group has completed the identification of the difference between the cost of the investment and the Group's share of the net fair value of MACHVISION's identifiable assets and liabilities.

- 5) At the end of 2024, the Group's subsidiary, USISH, evaluated the recoverable amount of its investment in QUESTYLE by using the value in use. The recoverable amount was lower than the carrying amount and, therefore, the Group recognized an impairment loss of NT\$42,143 thousand (US\$1,285 thousand) under the line item of other gains and losses (Note 25). The value in use of its investment in QUESTYLE was the present value of cash flow projections made by QUESTYLE's management with a discount rate of 11.65%.
- 6) Fair values (Level 1) of investments in associates with available published price quotation are summarized as follows:

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
ChipMOS	\$ 3,333,964	\$ 2,473,841	\$ 75,445
HC	\$ 1,904,476	\$ 2,601,069	\$ 79,325

- 7) Aggregate information of associates that are not individually material

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
The Group's share of:				
Net income	\$ 1,083,538	\$ 1,091,814	\$ 899,723	\$ 27,439
Other comprehensive income (loss)	(3,082,307)	2,439,733	142,182	4,336
Total comprehensive income (loss)	\$ (1,998,769)	\$ 3,531,547	\$ 1,041,905	\$ 31,775

b. Investments in joint venture

- 1) Investments in joint venture that was not individually material and accounted for using the equity method consisted of the following:

Name of Joint Venture	Main Business	Operating Location	Carrying Amount as of December 31		
			2023	2024	
			NT\$	NT\$	US\$ (Note 4)
MUtek Electronics Co., Ltd. ("MUtek")	Engaged in the production and wholesale of electronic products	R.O.C.	\$ 15,377	\$ 12,357	\$ 377

- 2) At each balance sheet date, the percentages of ownership held by the Group's subsidiary were as follows:

	December 31	
	2023	2024
MUtek	49.00%	49.00%

3) Information of joint venture that was not individually material

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
The Group's share of:				
Total net income (loss)				
and comprehensive				
income (loss)	\$ 101,839	\$ (11,214)	\$ (3,021)	\$ (92)

15. PROPERTY, PLANT AND EQUIPMENT

The carrying amounts of each class of property, plant and equipment were as follows:

	December 31		
	2023	2024	
	(Retrospectively Adjusted)	NT\$	US\$ (Note 4)
	NT\$	NT\$	US\$ (Note 4)
Land and land improvements	\$ 13,523,172	\$ 17,570,624	\$ 535,853
Buildings and improvements	100,733,745	121,588,485	3,708,096
Machinery and equipment	126,826,200	137,430,483	4,191,232
Other equipment	3,023,212	3,203,839	97,708
Construction in progress and machinery under installation	20,765,193	32,738,040	998,415
	<u>\$ 264,871,522</u>	<u>\$ 312,531,471</u>	<u>\$ 9,531,304</u>

For the year ended December 31, 2022

	Land	Buildings and Improvements	Machinery and Equipment	Other Equipment	Construction in Progress and Machinery under Installation	Total
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
Cost						
Balance at January 1, 2022	\$ 11,530,540	\$ 152,641,699	\$ 423,488,598	\$ 14,601,044	\$ 16,932,273	\$ 619,194,154
Additions	1,453,816	302,092	1,514,563	137,208	72,392,895	75,800,574
Disposals	(63,446)	(1,129,046)	(7,457,317)	(1,176,897)	(6,271)	(9,832,977)
Reclassification	-	19,150,796	51,716,057	560,828	(71,530,690)	(103,009)
Effect of foreign currency exchange differences	85,983	1,833,158	4,232,801	232,425	285,199	6,669,566
Balance at December 31, 2022	<u>\$ 13,006,893</u>	<u>\$ 172,798,699</u>	<u>\$ 473,494,702</u>	<u>\$ 14,354,608</u>	<u>\$ 18,073,406</u>	<u>\$ 691,728,308</u>
Accumulated depreciation and impairment						
Balance at January 1, 2022	\$ -	\$ 73,367,762	\$ 295,286,082	\$ 10,672,760	\$ -	\$ 379,326,604
Depreciation expense	-	7,516,917	39,819,816	1,609,023	-	48,945,756
Impairment losses recognized	-	244,719	155,334	5,346	-	405,399
Disposals	-	(1,081,082)	(7,114,817)	(1,138,221)	-	(9,334,120)
Reclassification	-	198,534	365,180	(365,180)	-	198,534
Effect of foreign currency exchange differences	-	928,558	2,853,622	169,337	-	3,951,517
Balance at December 31, 2022	<u>\$ -</u>	<u>\$ 81,175,408</u>	<u>\$ 331,365,217</u>	<u>\$ 10,953,065</u>	<u>\$ -</u>	<u>\$ 423,493,690</u>

For the year ended December 31, 2023 (Retrospectively Adjusted)

	Land and Land Improvements NT\$	Buildings and Improvements NT\$	Machinery and Equipment NT\$	Other Equipment NT\$	Construction in Progress and Machinery under Installation NT\$	Total NT\$
<u>Cost</u>						
Balance at January 1, 2023	\$ 13,006,893	\$ 172,798,699	\$ 473,494,702	\$ 14,354,608	\$ 18,073,406	\$ 691,728,308
Additions	424,130	1,866,786	2,308,779	141,158	44,017,796	48,758,649
Disposals	(3,436)	(8,786,519)	(7,912,516)	(1,441,685)	(9,457)	(18,153,613)
Reclassification	142,562	16,398,574	24,044,088	992,109	(41,394,745)	182,588
Acquisitions through business combinations (Note 29)	18,049	150,347	1,159,537	136,687	167,477	1,632,097
Effect of foreign currency exchange differences	(6,585)	(594,470)	(2,395,051)	(88,219)	(89,284)	(3,173,609)
Balance at December 31, 2023	<u>\$ 13,581,613</u>	<u>\$ 181,833,417</u>	<u>\$ 490,699,539</u>	<u>\$ 14,094,658</u>	<u>\$ 20,765,193</u>	<u>\$ 720,974,420</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2023	\$ -	\$ 81,175,408	\$ 331,365,217	\$ 10,953,065	\$ -	\$ 423,493,690
Depreciation expense	17,860	8,896,551	41,403,363	1,481,707	-	51,799,481
Impairment losses recognized	-	134,999	10,802	769	-	146,570
Disposals	(3,436)	(8,771,076)	(7,774,818)	(1,431,696)	-	(17,981,026)
Reclassification	43,725	(35,568)	7,674	35,200	-	51,031
Acquisitions through business combinations (Note 29)	-	24,770	735,808	125,322	-	885,900
Effect of foreign currency exchange differences	292	(325,412)	(1,874,707)	(92,921)	-	(2,292,748)
Balance at December 31, 2023	<u>\$ 58,441</u>	<u>\$ 81,099,672</u>	<u>\$ 363,873,339</u>	<u>\$ 11,071,446</u>	<u>\$ -</u>	<u>\$ 456,102,898</u>

For the year ended December 31, 2024

	Land and Land Improvements NT\$	Buildings and Improvements NT\$	Machinery and Equipment NT\$	Other Equipment NT\$	Construction in Progress and Machinery under Installation NT\$	Total NT\$
<u>Cost</u>						
Balance at January 1, 2024 (Retrospectively Adjusted)	\$ 13,581,613	\$ 181,833,417	\$ 490,699,539	\$ 14,094,658	\$ 20,765,193	\$ 720,974,420
Additions	3,931,878	6,177,957	2,033,804	239,234	83,824,673	96,207,546
Disposals	(152,357)	(3,250,387)	(10,611,069)	(1,097,340)	(5,396)	(15,116,549)
Reclassification	4,699	23,003,450	48,348,102	1,084,919	(72,457,183)	(16,013)
Acquisitions through business combinations (Note 29)	175,261	1,153,289	7,575,012	660,442	14,817	9,578,821
Effect of foreign currency exchange differences	106,652	3,549,566	4,611,503	334,002	595,936	9,197,659
Balance at December 31, 2024	<u>\$ 17,647,746</u>	<u>\$ 212,467,292</u>	<u>\$ 542,656,891</u>	<u>\$ 15,315,915</u>	<u>\$ 32,738,040</u>	<u>\$ 820,825,884</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2024 (Retrospectively Adjusted)	\$ 58,441	\$ 81,099,672	\$ 363,873,339	\$ 11,071,446	\$ -	\$ 456,102,898
Depreciation expense	17,255	10,126,682	41,930,945	1,425,917	-	53,500,799
Impairment losses recognized	-	16,472	32,455	276	84,677	133,880
Disposals	-	(2,994,916)	(10,352,348)	(1,090,547)	-	(14,437,811)
Reclassification	-	14,145	(2,892)	1,463	(84,677)	(71,961)
Acquisitions through business combinations (Note 29)	-	955,951	6,918,742	362,687	-	8,237,380
Effect of foreign currency exchange differences	1,426	1,660,801	2,826,167	340,834	-	4,829,228
Balance at December 31, 2024	<u>\$ 77,122</u>	<u>\$ 90,878,807</u>	<u>\$ 405,226,408</u>	<u>\$ 12,112,076</u>	<u>\$ -</u>	<u>\$ 508,294,413</u>

	Land and Land Improvements	Buildings and Improvements	Machinery and Equipment	Other Equipment	Construction in Progress and Machinery under Installation	Total
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
Cost						
Balance at January 1, 2024 (Retrospectively Adjusted)	\$ 414,200	\$ 5,545,393	\$ 14,964,914	\$ 429,846	\$ 633,278	\$ 21,987,631
Additions	119,911	188,410	62,025	7,296	2,556,410	2,934,052
Disposals	(4,646)	(99,127)	(323,607)	(33,466)	(165)	(461,011)
Reclassification	143	701,539	1,474,477	33,087	(2,209,734)	(488)
Acquisitions through business combinations (Note 29)	5,345	35,171	231,016	20,142	452	292,126
Effect of foreign currency exchange differences	3,252	108,251	140,638	10,186	18,174	280,501
Balance at December 31, 2024	<u>\$ 538,205</u>	<u>\$ 6,479,637</u>	<u>\$ 16,549,463</u>	<u>\$ 467,091</u>	<u>\$ 998,415</u>	<u>\$ 25,032,811</u>
Accumulated depreciation and impairment						
Balance at January 1, 2024 (Retrospectively Adjusted)	\$ 1,782	\$ 2,473,305	\$ 11,097,083	\$ 337,647	\$ -	\$ 13,909,817
Depreciation expense	526	308,835	1,278,772	43,486	-	1,631,619
Impairment losses recognized	-	502	990	9	2,582	4,083
Disposals	-	(91,336)	(315,717)	(33,259)	-	(440,312)
Reclassification	-	431	(88)	45	(2,582)	(2,194)
Acquisitions through business combinations (Note 29)	-	29,154	211,002	11,061	-	251,217
Effect of foreign currency exchange differences	44	50,650	86,189	10,394	-	147,277
Balance at December 31, 2024	<u>\$ 2,352</u>	<u>\$ 2,771,541</u>	<u>\$ 12,358,231</u>	<u>\$ 369,383</u>	<u>\$ -</u>	<u>\$ 15,501,507</u>

Based on the future operation plans and the capacity evaluation, the Group assessed that a portion of property, plant and equipment in the packaging segment, testing segment and EMS segment were not qualified for the production needs and, therefore, recognized an impairment loss of NT\$405,399 thousand, NT\$146,570 thousand and NT\$133,880 thousand (US\$4,083 thousand) under the line item of other operating income and expenses (Note 25) for the years ended December 31, 2022, 2023 and 2024, respectively. Part of the recoverable amounts were determined by the fair value less cost of disposal, of which the fair value was based on the recent quoted prices of assets with similar age and obsolescence provided by vendors in secondary market or the disposal prices negotiated with counterparties, and both of which represented Level 3 inputs because the secondary market was not active and the disposal prices was negotiated with counterparties. The recoverable amount of the other impaired plant and equipment was determined using value in use and the Group expected to derive nearly no cash flows from these assets.

Each class of property, plant and equipment was depreciated on a straight-line basis over the following useful lives:

Land improvements	7-30 years
Buildings and improvements	
Main plant buildings	10-55 years
Cleanrooms	10-20 years
Others	3-24 years
Machinery and equipment	2-15 years
Other equipment	2-25 years

The capitalized borrowing costs for the years ended December 31, 2022, 2023 and 2024 are disclosed in Note 25.

16. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31			
	2023	2024		
	NT\$	NT\$	US\$ (Note 4)	
<u>Carrying amounts</u>				
Land	\$ 7,111,397	\$ 7,747,283	\$ 236,270	
Buildings and improvements	4,081,525	3,492,553	106,513	
Machinery and equipment	179,270	545,748	16,644	
Other equipment	<u>70,074</u>	<u>65,503</u>	<u>1,997</u>	
	<u>\$ 11,442,266</u>	<u>\$ 11,851,087</u>	<u>\$ 361,424</u>	
	<u>For the Year Ended December 31</u>			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Additions to right-of-use assets	<u>\$ 2,140,942</u>	<u>\$ 1,680,516</u>	<u>\$ 1,936,186</u>	<u>\$ 59,048</u>
Depreciation charge for right-of-use assets				
Land	\$ 236,673	\$ 246,617	\$ 267,959	\$ 8,172
Buildings and improvements	660,276	726,510	855,492	26,090
Machinery and equipment	538,639	292,936	246,799	7,527
Other equipment	<u>32,452</u>	<u>37,957</u>	<u>44,890</u>	<u>1,369</u>
	<u>\$ 1,468,040</u>	<u>\$ 1,304,020</u>	<u>\$ 1,415,140</u>	<u>\$ 43,158</u>

The amounts disclosed above with respect to the right-of-use assets did not include the right-of-use assets that meet the definition of investment properties.

b. Lease liabilities

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
<u>Carrying amounts</u>			
Current	\$ 1,062,239	\$ 986,489	\$ 30,085
Non-current	\$ 7,159,767	\$ 6,825,534	\$ 208,159

The Group's lease liabilities were mainly from land and buildings and improvements. The range of discount rates for lease liabilities was as follows:

	December 31	
	2023	2024
Land (%)	0.54-8.00	0.54-8.00
Buildings and improvements (%)	0.45-8.84	0.45-8.84

c. Material lease-in activities and terms

The Group leases land and buildings for the use of plants and offices with remaining lease terms of 1-59 years and 1-26 years, respectively. For the leasehold land located in the R.O.C., the Group has extension options at the expiry of the lease periods. However, the government has the right to adjust the lease payments on the basis of changes in announced land value prices and also has the right to terminate the lease contract under certain circumstances. The Group does not have bargain purchase options to acquire the leasehold land and buildings at the expiry of the lease periods. In addition, the Group is prohibited from subleasing or transferring all or any portion of the underlying assets without the lessor's consent.

d. Subleases

In addition to the sublease transactions described in Note 17, the Group did not have other sublease transactions.

e. Other lease information

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Expenses relating to short-term leases	\$ 431,613	\$ 316,799	\$ 885,741	\$ 27,013
Expenses relating to low-value assets leases	\$ 3,242	\$ 3,913	\$ 4,143	\$ 126
Expenses relating to variable lease payments not included in the measurement of lease liabilities	\$ 126,584	\$ 124,883	\$ 70,263	\$ 2,143
Total cash outflow for leases	\$ 2,494,384	\$ 1,856,816	\$ 3,426,478	\$ 104,498

The Group elected to apply the recognition exemption for qualifying short-term leases and low-value asset leases and, therefore, did not recognize right-of-use assets and lease liabilities for these leases.

17. INVESTMENT PROPERTIES

For the year ended December 31, 2022

	Land	Buildings and Improvements	Right-of-use Assets	Total
	NT\$	NT\$	NT\$	NT\$
Cost				
Balance at January 1, 2022	\$ 35,572	\$ 16,376,098	\$ 10,042,678	\$ 26,454,348
Additions	-	114,786	-	114,786
Disposals	-	(9,770)	-	(9,770)
Reclassification	-	39,158	(10,314)	28,844
				(Continued)

	Land NT\$	Buildings and Improvements NT\$	Right-of-use Assets NT\$	Total NT\$
Effects of foreign currency exchange differences	\$ -	\$ 237,171	\$ 143,516	\$ 380,687
Balance at December 31, 2022	\$ 35,572	\$ 16,757,443	\$ 10,175,880	\$ 26,968,895
<u>Accumulated depreciation</u>				
Balance at January 1, 2022	\$ -	\$ 3,272,146	\$ 1,037,415	\$ 4,309,561
Depreciation expenses	-	779,431	327,583	1,107,014
Disposals	-	(8,354)	-	(8,354)
Reclassification	-	(198,631)	(12,186)	(210,817)
Effects of foreign currency exchange differences	-	23,515	18,884	42,399
Balance at December 31, 2022	\$ -	\$ 3,868,107	\$ 1,371,696	\$ 5,239,803
Carrying amount at December 31, 2022	\$ 35,572	\$ 12,889,336	\$ 8,804,184	\$ 21,729,092 (Concluded)

For the year ended December 31, 2023

	Land NT\$	Buildings and Improvements NT\$	Right-of-use Assets NT\$	Total NT\$
<u>Cost</u>				
Balance at January 1, 2023	\$ 35,572	\$ 16,757,443	\$ 10,175,880	\$ 26,968,895
Additions	-	35,304	-	35,304
Reclassification	-	(182,588)	(12,233)	(194,821)
Effects of foreign currency exchange differences	-	(298,273)	(171,087)	(469,360)
Balance at December 31, 2023	\$ 35,572	\$ 16,311,886	\$ 9,992,560	\$ 26,340,018
<u>Accumulated depreciation</u>				
Balance at January 1, 2023	\$ -	\$ 3,868,107	\$ 1,371,696	\$ 5,239,803
Depreciation expenses	-	766,322	325,557	1,091,879
Reclassification	-	(51,031)	(4,309)	(55,340)
Effects of foreign currency exchange differences	-	(80,078)	(25,362)	(105,440)
Balance at December 31, 2023	\$ -	\$ 4,503,320	\$ 1,667,582	\$ 6,170,902
Carrying amount at December 31, 2023	\$ 35,572	\$ 11,808,566	\$ 8,324,978	\$ 20,169,116

For the year ended December 31, 2024

	Land	Buildings and	Right-of-use	Total
	NT\$	Improvements	Assets	NT\$
	NT\$	NT\$	NT\$	NT\$
<u>Cost</u>				
Balance at January 1, 2024	\$ 35,572	\$ 16,311,886	\$ 9,992,560	\$ 26,340,018
Additions	-	15,145	-	15,145
Disposals	-	(62)	-	(62)
Reclassification	-	(88,176)	159	(88,017)
Effects of foreign currency exchange differences	-	845,530	520,026	1,365,556
Balance at December 31, 2024	<u>\$ 35,572</u>	<u>\$ 17,084,323</u>	<u>\$ 10,512,745</u>	<u>\$ 27,632,640</u>
<u>Accumulated depreciation</u>				
Balance at January 1, 2024	\$ -	\$ 4,503,320	\$ 1,667,582	\$ 6,170,902
Depreciation expenses	-	748,055	331,204	1,079,259
Disposals	-	(28)	-	(28)
Reclassification	-	(9,340)	54	(9,286)
Effects of foreign currency exchange differences	-	241,359	95,390	336,749
Balance at December 31, 2024	<u>\$ -</u>	<u>\$ 5,483,366</u>	<u>\$ 2,094,230</u>	<u>\$ 7,577,596</u>
Carrying amount at December 31, 2024	<u>\$ 35,572</u>	<u>\$ 11,600,957</u>	<u>\$ 8,418,515</u>	<u>\$ 20,055,044</u>
	Land	Buildings and	Right-of-use	Total
	US\$ (Note 4)	Improvements	Assets	US\$ (Note 4)
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
<u>Cost</u>				
Balance at January 1, 2024	\$ 1,085	\$ 497,466	\$ 304,744	\$ 803,295
Additions	-	462	-	462
Disposals	-	(2)	-	(2)
Reclassification	-	(2,689)	5	(2,684)
Effects of foreign currency exchange differences	-	25,786	15,859	41,645
Balance at December 31, 2024	<u>\$ 1,085</u>	<u>\$ 521,023</u>	<u>\$ 320,608</u>	<u>\$ 842,716</u>
<u>Accumulated depreciation</u>				
Balance at January 1, 2024	\$ -	\$ 137,338	\$ 50,856	\$ 188,194
Depreciation expenses	-	22,813	10,101	32,914
Disposals	-	(1)	-	(1)
Reclassification	-	(284)	2	(282)

(Continued)

	Land	Buildings and Improvements	Right-of-use Assets	Total
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
Effects of foreign currency exchange differences	\$ -	\$ 7,361	\$ 2,909	\$ 10,270
Balance at December 31, 2024	\$ -	\$ 167,227	\$ 63,868	\$ 231,095
Carrying amount at December 31, 2024	\$ 1,085	\$ 353,796	\$ 256,740	\$ 611,621
				(Concluded)

Right-of-use assets included in investment properties were leasehold land located in Shanghai and were subleased under operating leases.

The abovementioned investment properties were leased out for 1 to 20 years, with an option to extend for an additional lease term. The lease contracts contain market review clauses in the event that the lessees exercise their options to extend. The lessees do not have bargain purchase options to acquire the investment properties at the expiry of the lease term.

In addition to fixed lease payments, some of the lease contracts also indicated that the lessees should make variable payments determined at a specific percentage of the excess of respective lessee's monthly revenues over a specific amount.

The total lease payments to be received in the future under operating leases of investment properties were as follows:

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Year 1	\$ 1,596,827	\$ 1,553,091	\$ 47,365
Year 2	1,333,442	1,333,489	40,668
Year 3	1,154,877	1,041,709	31,769
Year 4	893,353	768,824	23,447
Year 5	687,266	644,958	19,669
Year 6 onwards	<u>1,777,808</u>	<u>1,247,966</u>	<u>38,059</u>
	<u>\$ 7,443,573</u>	<u>\$ 6,590,037</u>	<u>\$ 200,977</u>

The investment properties were depreciated on a straight-line basis over the following useful lives:

Main buildings	10-40 years
Right-of-use assets	10-50 years

Because the market conditions were severely affected by COVID-19 in 2022, the Group agreed to provide unconditional rent concessions for some lease contracts. The rent concessions were accounted for as adjustments to related income over the remaining lease term. For the year ended December 31, 2022, total amount from the rent concessions was NT\$114,538 thousand.

The fair value of the investment properties was measured using the market approach and the income approach based on Level 3 inputs by independent professional appraisers. The significant unobservable inputs were discount rates. The fair value of the investment properties was as follows:

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Fair value	\$ 34,789,532	\$ 34,684,323	\$ 1,057,771

Refer to Note 36 for the carrying amount of the investment properties that had been pledged by the Group to secure borrowings.

18. GOODWILL

For the year ended December 31, 2022

	Cost NT\$	Accumulated impairment NT\$	Carrying amount NT\$
Balance at January 1, 2022	\$ 54,486,526	\$ 2,414,113	\$ 52,072,413
Effect of foreign currency exchange differences	240,986	-	240,986
Balance at December 31, 2022	\$ 54,727,512	\$ 2,414,113	\$ 52,313,399

For the year ended December 31, 2023 (Retrospectively Adjusted)

	Cost NT\$	Accumulated impairment NT\$	Carrying amount NT\$
Balance at January 1, 2023	\$ 54,727,512	\$ 2,414,113	\$ 52,313,399
Acquisitions through business combinations (Note 29)	21,001	-	21,001
Effect of foreign currency exchange differences	85,027	-	85,027
Balance at December 31, 2023	\$ 54,833,540	\$ 2,414,113	\$ 52,419,427

For the year ended December 31, 2024

	Cost NT\$	Accumulated impairment NT\$	Carrying amount NT\$
Balance at January 1, 2024 (Retrospectively Adjusted)	\$ 54,833,540	\$ 2,414,113	\$ 52,419,427
Effect of foreign currency exchange differences	105,915	-	105,915
Balance at December 31, 2024	\$ 54,939,455	\$ 2,414,113	\$ 52,525,342

	Cost US\$ (Note 4)	Accumulated impairment US\$ (Note 4)	Carrying amount US\$ (Note 4)
Balance at January 1, 2024 (Retrospectively Adjusted)	\$ 1,672,264	\$ 73,623	\$ 1,598,641
Effect of foreign currency exchange differences	3,230	-	3,230
Balance at December 31, 2024	\$ 1,675,494	\$ 73,623	\$ 1,601,871

a. Allocating goodwill to cash-generating units

The Group did not monitor goodwill for internal management purpose but for financial reporting purpose and, therefore, the goodwill was allocated to the following cash-generating units for evaluation of impairment: packaging segment, testing segment, EMS segment and other segment. The carrying amounts of goodwill allocated to cash-generating units were as follows:

Cash-generating units	December 31		
	2023	2024	
	(Retrospectively Adjusted)		
	NT\$	NT\$	US\$ (Note 4)
Packaging segment	\$ 35,426,817	\$ 35,437,523	\$ 1,080,742
Testing segment	13,414,094	13,489,766	411,399
EMS segment	3,430,415	3,449,952	105,214
Others	<u>148,101</u>	<u>148,101</u>	<u>4,516</u>
	<u>\$ 52,419,427</u>	<u>\$ 52,525,342</u>	<u>\$ 1,601,871</u>

b. Impairment assessment

At the end of each year, the Group performs evaluation of goodwill for impairment by reviewing the recoverable amounts based on value in use which incorporates cash flow projections estimated by management covering a five-year period. The cash flows beyond that five-year period are extrapolated using a steady per annum growth rate. In assessing value in use, the estimated future cash flows are discounted to their present value using annual pre-tax discount rates which were 8.65%-14.64%, 13.83%-14.08% and 13.91%-14.56% as of December 31, 2022, 2023 and 2024, respectively. For the years ended December 31, 2022, 2023 and 2024, no impairment loss was recognized. The key assumption used in calculating each segment's value in use also included the growth rates for operating revenues, which were based on the forecast for the Group and the industry as well as the Group's historical performance.

Management believes that any reasonably possible change in the key assumptions on which the recoverable amount was based on would not cause the carrying amount of each cash-generating unit to exceed its recoverable amount.

19. OTHER INTANGIBLE ASSETS

The carrying amounts of each class of other intangible assets were as follows:

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Customer relationships	\$ 5,949,623	\$ 4,904,110	\$ 149,561
Computer software	1,878,509	2,612,829	79,684
Patents and acquired specific technology	9,948,539	8,069,574	246,098
Others	<u>43,462</u>	<u>105,837</u>	<u>3,228</u>
	<u>\$ 17,820,133</u>	<u>\$ 15,692,350</u>	<u>\$ 478,571</u>

For the year ended December 31, 2022

	Customer Relationships	Computer Software	Patents and Acquired Specific Technology	Others	Total
	NT\$	NT\$	NT\$	NT\$	NT\$
<u>Cost</u>					
Balance at January 1, 2022	\$ 11,704,605	\$ 7,051,694	\$ 21,315,241	\$ 133,526	\$ 40,205,066
Additions	-	459,954	500	31,414	491,868
Disposals or derecognition	-	(37,442)	-	(12,871)	(50,313)
Effect of foreign currency exchange differences	<u>31,576</u>	<u>141,903</u>	<u>1,611</u>	<u>4,257</u>	<u>179,347</u>
Balance at December 31, 2022	<u>\$ 11,736,181</u>	<u>\$ 7,616,109</u>	<u>\$ 21,317,352</u>	<u>\$ 156,326</u>	<u>\$ 40,825,968</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2022	\$ 3,713,649	\$ 4,271,971	\$ 7,584,837	\$ 70,902	\$ 15,641,359
Amortization expense	1,043,852	957,708	1,901,835	27,684	3,931,079
Impairment losses recognized	-	715	-	-	715
Disposals or derecognition	-	(31,456)	-	(8,553)	(40,009)
Effect of foreign currency exchange differences	<u>4,315</u>	<u>106,356</u>	<u>1,513</u>	<u>2,932</u>	<u>115,116</u>
Balance at December 31, 2022	<u>\$ 4,761,816</u>	<u>\$ 5,305,294</u>	<u>\$ 9,488,185</u>	<u>\$ 92,965</u>	<u>\$ 19,648,260</u>

For the year ended December 31, 2023

	Customer Relationships	Computer Software	Patents and Acquired Specific Technology	Others	Total
	NT\$	NT\$	NT\$	NT\$	NT\$
<u>Cost</u>					
Balance at January 1, 2023	\$ 11,736,181	\$ 7,616,109	\$ 21,317,352	\$ 156,326	\$ 40,825,968
Additions	-	537,261	1,350	(10,825)	527,786
Disposals or derecognition	-	(905,947)	-	(30,973)	(936,920)
Effect of foreign currency exchange differences	<u>26,380</u>	<u>12,970</u>	<u>(807)</u>	<u>2,169</u>	<u>40,712</u>
Balance at December 31, 2023	<u>\$ 11,762,561</u>	<u>\$ 7,260,393</u>	<u>\$ 21,317,895</u>	<u>\$ 116,697</u>	<u>\$ 40,457,546</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2023	\$ 4,761,816	\$ 5,305,294	\$ 9,488,185	\$ 92,965	\$ 19,648,260
Amortization expense	1,047,282	970,413	1,881,980	6,808	3,906,483

(Continued)

	Customer Relationships	Computer Software	Patents and Acquired Specific Technology	Others	Total
	NT\$	NT\$	NT\$	NT\$	NT\$
Disposals or derecognition	\$ -	\$ (894,767)	\$ -	\$ (28,800)	\$ (923,567)
Effect of foreign currency exchange differences	<u>3,840</u>	<u>944</u>	<u>(809)</u>	<u>2,262</u>	<u>6,237</u>
Balance at December 31, 2023	<u>\$ 5,812,938</u>	<u>\$ 5,381,884</u>	<u>\$ 11,369,356</u>	<u>\$ 73,235</u>	<u>\$ 22,637,413</u> (Concluded)

For the year ended December 31, 2024

	Customer Relationships	Computer Software	Patents and Acquired Specific Technology	Others	Total
	NT\$	NT\$	NT\$	NT\$	NT\$
<u>Cost</u>					
Balance at January 1, 2024	\$ 11,762,561	\$ 7,260,393	\$ 21,317,895	\$ 116,697	\$ 40,457,546
Additions	-	1,597,759	-	72,493	1,670,252
Disposals or derecognition	-	(325,476)	(8,846)	(1,339)	(335,661)
Acquisitions through business combinations (Note 29)	-	39,828	-	-	39,828
Effect of foreign currency exchange differences	<u>2,951</u>	<u>121,122</u>	<u>2,451</u>	<u>(2,853)</u>	<u>123,671</u>
Balance at December 31, 2024	<u>\$ 11,765,512</u>	<u>\$ 8,693,626</u>	<u>\$ 21,311,500</u>	<u>\$ 184,998</u>	<u>\$ 41,955,636</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2024	\$ 5,812,938	\$ 5,381,884	\$ 11,369,356	\$ 73,235	\$ 22,637,413
Amortization expense	1,048,694	886,727	1,878,965	5,628	3,820,014
Disposals or derecognition	-	(319,368)	(8,846)	-	(328,214)
Acquisitions through business combinations (Note 29)	-	38,515	-	-	38,515
Effect of foreign currency exchange differences	<u>(230)</u>	<u>93,039</u>	<u>2,451</u>	<u>298</u>	<u>95,558</u>
Balance at December 31, 2024	<u>\$ 6,861,402</u>	<u>\$ 6,080,797</u>	<u>\$ 13,241,926</u>	<u>\$ 79,161</u>	<u>\$ 26,263,286</u>

	Customer Relationships	Computer Software	Patents and Acquired Specific Technology	Others	Total
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
Cost					
Balance at January 1, 2024	\$ 358,724	\$ 221,421	\$ 650,134	\$ 3,559	\$ 1,233,838
Additions	-	48,727	-	2,211	50,938
Disposals or derecognition	-	(9,926)	(270)	(41)	(10,237)
Acquisitions through business combinations (Note 29)	-	1,215	-	-	1,215
Effect of foreign currency exchange differences	<u>90</u>	<u>3,694</u>	<u>75</u>	<u>(87)</u>	<u>3,772</u>
Balance at December 31, 2024	<u>\$ 358,814</u>	<u>\$ 265,131</u>	<u>\$ 649,939</u>	<u>\$ 5,642</u>	<u>\$ 1,279,526</u>
Accumulated amortization and impairment					
Balance at January 1, 2024	\$ 177,278	\$ 164,132	\$ 346,733	\$ 2,233	\$ 690,376
Amortization expense	31,982	27,042	57,303	172	116,499
Disposals or derecognition	-	(9,739)	(270)	-	(10,009)
Acquisitions through business combinations (Note 29)	-	1,175	-	-	1,175
Effect of foreign currency exchange differences	<u>(7)</u>	<u>2,837</u>	<u>75</u>	<u>9</u>	<u>2,914</u>
Balance at December 31, 2024	<u>\$ 209,253</u>	<u>\$ 185,447</u>	<u>\$ 403,841</u>	<u>\$ 2,414</u>	<u>\$ 800,955</u>

Each class of other intangible assets was amortized on the straight-line basis over the following useful lives:

Customer relationships	11-16 years
Computer software	2-10 years
Patents and acquired specific technology	5-17 years
Others	5-10 years

20. BORROWINGS

a. Short-term borrowings

1) Bank loans

Mainly represented revolving loans and bank overdrafts.

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Secured bank loans, annual interest rates were 4.80%-5.40% and 3.81%-4.16% as of December 31, 2023 and 2024, respectively	\$ 354,064	\$ 279,797	\$ 8,533

(Continued)

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Unsecured bank loans, annual interest rates were 1.55%-7.57% and 1.75%-6.96% as of December 31, 2023 and 2024, respectively	\$ 49,900,124	\$ 47,165,065	\$ 1,438,398
	50,254,188	47,444,862	1,446,931
Less: financial liabilities for hedging - current (Note 34)	12,516,971	12,456,104	379,875
	<u>\$ 37,737,217</u>	<u>\$ 34,988,758</u>	<u>\$ 1,067,056</u>
			(Concluded)

2) Short-term bills payable

	December 31, 2023 NT\$
Commercial papers	\$ 2,790,000
Less: Unamortized discounts	<u>2,660</u>
	<u>\$ 2,787,340</u>
Annual interest rate (%)	<u>1.53-1.54</u>

There was no short-term bills payable as of December 31, 2024.

b. Long-term borrowings

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
1) Revolving bank loans			
Others - repayable through January 2025 to September 2029, annual interest rates were 1.43%-5.91% and 1.62%-5.33% as of December 31, 2023 and 2024, respectively	\$ 77,318,195	\$ 117,177,156	\$ 3,573,564
2) Mortgage loans (Note 36)			
Repayable through January 2025 to November 2039, annual interest rates were 2.95%-3.65% and 2.40%-3.45% as of December 31, 2023 and 2024, respectively	8,142,508	8,457,942	257,942
	85,460,703	125,635,098	3,831,506
Less: current portion	<u>4,096,255</u>	<u>3,884,906</u>	<u>118,478</u>
	<u>\$ 81,364,448</u>	<u>\$ 121,750,192</u>	<u>\$ 3,713,028</u>

Pursuant to some of the above revolving bank loans agreements, the Group's subsidiaries should meet certain financial covenants which are calculated based on each of their annual unaudited

financial statements or semi-annual unreviewed financial statements. The Group's subsidiaries were in compliance with all of the financial covenants.

The Group early repaid bank loans of NT\$16,461,821 thousand and NT\$28,489,463 thousand (US\$868,846 thousand) during the months of January to March in 2024 and January to March in 2025, respectively. The original agreed settlement dates for those loans were during April 2025 to November 2026 and November 2025 to November 2027, respectively.

21. BONDS PAYABLE

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Unsecured domestic bonds			
Redeemed in January 2024 and interest due annually with annual interest rate at 1.45%	\$ 4,300,000	\$ -	\$ -
Redeemed in April 2024 and interest due annually with annual interest rate at 0.90%	6,500,000	-	-
Repayable at maturity in April 2026 and interest due annually with annual interest rate at 1.03%	3,500,000	3,500,000	106,740
Repayable at maturity in April 2025 and interest due annually with annual interest rate at 0.90%	10,000,000	10,000,000	304,971
Repayable at maturity in August 2025 and interest due annually with annual interest rate at 0.85%	5,000,000	5,000,000	152,486
Repayable at maturity in August 2027 and interest due annually with annual interest rate at 0.95%	2,000,000	2,000,000	60,994
Unsecured overseas bonds			
US\$100,000 thousand (linked to New Taiwan dollar), redeemed in October 2024 and interest due quarterly with annual interest rate at 2.50%	3,102,400	-	-
Unsecured overseas convertible bonds			
RMB2,466,050 thousand and RMB2,678,687 thousand as of December 31, 2023 and 2024, respectively, at maturity in March 2027 and interest due annually with annual interest rate at 0.10%, 0.20%, 0.60%, 1.30%, 1.80% and 2.00% for the first, second, third, fourth, fifth and sixth year, respectively.	10,690,847	12,217,010	372,583
	45,093,247	32,717,010	997,774
Add (Less): premiums (discounts) on bonds payable	(83,761)	259,154	7,904
	45,009,486	32,976,164	1,005,678
Less: current portion of bonds payable	24,520,052	14,997,976	457,395
	<u>\$ 20,489,434</u>	<u>\$ 17,978,188</u>	<u>\$ 548,283</u>

In March 2021, the subsidiary, USISH, offered an unsecured overseas convertible bonds (the "USISH Bonds") in RMB3,450,000 thousand with a par value of RMB100. Within 5 trading days after maturity, USISH will redeem all the unconverted bonds at a price of 108% of the par value (including the interests of

the last installation).

When the USISH Bonds were offered, the subsidiaries, USIE and ASEMTL, subscribed for the USISH Bonds at a total of RMB2,670,199 thousand. Since then, USIE and ASEMTL disposed separately the USISH Bonds totaled to RMB1,870,633 thousand and RMB28,397 thousand in the public market, respectively. As of December 31, 2024, the par value of the USISH Bonds held by USIE amounted to RMB771,169 thousand. As the aforementioned contractual obligations assumed by USISH and the contractual rights entitled to USIE and ASEMTL were extinguished in economic substance, the assets and liabilities related to the USISH Bonds subscribed for by USIE and ASEMTL were eliminated upon the consolidation.

Each holder of the USISH Bonds has the right to convert the USISH Bonds into ordinary shares of USISH at the conversion price at any time from the first trading day after nine months of the offering date to the maturity date (the “Conversion Period”). The initial conversion price was RMB20.25 per share at offering date and the conversion price will be subject to the adjustment in the event of the conversion provisions due to anti-dilution clause. As of December 31, 2024, the conversion price was RMB18.84 per share. As of December 31, 2024, the USISH Bonds with a par value totaling to RMB144 thousand were converted into 7 thousand ordinary shares of USISH. Within the outstanding period of the USISH Bonds, if the closing price of USISH’s ordinary shares in Shanghai Stock Exchange is lower than 80% of the current conversion price for at least 15 trading days out of any 30 consecutive trading days, the board of directors of USISH has the right to propose a downward revision on conversion price and submit it to USISH’s shareholders’ meeting for approval.

During the Conversion Period, USISH’s board of directors has the right to redeem all or part of the unconverted bonds at the price of par value plus accrued interests in either of the following circumstances: (1) if the closing price of USISH’s ordinary shares in Shanghai Stock Exchange is not less than 130% (including 130%) of the current conversion price for at least 20 trading days out of any 30 consecutive trading days, or (2) the unconverted USISH Bonds falls below RMB30,000 thousand.

In the last two interest accrual years before the maturity, the holders of USISH Bonds have the right to sell back all or part of USISH Bonds to USISH at the price of par value plus accrued interest in either of the following circumstances: (1) if the closing price of USISH’s ordinary shares in Shanghai Stock Exchange is lower than 70% of the current conversion price in any 30 consecutive trading days, or (2) if USISH is deemed to change the use of the funds pursuant to the relevant regulations of the China Securities Regulatory Commission or USISH is identified by the China Securities Regulatory Commission as changing the use of funds before the maturity. In addition, on the date of 3 years from the offering date, holders of USISH Bonds have the right to sell back all or part of USISH Bonds to USISH at 102% of the par value (including the interests accrued for the 3rd year).

At the offering date, USISH Bonds consisted of debt host contract (recognized under the line item of bonds payable), conversion right (recognized under the line item of non-controlling interests since it is an equity component of the bonds offered by the subsidiary), call option and put option (recognized under the line item of financial liabilities at FVTPL).

22. OTHER PAYABLES

	December 31		
	2023 (Retrospectively Adjusted)	2024	
	NT\$	NT\$	US\$ (Note 4)
Payables to contractors and equipment suppliers	\$ 10,810,065	\$ 28,437,260	\$ 867,254
Accrued salary and bonus	13,726,474	14,348,803	437,597
Accrued employees' compensation and remuneration to directors and supervisors	5,680,710	5,430,708	165,621
Accrued employee insurance	1,260,237	1,327,715	40,492
Accrued utilities	855,475	1,206,555	36,796
Others	<u>12,223,879</u>	<u>12,428,194</u>	<u>379,024</u>
	<u>\$ 44,556,840</u>	<u>\$ 63,179,235</u>	<u>\$ 1,926,784</u>

23. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

- 1) The pension plan under the R.O.C. Labor Pension Act ("LPA") for the Group's R.O.C. resident employees is a government-managed defined contribution plan. Based on the LPA, the Company and its subsidiaries in R.O.C. makes monthly contributions to employees' individual pension accounts at 6% of their monthly salaries.
- 2) The subsidiaries of the Group located in countries other than R.O.C. also make contributions at various ranges according to relevant local regulations.

b. Defined benefit plans

- 1) The Company and its subsidiaries in R.O.C. joined the defined benefit pension plan under the R.O.C. Labor Standards Law operated by the government. Pension benefits are calculated on the basis of the length of service and average monthly salaries of the last six months before retirement. The Company and its subsidiaries in R.O.C. make contributions based on a certain percentage of their domestic employees' monthly salaries to a pension fund administered by the pension fund monitoring committee. Before the end of each year, the Company and its subsidiaries in R.O.C. assess the balance in the pension fund. If the balance in the pension fund is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company and its subsidiaries in R.O.C. are required to fund the difference in one appropriation that should be made by the end of March in the next year. Pension contributions are deposited in the Bank of Taiwan in the committee's name and are managed by the Bureau of Labor Funds, Ministry of Labor ("the Bureau"); the Company and its subsidiaries in Taiwan have no right to influence the investment policy and strategy.
- 2) Pension plans for certain subsidiaries of the Group stipulate that employees with service years exceeding agreed years are entitled to receive a lump-sum payment based on their length of service and the agreed salaries at the time of termination of employment.
- 3) ASE, SPIL, ASE Test, Inc. and ASEE have pension plans for executive managers. Pension costs under the plans were NT\$7,735 thousand, NT\$11,898 thousand and NT\$10,434 thousand (US\$318 thousand), and the remeasurement losses were NT\$3,778 thousand, NT\$954 thousand and NT\$12,035 thousand (US\$367 thousand) (recognized under the line item of net defined benefit liabilities) for the years ended December 31, 2022, 2023 and 2024, respectively. As of December

31, 2023 and 2024, accrued pension liabilities for executive managers were NT\$383,805 thousand and NT\$381,020 thousand (US\$11,620 thousand), respectively.

- 4) The amounts included in the consolidated balance sheets arising from the Group's obligation in respect of its defined benefit plans excluding those for executive managers were as follows:

	December 31		
	2023	2024	
	(Retrospectively Adjusted)		
	NT\$	NT\$	US\$ (Note 4)
Present value of the defined benefit obligation	\$ 10,201,794	\$ 10,123,897	\$ 308,749
Fair value of the plan assets	(6,617,058)	(7,254,310)	(221,235)
Net defined benefit liabilities	3,584,736	2,869,587	87,514
Recorded under other payables	(20,281)	(18,622)	(568)
Recorded under other non-current assets	181,844	164,176	5,007
Recorded under net defined benefit liabilities	\$ 3,746,299	\$ 3,015,141	\$ 91,953
Movements in net defined benefit liabilities were as follows:			
	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liabilities (Assets)
	NT\$	NT\$	NT\$
Balance at January 1, 2022	\$ 11,424,860	\$ (5,863,264)	\$ 5,561,596
Service cost			
Current service cost	141,458	-	141,458
Past service cost and gain on settlements	(100)	-	(100)
Net interest expense (income)	118,489	(79,441)	39,048
Recognized in profit or loss	259,847	(79,441)	180,406
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(324,510)	(324,510)
Actuarial (gain) loss			
Changes in financial assumptions	(1,053,680)	-	(1,053,680)
Experience adjustments	217,658	-	217,658
Changes in demographic assumptions	(507)	-	(507)
Recognized in other comprehensive income	(836,529)	(324,510)	(1,161,039)
Contributions from the employer	-	(736,508)	(736,508)
Benefits paid from the pension fund	(571,930)	571,930	-
Benefits paid from the Group	(115,695)	-	(115,695)

(Continued)

	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liabilities (Assets)
	NT\$	NT\$	NT\$
Assets extinguished on settlement	\$ (2,920)	\$ -	\$ (2,920)
Exchange differences on foreign plans	<u>104,364</u>	<u>(46,084)</u>	<u>58,280</u>
Balance at December 31, 2022	<u>10,261,997</u>	<u>(6,477,877)</u>	<u>3,784,120</u>
Service cost			
Current service cost	126,956	-	126,956
Past service cost and loss on settlements	1,194	-	1,194
Net interest expense (income)	236,102	(173,994)	62,108
Other termination benefit cost	<u>7,822</u>	<u>-</u>	<u>7,822</u>
Recognized in profit or loss	<u>372,074</u>	<u>(173,994)</u>	<u>198,080</u>
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(9,327)	(9,327)
Actuarial (gain) loss			
Changes in financial assumptions	391,077	-	391,077
Experience adjustments	(309,843)	-	(309,843)
Changes in demographic assumptions	<u>(6,476)</u>	<u>-</u>	<u>(6,476)</u>
Recognized in other comprehensive income	<u>74,758</u>	<u>(9,327)</u>	<u>65,431</u>
Contributions from the employer	-	(597,870)	(597,870)
Benefits paid from			
the pension fund	(615,377)	609,975	(5,402)
the Group	(79,659)	-	(79,659)
Liabilities extinguished on settlement	(2,830)	-	(2,830)
Liabilities assumed in a business combination (Note 29)	204,975	-	204,975
Exchange differences on foreign plans	<u>(14,144)</u>	<u>32,035</u>	<u>17,891</u>
Balance at December 31, 2023 (Retrospectively Adjusted)	<u>10,201,794</u>	<u>(6,617,058)</u>	<u>3,584,736</u>
Service cost			
Current service cost	139,168	-	139,168
Past service cost and gain on settlements	274	-	274
Net interest expense (income)	<u>205,562</u>	<u>(144,003)</u>	<u>61,559</u>
Recognized in profit or loss	<u>345,004</u>	<u>(144,003)</u>	<u>201,001</u>
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(437,258)	(437,258)
Actuarial (gain) loss			
Changes in financial assumptions	(46,189)	-	(46,189)

(Continued)

	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liabilities (Assets)
	NT\$	NT\$	NT\$
Experience adjustments	\$ 249,911	\$ -	\$ 249,911
Changes in demographic assumptions	<u>(16,009)</u>	<u>-</u>	<u>(16,009)</u>
Recognized in other comprehensive income	<u>187,713</u>	<u>(437,258)</u>	<u>(249,545)</u>
Contributions from the employer	-	(646,687)	(646,687)
Benefits paid from the pension fund	(539,124)	539,124	-
the Group	(124,601)	-	(124,601)
Liabilities extinguished on settlement	(5,836)	566	(5,270)
Liabilities assumed in a business combination (Note 29)	158,053	-	158,053
Exchange differences on foreign plans	<u>(99,106)</u>	<u>51,006</u>	<u>(48,100)</u>
Balance at December 31, 2024	<u>\$ 10,123,897</u>	<u>\$ (7,254,310)</u>	<u>\$ 2,869,587</u> (Concluded)
	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liabilities (Assets)
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
Balance at December 31, 2023 (Retrospectively Adjusted)	<u>\$ 311,125</u>	<u>\$ (201,801)</u>	<u>\$ 109,324</u>
Service cost			
Current service cost	4,245	-	4,245
Past service cost and gain on settlements	8	-	8
Net interest expense (income)	<u>6,269</u>	<u>(4,392)</u>	<u>1,877</u>
Recognized in profit or loss	<u>10,522</u>	<u>(4,392)</u>	<u>6,130</u>
Remeasurement			
Return on plan assets (excluding amounts included in net interest)	-	(13,335)	(13,335)
Actuarial (gain) loss			
Changes in financial assumptions	(1,409)	-	(1,409)
Experience adjustments	7,622	-	7,622
Changes in demographic assumptions	<u>(488)</u>	<u>-</u>	<u>(488)</u>
Recognized in other comprehensive income	<u>5,725</u>	<u>(13,335)</u>	<u>(7,610)</u>
Contributions from the employer	-	(19,722)	(19,722)
Benefits paid from the pension fund	(16,442)	16,442	-
the Group	(3,800)	-	(3,800)
			(Continued)

	Present Value of the Defined Benefit Obligation	Fair Value of the Plan Assets	Net Defined Benefit Liabilities (Assets)
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
Liabilities extinguished on settlement	\$ (178)	\$ 17	\$ (161)
Liabilities assumed in a business combination (Note 29)	4,820	-	4,820
Exchange differences on foreign plans	<u>(3,023)</u>	<u>1,556</u>	<u>(1,467)</u>
Balance at December 31, 2024	<u>\$ 308,749</u>	<u>\$ (221,235)</u>	<u>\$ 87,514</u> (Concluded)

- 5) The fair value of the plan assets by major categories at each balance sheet date was as follows:

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Cash	\$ 2,373,133	\$ 2,394,070	\$ 73,012
Equity instruments	2,872,293	3,305,989	100,823
Debt instruments	1,117,087	1,246,361	38,010
Others	<u>254,545</u>	<u>307,890</u>	<u>9,390</u>
Total	<u>\$ 6,617,058</u>	<u>\$ 7,254,310</u>	<u>\$ 221,235</u>

- 6) Through the defined benefit plans under the Labor Standards Law of the R.O.C., the Group in R.O.C. are exposed to the following risks:

a) Investment risk

The plan assets are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the Bureau or under the mandated management. However, in accordance with relevant regulations, the return generated by plan assets should not be below the interest rate for a 2-year time deposit with local banks.

b) 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 plan's debt investments.

c) 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.

- 7) The management of ASE (Korea) Inc. is responsible for the administration of the fund and determination of the investment strategies according to related local regulations. ASE (Korea) Inc. is responsible for the shortfall between the fund and the defined benefit obligation. The plan assets are investment in the certificates of deposits.

- 8) The present value of the defined benefit obligation and the related current service cost and past service cost were measured using the Projected Unit Credit Method. Except the pension plans for executive managers, the key assumptions used for the actuarial valuations were as follow:

	December 31	
	2023	2024
Discount rates (%)	0.16-4.91	0.81-6.50
Expected rates of salary increase (%)	1.00-4.06	1.00-5.00

The sensitivity analysis below has been determined based on reasonably possible changes of the respective assumptions occurring at each balance sheet date, while holding all other assumptions constant.

	December 31		
	2023 (Retrospectively Adjusted)	2024	
	NT\$	NT\$	US\$ (Note 4)
Discount rate			
0.5% higher	\$ (432,421)	\$ (641,795)	\$ (19,573)
0.5% lower	\$ 467,308	\$ 687,690	\$ 20,973
Expected rates of salary increase			
0.5% higher	\$ 425,080	\$ 646,395	\$ 19,713
0.5% lower	\$ (397,988)	\$ (607,402)	\$ (18,524)

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.

- 9) Maturity analysis of undiscounted pension benefit

	December 31		
	2023 (Retrospectively Adjusted)	2024	
	NT\$	NT\$	US\$ (Note 4)
No later than 1 year	\$ 699,372	\$ 677,634	\$ 20,666
Later than 1 year but not later than 5 years	2,814,648	2,870,872	87,553
Later than 5 years	10,045,901	9,579,301	292,141
	<u>\$ 13,559,921</u>	<u>\$ 13,127,807</u>	<u>\$ 400,360</u>

The Group expected to make contributions of NT\$600,399 thousand and NT\$414,648 thousand (US\$12,646 thousand) to the defined benefit plans in the next year starting from January 1, 2024 and 2025, respectively.

As of December 31, 2023 and 2024, the average duration of the defined benefit obligation of the Group was 7 to 13 years and 6 to 12 years, respectively.

24. EQUITY

a. Share capital

Ordinary shares

	December 31	
	2023	2024
Numbers of shares authorized (in thousands)	<u>5,500,000</u>	<u>5,500,000</u>
Numbers of shares reserved (in thousands)		
Employee share options	<u>400,000</u>	<u>400,000</u>
Number of shares issued and fully paid (in thousands)	<u>4,385,465</u>	<u>4,415,251</u>

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Share capital authorized	<u>\$ 55,000,000</u>	<u>\$ 55,000,000</u>	<u>\$ 1,677,341</u>
Share capital reserved			
Employee share options	<u>\$ 4,000,000</u>	<u>\$ 4,000,000</u>	<u>\$ 121,988</u>

American Depositary Receipts

The Company's ADS represents 2 ordinary shares of the Company. As of December 31, 2023 and 2024, 157,164 thousand ADSs were outstanding and represented approximately 314,328 thousand ordinary shares of the Company.

b. Capital surplus

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
May be used to offset a deficit, distributed as cash dividends, or transferred to share capital (1)			
Issuance of ordinary shares	\$ 15,737,752	\$ 16,519,296	\$ 503,791
Merger by share exchange	117,693,658	117,693,658	3,589,316
Difference between consideration and the carrying amount of the subsidiaries' net assets during actual disposal or acquisition	3,240,987	3,240,987	98,841
Exercised employee share options	3,503,786	3,706,398	113,034
Treasury share transactions	679,791	1,059,253	32,304
Donation from shareholders	471,894	471,894	14,391
Expired share options	<u>646,773</u>	<u>647,094</u>	<u>19,735</u>
	<u>141,974,641</u>	<u>143,338,580</u>	<u>4,371,412</u>

(Continued)

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
<u>May be used to offset a deficit only</u>			
Changes in percentage of ownership interest in subsidiaries (2)	\$ 208,310	\$ 40,151	\$ 1,224
Share of changes in capital surplus of associates accounted for using the equity method	21,584	26,029	794
Dividends that the claim period has elapsed and unclaimed by shareholders	6,130	6,198	189
Exercised disbursement	<u>326</u>	<u>326</u>	<u>10</u>
	<u>236,350</u>	<u>72,704</u>	<u>2,217</u>
<u>May not be used for any purpose</u>			
Employee share options	1,904,176	3,325,062	101,405
Employee restricted stock awards	(49,650)	1,861,744	56,778
Others (3)	<u>207,109</u>	<u>119,172</u>	<u>3,634</u>
	<u>2,061,635</u>	<u>5,305,978</u>	<u>161,817</u>
	<u>\$ 144,272,626</u>	<u>\$ 148,717,262</u>	<u>\$ 4,535,446</u>
			(Concluded)

- 1) Such capital surplus may be used to offset a deficit; in addition, when the Company has no deficit, such capital surplus may be distributed as cash dividends or transferred to share capital (limited to a certain percentage of the Company's capital surplus and once a year).
- 2) Such capital surplus arises from the effects of changes in ownership interests in subsidiaries resulting from equity transactions other than actual disposals or acquisitions, or from changes in capital surplus of subsidiaries accounted for using the equity method.
- 3) Such capital surplus represents the excess of the carrying amount of related accounts over the par value due to employee share options exercised and the Company has not completed registration formalities.

c. Retained earnings and dividend policy

The Articles of Incorporation of the Company (the "Articles") provides that annual net income shall be distributed in the following order:

- 1) Replenishment of deficits;
- 2) 10.0% as legal reserve;
- 3) Special reserve appropriated or reversed in accordance with laws or regulations set forth by the authorities concerned;
- 4) If annual net income remains, a proposal for the distribution of such amount together with a part or all of the accumulated undistributed profits from previous years shall be prepared by the board of directors and submit to the shareholders' meeting for resolution. However, the distributable dividends may be paid in cash after a resolution has been adopted by a majority vote at a meeting of the board of directors attended by two-thirds of the total number of directors; and, in addition, a report of such distribution shall be submitted to the shareholders' meeting.

For the policies on the distribution of employees' compensation and remuneration of directors, refer to employees' compensation and remuneration of directors in Note 25(g).

The Company is currently in the mature growth stage. To meet the capital needs for business development now and in the future and satisfy the shareholders' demand for cash inflows, the Company shall use residual dividend policy to distribute dividends, of which the cash dividend is not lower than 30% of the total dividend distribution, with the remainder to be distributed in shares. A distribution plan is also to be made by the board of directors and submitted for resolution in the shareholders' meeting.

Appropriation of earnings to legal reserve shall be made until the legal reserve equals the Company's share capital. Legal reserve may be used to offset deficits. If the Company has no deficit and the legal reserve has exceeded 25% of the Company's share capital, the excess may be transferred to capital or distributed in cash.

Items referred to under Rule No. 1090150022 issued by the Financial Supervisory Commission R.O.C. and in the directive titled "Questions and Answers for Special Reserves Appropriated Following Adoption of IFRS Accounting Standards" should be appropriated to or reversed from a special reserve by the Company.

The appropriation of earnings for 2022 and 2023 were as follows:

	Appropriation of Earnings		Dividends Per Share	
	For Year 2022	For Year 2023	For Year 2022	For Year 2023
	NT\$	NT\$	NT\$	NT\$
			(in dollars)	(in dollars)
Legal reserve	\$ 6,001,564	\$ 3,232,866		
Special reserve (reversed)	\$ (6,845,501)	\$ (167,613)		
Cash dividends	\$ 38,482,083	\$ 22,838,947	\$ 8.8	\$ 5.2

The above 2022 and 2023 appropriations for cash dividends were resolved by the Company's board of directors in March 2023 and 2024, respectively; the other proposed appropriations were resolved by the shareholders' meeting in June 2023 and 2024, respectively.

d. Others equity items

1) Exchange differences on translating foreign operations

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Balance at January 1	\$ (15,393,646)	\$ (5,529,388)	\$ (7,034,629)	\$ (214,536)
Recognized for the year				
Exchange differences arising on translating foreign operations	9,981,949	(1,488,920)	12,101,346	369,056

(Continued)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Share from associates and joint ventures accounted for using the equity method	\$ (117,691)	\$ (16,321)	\$ (15,711)	\$ (479)
Balance at December 31	\$ (5,529,388)	\$ (7,034,629)	\$ 5,051,006	\$ 154,041 (Concluded)

2) Unrealized gain (loss) on financial assets at FVTOCI

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Balance at January 1	\$ 4,190,361	\$ 1,275,505	\$ 3,549,648	\$ 108,254
Unrealized gain (loss) recognized for the year				
Debt instruments	(16,746)	(22,599)	(14,830)	(452)
Equity instruments	(8,360)	(77,496)	(18,871)	(576)
Share from associates and joint ventures accounted for using the equity method	(2,928,173)	2,447,656	155,784	4,751
Other comprehensive income for the year	(2,953,279)	2,347,561	122,083	3,723
Cumulative unrealized loss of equity instruments transferred to retained earnings due to disposal	190,500	230,940	72,049	2,197
Cumulative unrealized gain transferred to retained earnings due to disposal of equity instruments in relation to associates and joint venture accounted for using the equity method	(152,077)	(304,358)	(13,221)	(403)
Balance at December 31	\$ 1,275,505	\$ 3,549,648	\$ 3,730,559	\$ 113,771

3) Gain (loss) on hedging instruments – hedges of net investments of foreign operations

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Balance at January 1	\$ 121,833	\$ 520,281	\$ 277,441	\$ 8,461
Recognized for the year				
Foreign currency risk - loans denominated in foreign currency	398,448	(242,840)	438,262	13,366
Balance at December 31	<u>\$ 520,281</u>	<u>\$ 277,441</u>	<u>\$ 715,703</u>	<u>\$ 21,827</u>

4) Unearned employee benefit

In August 2021 and June 2024, the shareholders' meeting resolved to issue restricted stock awards to employees. Refer to Note 28 for the information.

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Balance at January 1	\$ (1,164,991)	\$ (432,847)	\$ -	\$ -
Issuance of shares	-	-	(1,954,312)	(59,600)
Share-based payment expenses	728,748	11,840	395,487	12,061
Valuation adjustments	3,396	421,007	(72,432)	(2,209)
Balance at December 31	<u>\$ (432,847)</u>	<u>\$ -</u>	<u>\$ (1,631,257)</u>	<u>\$ (49,748)</u>

e. Treasury shares

For the years ended December 31, 2023 and 2024, 72,941 thousand ordinary shares of the Company were held by its subsidiaries.

The Company's shares held by its subsidiaries at each balance sheet date were as follows:

	Shares Held by Subsidiaries (in thousand shares)	Carrying Amount NT\$	Carrying Amount US\$ (Note 4)	Fair Value NT\$	Fair Value US\$ (Note 4)
<u>December 31, 2023</u>					
ASE	67,452	\$ 1,762,430		\$ 9,106,036	
ASE Test, Inc.	<u>5,489</u>	<u>196,677</u>		<u>741,067</u>	
	<u>72,941</u>	<u>\$ 1,959,107</u>		<u>\$ 9,847,103</u>	

(Continued)

	Shares Held by Subsidiaries (in thousand shares)	Carrying Amount NT\$	Carrying Amount US\$ (Note 4)	Fair Value NT\$	Fair Value US\$ (Note 4)
<u>December 31, 2024</u>					
ASE	67,452	\$ 1,762,430	\$ 53,749	\$10,927,243	\$ 333,249
ASE Test, Inc.	<u>5,489</u>	<u>196,677</u>	<u>5,998</u>	<u>889,281</u>	<u>27,121</u>
	<u>72,941</u>	<u>\$ 1,959,107</u>	<u>\$ 59,747</u>	<u>\$11,816,524</u>	<u>\$ 360,370</u> (Concluded)

The aforementioned fair value is classified as Level 1 fair value with quoted prices in an active market.

Under the Securities and Exchange Act in the R.O.C., the Company shall neither pledge treasury shares nor exercise shareholders' rights on these shares, such as the rights to dividends and voting. The subsidiaries holding the aforementioned treasury shares are bestowed shareholders' rights except the rights to participate in any share issuance for cash and voting.

f. Non-controlling interests

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Balance at January 1	\$ 14,544,415	\$ 18,608,124	\$ 20,270,547	\$ 618,193
Share of profit for the year	3,116,549	1,849,952	1,437,974	43,854
Other comprehensive income				
(loss) for the year				
Exchange difference on				
translating foreign				
operations	344,780	(47,301)	687,077	20,954
Unrealized gain (loss) on				
equity instruments at				
FVTOCI	(44,852)	26,560	6,599	201
Gain (loss) from hedging	110,781	(69,189)	124,336	3,792
Remeasurement on				
defined benefit plans	51,582	(15,876)	3,270	100
Share in other				
comprehensive loss				
from associates				
accounted for using the				
equity method	(35,142)	(7,514)	(7,157)	(218)
Repurchase of outstanding				
shares by subsidiaries				
(Note 31)	(312,775)	-	(270,291)	(8,243)
Disposal of subsidiary	-	(295,895)	-	-
Non-controlling interest				
arising from capital				
increase of subsidiaries	-	427,913	177,487	5,413

(Continued)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
The Group's subscription for subsidiaries' capital increase at a percentage different from its existing ownership (Note 31)	\$ -	\$ -	\$ 69,141	\$ 2,108
Cash dividends distributed to non-controlling interests	(575,089)	(912,261)	(593,390)	(18,097)
Non-controlling interest relating to outstanding vested employee share options granted by subsidiaries	315,871	293,740	238,183	7,264
Equity component of convertible bonds issued by subsidiaries	<u>1,092,004</u>	<u>412,294</u>	<u>100,885</u>	<u>3,077</u>
Balance at December 31	<u>\$ 18,608,124</u>	<u>\$ 20,270,547</u>	<u>\$ 22,244,661</u>	<u>\$ 678,398</u> (Concluded)

25. PROFIT BEFORE INCOME TAX

a. Other operating income and expenses, net

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Rental income	\$ 656,745	\$ 692,010	\$ 702,916	\$ 21,437
Gain on disposal of property, plant and equipment	113,356	161,761	208,980	6,373
Royalty income	638,867	674,859	275,289	8,396
Impairment loss on non-financial assets (Notes 15 and 19)	(327,569)	(146,570)	(133,880)	(4,083)
Others	<u>(67,071)</u>	<u>(60,290)</u>	<u>119,287</u>	<u>3,638</u>
	<u>\$ 1,014,328</u>	<u>\$ 1,321,770</u>	<u>\$ 1,172,592</u>	<u>\$ 35,761</u>

b. Other income

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Interest income				
Bank deposits	\$ 646,407	\$ 1,510,422	\$ 1,853,558	\$ 56,528
Interest income from loans to related parties (Note 35)	-	-	29,960	914
Contracts with customers	8,340	2,985	-	-
				(Continued)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Government subsidies	\$ 797,612	\$ 940,127	\$ 846,404	\$ 25,813
Dividends income	<u>278,381</u>	<u>256,160</u>	<u>194,812</u>	<u>5,941</u>
	<u>\$ 1,730,740</u>	<u>\$ 2,709,694</u>	<u>\$ 2,924,734</u>	<u>\$ 89,196</u> (Concluded)

c. Other gains and losses

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Net gain on financial assets mandatorily at FVTPL	\$ 10,244,928	\$ 6,155,995	\$ 11,726,761	\$ 357,632
Net loss arising on financial instruments held for trading	(6,137,183)	(4,295,484)	(1,908,202)	(58,195)
Gain on disposal of subsidiaries (Note 30)	-	529,721	-	-
Foreign exchange gains (losses), net	(2,459,474)	998,111	(5,538,433)	(168,907)
Gain on bargain purchase (Note 29)	-	-	76,715	2,340
Impairment loss on investments accounted for using the equity method (Note 14)	(61,206)	-	(42,143)	(1,285)
Gain on disposal of investments accounted for using the equity method	80,317	55,795	20,952	639
Others	<u>-</u>	<u>-</u>	<u>14,342</u>	<u>438</u>
	<u>\$ 1,667,382</u>	<u>\$ 3,444,138</u>	<u>\$ 4,349,992</u>	<u>\$ 132,662</u>

d. Finance costs

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Interest on lease liabilities	\$ 134,871	\$ 148,916	\$ 184,970	\$ 5,641
Interest on borrowings and bonds payable	<u>3,912,526</u>	<u>6,197,706</u>	<u>6,848,484</u>	<u>208,859</u>
Total interest expense for financial liabilities measured at amortized cost	4,047,397	6,346,622	7,033,454	214,500
Less: Amounts included in the cost of qualifying assets				
Property, plant and equipment	<u>(58,263)</u>	<u>(107,712)</u>	<u>(285,611)</u>	<u>(8,710)</u>
	3,989,134	6,238,910	6,747,843	205,790
Other finance costs	<u>20,648</u>	<u>33,176</u>	<u>29,189</u>	<u>890</u>
	<u>\$ 4,009,782</u>	<u>\$ 6,272,086</u>	<u>\$ 6,777,032</u>	<u>\$ 206,680</u>

Information relating to the capitalized borrowing costs was as follows:

	For the Year Ended December 31		
	2022	2023	2024
Annual interest capitalization rates			
Property, plant and equipment (%)	0.59-4.22	1.46-6.82	1.68-6.40

e. Depreciation and amortization

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Property, plant and equipment	\$ 48,945,756	\$ 51,799,481	\$ 53,500,799	\$ 1,631,619
Right-of-use assets	1,468,040	1,304,020	1,415,140	43,158
Investment properties	1,107,014	1,091,879	1,079,259	32,914
Other intangible assets	<u>3,931,079</u>	<u>3,906,483</u>	<u>3,820,014</u>	<u>116,499</u>
Total	<u>\$ 55,451,889</u>	<u>\$ 58,101,863</u>	<u>\$ 59,815,212</u>	<u>\$ 1,824,190</u>
Summary of depreciation by function				
Operating costs	\$ 47,894,701	\$ 49,701,740	\$ 51,031,493	\$ 1,556,313
Operating expenses	<u>3,626,109</u>	<u>4,493,640</u>	<u>4,963,705</u>	<u>151,378</u>
	<u>\$ 51,520,810</u>	<u>\$ 54,195,380</u>	<u>\$ 55,995,198</u>	<u>\$ 1,707,691</u>
Summary of amortization by function				
Operating costs	\$ 2,465,837	\$ 2,433,492	\$ 2,370,726	\$ 72,300
Operating expenses	<u>1,465,242</u>	<u>1,472,991</u>	<u>1,449,288</u>	<u>44,199</u>
	<u>\$ 3,931,079</u>	<u>\$ 3,906,483</u>	<u>\$ 3,820,014</u>	<u>\$ 116,499</u>

Refer to Note 19 for information relating to the line items in which any amortization of intangible assets is included.

f. Operating expenses directly related to investment properties

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Direct operating expenses of investment properties that generated rental income	<u>\$ 1,616,197</u>	<u>\$ 1,593,819</u>	<u>\$ 1,549,651</u>	<u>\$ 47,260</u>

g. Employee benefits expense

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Post-employment benefits				
Defined contribution plans	\$ 3,590,439	\$ 3,671,057	\$ 3,851,095	\$ 117,447

(Continued)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Defined benefit plans	\$ 188,141	\$ 209,978	\$ 213,990	\$ 6,526
	3,778,580	3,881,035	4,065,085	123,973
Equity-settled share-based payments	989,843	742,890	2,188,600	66,746
Other employee benefits	98,404,937	86,893,030	93,677,548	2,856,894
	<u>\$ 103,173,360</u>	<u>\$ 91,516,955</u>	<u>\$ 99,931,233</u>	<u>\$ 3,047,613</u>
Summary of employee benefits expense by function				
Operating costs	\$ 65,063,705	\$ 58,390,785	\$ 61,843,852	\$ 1,886,058
Operating expenses	<u>38,109,655</u>	<u>33,126,170</u>	<u>38,087,381</u>	<u>1,161,555</u>
	<u>\$ 103,173,360</u>	<u>\$ 91,516,955</u>	<u>\$ 99,931,233</u>	<u>\$ 3,047,613</u>
				(Concluded)

h. Employees' compensation and remuneration to directors

The Articles stipulates to distribute employees' compensation and remuneration to directors at the rates of 0.01%-1.00% and no higher than 0.75%, respectively, of net profit before income tax, employees' compensation and remuneration to directors.

	For the Year Ended December 31				
	2023		2024		
	Accrual Rate (%)	Accrual Amount	Accrual Rate (%)	Accrual Amount	
		NT\$		NT\$	US\$ (Note 4)
Employees' compensation	0.25	\$ 79,385	0.25	\$ 81,113	\$ 2,474
Remuneration to directors	0.40	127,016	0.25	79,947	2,438

If there is a change in the proposed amounts after the consolidated financial statement authorized for issue, the differences are recorded as a change in accounting estimate and will be adjusted in the following year.

In March 2023 and March 2024, the board of directors resolved the appropriations of employees' compensation and remuneration to directors in cash for 2022 and 2023, respectively. The differences between the resolved amounts and the accrued amounts reflected in the annual consolidated financial statements for the years ended December 31, 2022 and 2023 were deemed changes in estimates. The differences were NT\$1,572 thousand and NT\$1,951 thousand (US\$60 thousand) and were adjusted in net profit for each of the years ended December 31, 2023 and 2024, respectively.

	For Year 2022		For Year 2023	
	Employees' compensation	Remuneration to directors	Employees' compensation	Remuneration to directors
	NT\$	NT\$	NT\$	NT\$
Resolved by the board of directors	\$ 155,463	\$ 247,000	\$ 79,450	\$ 125,000
Recognized in the consolidated financial statements	<u>\$ 155,398</u>	<u>\$ 248,637</u>	<u>\$ 79,385</u>	<u>\$ 127,016</u>

Information for the employees' compensation and the remuneration to directors resolved by the board of directors is available at the Market Observation Post System website of the Taiwan Stock Exchange (the "TWSE").

26. INCOME TAX

The Company and its subsidiaries, ASE, SPIL and USIINC, have filed a consolidated tax return for corporate income tax and for unappropriated earnings.

a. Income tax recognized in profit or loss

The major components of income tax were as follows:

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Current income tax				
In respect of the current year	\$16,251,844	\$ 10,117,252	\$ 9,812,221	\$ 299,244
Income tax on unappropriated earnings	844,855	(3,449,958)	250,421	7,637
Changes in estimate for prior years	<u>(211,631)</u>	<u>(67,074)</u>	<u>(453,274)</u>	<u>(13,823)</u>
	<u>16,885,068</u>	<u>6,600,220</u>	<u>9,609,368</u>	<u>293,058</u>
Deferred income tax				
In respect of the current year	185,726	(1,352,999)	(1,568,365)	(47,831)
Changes in tax rates	(4,425)	2,763	(25,229)	(769)
Changes in estimate for prior years	2,481	35,465	(60,902)	(1,857)
Effect of foreign currency exchange differences	<u>76,684</u>	<u>18,514</u>	<u>(38,409)</u>	<u>(1,172)</u>
	<u>260,466</u>	<u>(1,296,257)</u>	<u>(1,692,905)</u>	<u>(51,629)</u>
Income tax expense recognized in profit or loss	<u>\$17,145,534</u>	<u>\$ 5,303,963</u>	<u>\$ 7,916,463</u>	<u>\$ 241,429</u>

A reconciliation of income tax expense calculated at the statutory rates and income tax expense recognized in profit or loss was as follows:

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Profit before income tax	<u>\$ 81,763,628</u>	<u>\$ 42,611,823</u>	<u>\$ 41,733,373</u>	<u>\$ 1,272,747</u>
Income tax expense calculated at the statutory rates	\$ 35,906,719	\$ 18,763,311	\$ 18,877,355	\$ 575,704
Nontaxable expense (income) in determining taxable income	(177,734)	1,132,092	668,184	20,378
Tax-exempt income	(14,789,999)	(7,369,986)	(7,727,576)	(235,669)

(Continued)

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Additional income tax on unappropriated earnings	\$ 844,855	\$ (3,449,958)	\$ 250,421	\$ 7,637
Income tax credits	(2,514,002)	(1,921,721)	(2,250,870)	(68,645)
The origination and reversal of temporary differences	1,304,931	69,767	(251,896)	(7,682)
Income tax adjustments on prior years	(209,150)	(31,609)	(514,176)	(15,681)
Unrecognized deferred tax liability for temporary differences associated with investments	(3,523,716)	(2,557,436)	(1,996,092)	(60,875)
Unrecognized loss carryforwards	271,730	455,437	746,146	22,755
Withholding tax	31,900	12,433	14,843	453
Land value increment tax	-	-	19,604	598
House and land transactions income tax	-	201,633	-	-
Others	-	-	80,520	2,456
Income tax expense recognized in profit or loss	<u>\$ 17,145,534</u>	<u>\$ 5,303,963</u>	<u>\$ 7,916,463</u>	<u>\$ 241,429</u> (Concluded)

b. Income tax recognized in other comprehensive income

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Deferred income tax				
Related to remeasurement of defined benefit plans	\$ (208,482)	\$ (2,214)	\$ (62,184)	\$ (1,896)
Unrealized gain (loss) on equity instruments at fair value through other comprehensive income	370,091	(262,404)	(22,288)	(680)
Unrealized loss on debt instruments at fair value through other comprehensive income	-	(5,792)	2,315	71
Income tax recognized in other comprehensive income	<u>\$ 161,609</u>	<u>\$ (270,410)</u>	<u>\$ (82,157)</u>	<u>\$ (2,505)</u>

d. Current tax assets and liabilities

	December 31		
	2023	2024	
	(Retrospectively Adjusted)	NT\$	US\$ (Note 4)
Current tax assets			
Tax refund receivable	\$ 363,226	\$ 548,905	\$ 16,740

(Continued)

	December 31		
	2023 (Retrospectively Adjusted)	2024	
	NT\$	NT\$	US\$ (Note 4)
Prepaid income tax	\$ 512,372	\$ 182,923	\$ 5,579
	\$ 875,598	\$ 731,828	\$ 22,319
Current tax liabilities			
Income tax payable	\$ 9,649,556	\$ 8,888,506	\$ 271,074
			(Concluded)

e. Deferred tax assets and liabilities

The Group offset certain deferred tax assets and deferred tax liabilities which met the offset criteria.

The movements of deferred tax assets and deferred tax liabilities were as follows:

For the year ended December 31, 2022

	Balance at January 1 NT\$	Recognized in Profit or Loss NT\$	Recognized in Other Comprehensive Income NT\$	Exchange Differences NT\$	Balance at December 31 NT\$
<u>Deferred tax assets</u>					
Temporary differences					
Property, plant and equipment	\$ 90,977	\$ 40,498	\$ -	\$ 16,953	\$ 148,428
Defined benefit obligation	1,188,153	(123,878)	(208,482)	6,641	862,434
FVTPL financial instruments	189,350	18,192	-	252	207,794
Others	2,870,714	718,909	-	179,881	3,769,504
	4,339,194	653,721	(208,482)	203,727	4,988,160
Loss carry-forward	638,782	(166,121)	-	22,824	495,485
Investment credits	391,034	452,656	-	14,437	858,127
	\$ 5,369,010	\$ 940,256	\$ (208,482)	\$ 240,988	\$ 6,341,772
<u>Deferred tax liabilities</u>					
Temporary differences					
Property, plant and equipment	\$ 5,916,744	\$ 63,813	\$ -	\$ 57,701	\$ 6,038,258
FVTPL financial instruments	12,580	519,142	-	89	531,811
Others	1,660,873	617,767	(370,091)	106,514	2,015,063
	\$ 7,590,197	\$ 1,200,722	\$ (370,091)	\$ 164,304	\$ 8,585,132

For the year ended December 31, 2023 (Retrospectively Adjusted)

	Balance at January 1 NT\$	Acquisitions through Business Combinations NT\$	Recognized in Profit or Loss NT\$	Recognized in Other Comprehensive Income NT\$	Exchange Differences NT\$	Balance at December 31 NT\$
<u>Deferred tax assets</u>						
Temporary differences						
Property, plant and equipment	\$ 148,428	\$ -	\$ 110,253	\$ -	\$ 7,483	\$ 266,164
Defined benefit obligation	862,434	-	(68,968)	(4,844)	30,685	819,307
FVTPL financial instruments	207,794	-	43,792	-	304	251,890
Others	3,769,504	893	316,527	-	95,392	4,182,316
	4,988,160	893	401,604	(4,844)	133,864	5,519,677
Loss carry-forward	495,485	-	56,005	-	3,807	555,297
Investment credits	858,127	-	(522,852)	-	(14,654)	320,621
	\$6,341,772	\$ 893	\$ (65,243)	\$ (4,844)	\$ 123,017	\$ 6,395,595
						(Continued)

	Balance at January 1	Acquisitions through Business Combinations	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Exchange Differences	Balance at December 31
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
<hr/> Deferred tax liabilities <hr/>						
Temporary differences						
Property, plant and equipment	\$ 6,038,258	\$ 10,410	\$ (902,114)	\$ -	\$ (11,093)	\$ 5,135,461
Defined benefit obligation	-	-	27,031	(2,630)	30,233	54,634
FVTPL financial instruments	531,811	-	(487,098)	-	368	45,081
Others	<u>2,015,063</u>	<u>99,535</u>	<u>681</u>	<u>268,196</u>	<u>84,995</u>	<u>2,468,470</u>
	<u>\$ 8,585,132</u>	<u>\$ 109,945</u>	<u>\$ (1,361,500)</u>	<u>\$ 265,566</u>	<u>\$ 104,503</u>	<u>\$7,703,646</u>

(Concluded)

For the year ended December 31, 2024

	Balance at January 1 (Retrospectively Adjusted)	Acquisitions through Business Combinations	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Exchange Differences	Balance at December 31
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
<hr/> Deferred tax assets <hr/>						
Temporary differences						
Property, plant and equipment	\$ 266,164	\$ 123,696	\$ (36,352)	\$ -	\$ 1,044	\$ 354,552
Defined benefit obligation	819,307	-	(149,680)	(62,170)	57,489	664,946
FVTPL financial instruments	251,890	-	(87,612)	-	(393)	163,885
Others	<u>4,182,316</u>	<u>16,067</u>	<u>347,938</u>	<u>-</u>	<u>(233,039)</u>	<u>4,313,282</u>
	5,519,677	139,763	74,294	(62,170)	(174,899)	5,496,665
Loss carry-forward	555,297	14,058	250,063	-	(74,040)	745,378
Investment credits	<u>320,621</u>	<u>-</u>	<u>558,641</u>	<u>-</u>	<u>54,066</u>	<u>933,328</u>
	<u>\$ 6,395,595</u>	<u>\$ 153,821</u>	<u>\$ 882,998</u>	<u>\$ (62,170)</u>	<u>\$ (194,873)</u>	<u>\$ 7,175,371</u>

<hr/> Deferred tax liabilities <hr/>						
Temporary differences						
Property, plant and equipment	\$ 5,135,461	\$ 92,842	\$ (1,573,888)	\$ -	\$ 71,505	\$ 3,725,920
Defined benefit obligation	54,634	-	(35,210)	14	(1,151)	18,287
FVTPL financial instruments	45,081	-	823,904	-	(237)	868,748
Others	<u>2,468,470</u>	<u>-</u>	<u>(24,713)</u>	<u>19,973</u>	<u>(226,581)</u>	<u>2,237,149</u>
	<u>\$ 7,703,646</u>	<u>\$ 92,842</u>	<u>\$ (809,907)</u>	<u>\$ 19,987</u>	<u>\$ (156,464)</u>	<u>\$ 6,850,104</u>
	Balance at January 1 (Retrospectively Adjusted)	Acquisitions through Business Combinations	Recognized in Profit or Loss	Recognized in Other Comprehensive Income	Exchange Differences	Balance at December 31
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)

<hr/> Deferred tax assets <hr/>						
Temporary differences						
Property, plant and equipment	\$ 8,117	\$ 3,772	\$ (1,108)	\$ -	\$ 32	\$ 10,813
Defined benefit obligation	24,986	-	(4,565)	(1,896)	1,753	20,278
FVTPL financial instruments	7,682	-	(2,672)	-	(12)	4,998
Others	<u>127,549</u>	<u>490</u>	<u>10,611</u>	<u>-</u>	<u>(7,107)</u>	<u>131,543</u>
	168,334	4,262	2,266	(1,896)	(5,334)	167,632
Loss carry-forward	16,935	429	7,626	-	(2,258)	22,732
Investment credits	<u>9,778</u>	<u>-</u>	<u>17,037</u>	<u>-</u>	<u>1,649</u>	<u>28,464</u>
	<u>\$ 195,047</u>	<u>\$ 4,691</u>	<u>\$ 26,929</u>	<u>\$ (1,896)</u>	<u>\$ (5,943)</u>	<u>\$ 218,828</u>

<hr/> Deferred tax liabilities <hr/>						
Temporary differences						
Property, plant and equipment	\$ 156,617	\$ 2,831	\$ (47,999)	\$ -	\$ 2,181	\$ 113,630
Defined benefit obligation	1,666	-	(1,074)	-	(35)	557
FVTPL financial instruments	1,375	-	25,127	-	(7)	26,495
Others	<u>75,281</u>	<u>-</u>	<u>(754)</u>	<u>609</u>	<u>(6,910)</u>	<u>68,226</u>
	<u>\$ 234,939</u>	<u>\$ 2,831</u>	<u>\$ (24,700)</u>	<u>\$ 609</u>	<u>\$ (4,771)</u>	<u>\$ 208,908</u>

- f. Deductible temporary differences, unused loss carryforwards and unused investment credits for which no deferred tax assets have been recognized in the consolidated balance sheets

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Loss carry-forward	\$ 1,759,044	\$ 2,464,350	\$ 75,156
Investment credits	77,436	-	-
Deductible temporary differences	<u>210,897</u>	<u>317,282</u>	<u>9,676</u>
	<u>\$ 2,047,377</u>	<u>\$ 2,781,632</u>	<u>\$ 84,832</u>

The unrecognized loss carry-forward will expire through 2043 or can be carried forward indefinitely according to the applicable tax laws of each tax jurisdiction.

- g. Information about unused loss carry-forward, investment credits, tax-exemption and other tax relief

As of December 31, 2024, the unused loss carry-forward comprised:

Expiry Year	NT\$	US\$ (Note 4)
2025	\$ 217,721	\$ 6,640
2026	271,741	8,287
2027	355,338	10,837
2028	239,156	7,293
2029 and thereafter	<u>2,125,772</u>	<u>64,831</u>
	<u>\$ 3,209,728</u>	<u>\$ 97,888</u>

As of December 31, 2024, unused investment credits comprised:

Tax Credit Source	Remaining Creditable Amount		Expiry Year
	NT\$	US\$ (Note 4)	
Purchase of machinery and equipment	\$ 842,119	\$ 25,682	2029 and thereafter
Others	<u>91,209</u>	<u>2,782</u>	2029 and thereafter
	<u>\$ 933,328</u>	<u>\$ 28,464</u>	

Some China subsidiaries qualified as high technology enterprises were entitled to a reduced income tax rate of 15% and were eligible to deduct certain times of research and development expenses from their taxable income.

- h. Unrecognized deferred tax liabilities associated with investments

As of December 31, 2023 and 2024, the taxable temporary differences associated with the investments in subsidiaries for which no deferred tax liabilities have been recognized were NT\$51,581,597 thousand and NT\$60,866,800 thousand (US\$1,856,261 thousand), respectively.

- i. Income tax assessments

The tax authorities have examined income tax returns of the Company and its R.O.C. subsidiaries through 2019 and 2022.

27. EARNINGS PER SHARE

The earnings and weighted average number of ordinary shares outstanding in the computation of earnings per share were as follows:

Net profit for the year

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Profit for the year attributable to owners of the Company	\$ 61,501,545	\$ 35,457,908	\$ 32,378,936	\$ 987,464
Effect of potentially dilutive ordinary shares:				
Potential ordinary shares of the subsidiary	<u>(1,811,449)</u>	<u>(494,272)</u>	<u>(747,333)</u>	<u>(22,791)</u>
Earnings used in the computation of diluted earnings per share	<u>\$ 59,690,096</u>	<u>\$ 34,963,636</u>	<u>\$ 31,631,603</u>	<u>\$ 964,673</u>

Weighted average number of ordinary shares outstanding (in thousand shares)

	For the Year Ended December 31		
	2022	2023	2024
Weighted average number of ordinary shares in the computation of basic earnings per share	4,274,687	4,295,871	4,318,991
Effect of potentially dilutive ordinary shares			
Employee share options	40,351	42,045	70,534
Employees' compensation	1,940	924	623
Employee restricted stock awards	<u>6,445</u>	<u>8,830</u>	<u>1,865</u>
Weighted average number of ordinary shares in the computation of diluted earnings per share	<u>4,323,423</u>	<u>4,347,670</u>	<u>4,392,013</u>

For the computation of earnings per ADS, the denominators were the half of the aforementioned weighted average outstanding shares (1 ADS represents 2 ordinary shares) while the numerators held constant.

The Group is able to settle the employees' compensation by cash or shares. The Group assumed that the entire amount of the compensation would be settled in shares and the resulting potential shares were included in the weighted average number of ordinary shares outstanding used in the computation of diluted earnings per share if the effect is dilutive. Such dilutive effect of the potential shares was included in the computation of diluted earnings per share until the board of directors approve the number of shares to be distributed to employees at their meeting in the following year.

28. SHARE-BASED PAYMENT ARRANGEMENTS

a. Employee share option plans of the Company

In order to attract, retain and reward employees, the Company and its subsidiary, ASE, have their employee share option plans for the Group's full-time employees. As disclosed in Note 1, the Company assumed ASE's obligations of outstanding employee share option plans starting from April 30, 2018, and each unexercised share option was converted at an exchange ratio of 1 for 0.5 share option of the

Company. After conversion, each share option represents the right to purchase one ordinary share of the Company when exercised, and the exercise price is subject to adjustment according to the exchange ratio. The Company has the first and the second employee share option plans in November 2018 and August 2023 for full-time employees of the Group, with each unit representing the right to purchase one ordinary share issued by the company. The right of those share options granted under the plans is valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date. For the employee share option plans the Company assumed and issued, the exercise price is subject to adjustment according to the prescribed criteria stipulated in employee share option plans.

Information about the share option plans that the Company granted and assumed were as follows:

	For the Year Ended December 31					
	2022		2023		2024	
	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (NT\$)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (NT\$)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (NT\$)
Balance at January 1	96,802	\$ 53.3	81,262	\$ 50.2	212,240	\$ 89.1
Options granted	-	-	150,000	107.0	-	-
Options forfeited	(1,206)	51.1	(1,471)	66.9	(5,873)	103.7
Options exercised	<u>(14,334)</u>	51.5	<u>(17,551)</u>	50.9	<u>(18,266)</u>	48.0
Balance at December 31	<u>81,262</u>	50.2	<u>212,240</u>	89.1	<u>188,101</u>	89.6
Options exercisable, end of year	<u>58,216</u>	51.3	<u>62,505</u>	46.5	<u>44,242</u>	44.3
Fair value of options granted (NT\$)	<u>-</u>		<u>29.7-35.1</u>		<u>-</u>	

The weighted average share prices at exercise dates of share options for the years ended December 31, 2022, 2023 and 2024 were NT\$92.4, NT\$112.4 and NT\$151.7 (US\$4.6), respectively.

Information about the outstanding share options at each balance sheet date was as follows:

	Range of Exercise Price Per Share (NT\$)	Weighted Average Remaining Contractual Life (Years)
December 31, 2023		
ASE 5 th share options	\$ 73.0	1.7
The Company 1 st share options	44.1	4.9
The Company 2 nd share options	107.0	9.6
December 31, 2024		
ASE 5 th share options	73.0	0.7
The Company 1 st share options	42.7	3.9
The Company 2 nd share options	103.5	8.6

b. Employee restricted stock awards plans of the Company

To attract and retain talents as well as motivate and engage employees, the Company's annual shareholders' meetings resolved the first and the second employee restricted stock awards plans in

August 2021 and June 2024, and granted 15,000 thousand ordinary shares and 16,500 thousand ordinary shares on the record date of October 1, 2021 and September 6, 2024, respectively. The par value and the exercise price were NT\$10 and NT\$0 per share, respectively. The fair value at the grant day was NT\$92.4 per share and NT\$141.5 (US\$4.3) per share, respectively.

The vested shares are settled and released on an annual basis during a three-year period starting from the grant date. Up to one-thirds of the total shares granted will be vested only the specific performance targets are recorded before the end of each year-period. Except for inheritance, those shares shall not be sold, pledged, transferred, gifted, conditioned, or otherwise dispose of before vest, while the rights of attending, proposing, speaking, voting and election at shareholders meeting and other rights, including but not limited to, stock dividend, cash dividend, distribution from legal reserve and capital surplus, share options at cash capital increase are identical with the Company's ordinary shares issued and outstanding. All the shares under this plan should be deposited in a trust account before vested.

Upon granting, any unvested restricted stock awards will be forfeited and canceled by the Company at no cost if the vesting conditions are not met. Meanwhile, dividends (including cash dividends, stock dividends, and those distributed from legal reserves and capital surplus, as well as any derived income) distributed on those unvested restricted stock awards for the current unvested year shall be fully returned to the Company by the custodian institution. For the year ended December 31, 2024, the Company repossessed and canceled a total of 4,965 thousand unvested restricted stock awards and the relevant changes in registration have been completed.

Information about employee restricted stock awards was as follows:

	For the Year Ended December 31		
	2022	2023	2024
	(in thousand shares)	(in thousand shares)	(in thousand shares)
Balance at January 1	15,000	10,000	4,965
Shares granted	-	-	16,500
Shares unrestricted	(5,000)	(4,950)	-
Shares forfeited	-	(70)	(4,965)
Shares awaiting canceled	-	(15)	-
Balance at December 31	<u>10,000</u>	<u>4,965</u>	<u>16,500</u>

c. Employee share option plans of subsidiaries

USISH

Under the share option plan issued in 2015 ("2015 share options"), each unit represents the right to purchase one ordinary share of USISH when exercised. The options are valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date incorporated with certain performance conditions. For any subsequent changes in USISH's capital structure, the exercise price is accordingly adjusted.

In November 2019, USISH adopted the share option plan ("2019 share options") and granted 17,167 thousand share options to its employees. Each unit represents the right to purchase one ordinary share of USISH when exercised. The options are valid for 3.0 years, 4.0 years and 5.0 years, respectively, and are exercisable at certain percentages within 12 months subsequent to the second, the third and the fourth anniversary of the grant date under the satisfaction of certain performance conditions within each respective vesting period. In the event that USISH increases share capital by capital surplus or by cash, or distributes share dividends or cash dividends, the exercisable share option units and the exercise price are accordingly adjusted.

In September 2020, USISH adopted the share option plan (“2020 share options”) and granted 1,140 thousand share options to its employees. The conditions of issued 2020 share options are the same as 2019 share options plan, except that the options are valid for 2.2 years, 3.2 years and 4.2 years, respectively, and with each respective vesting period of 1.2 years, 2.2 years and 3.2 years.

In September 2023, USISH’s extraordinary general shareholders’ meetings resolved to adopt the share option plan (“2023 share options”). In October 2023, the board of directors resolved to grant 14,506 thousand share options to its employees. The conditions of issued 2023 share options are the same as 2019 share options plan, except that the options are valid for 2 years and 3 years, respectively, and with each respective vesting period of 1 year and 2 years.

Information about share options was as follows:

	For the Year Ended December 31					
	2022		2023		2024	
	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)
Balance at January 1	29,486	\$ 14.2	20,246	\$ 14.5	29,728	\$ 14.7
Options granted	-	-	14,506	14.5	-	-
Options expired	(2,312)	13.9	(1,204)	14.1	(1,027)	14.2
Options forfeited	(942)	13.0	(695)	13.6	(7,855)	14.3
Options exercised	<u>(5,986)</u>	12.8	<u>(3,125)</u>	12.1	<u>(3,845)</u>	12.7
Balance at December 31	<u>20,246</u>	14.5	<u>29,728</u>	14.7	<u>17,001</u>	15.1
Options exercisable, end of year	<u>15,518</u>	15.0	<u>15,310</u>	14.9	<u>17,001</u>	15.1
Fair value of options granted (RMB)	<u>=====</u>		<u>3.8-4.7</u>		<u>=====</u>	

The weighted average share prices at exercise dates of share options for the years ended December 31, 2022, 2023 and 2024 were RMB15.4, RMB14.9 and RMB14.8, respectively.

Information about USISH’s outstanding share options at each balance sheet date was as follows:

	Range of Exercise Price Per Share (RMB)	Remaining Contractual Life (Years)
December 31, 2023		
2015 share options	\$ 15.5	1.9
2019 share options	12.0	0.9
2020 share options	20.5	0.9
2023 share options	14.5	2.8
December 31, 2024		
2015 share options	15.5	0.9
2023 share options	14.3	1.8

AMPI

In May 2021, the authority approved AMPI’s employee share options plan with the issuance up to

10,000 thousand units. The options are valid for 10 years, non-transferable and exercisable at certain percentages subsequent to the second anniversary of the grant date. For any subsequent changes in AMPI's capital structure, the exercise price will be adjusted accordingly.

Information about share options was as follows:

	For the Year Ended December 31					
	2022		2023		2024	
	Number of Options (In Thousands)	Exercise Price Per Share (NT\$)	Number of Options (In Thousands)	Exercise Price Per Share (NT\$)	Number of Options (In Thousands)	Exercise Price Per Share (NT\$)
Balance at January 1	-	\$ -	3,100	\$ 30.0	3,100	\$ 30.0
Options granted	<u>3,100</u>	30.0	<u>-</u>	-	<u>-</u>	-
Balance at December 31	<u>3,100</u>	30.0	<u>3,100</u>	30.0	<u>3,100</u>	29.7
Options exercisable, end of year	<u>-</u>	-	<u>-</u>	-	<u>1,550</u>	29.7
Fair value of options granted (NT\$)	<u>18.0-18.8</u>		<u>-</u>		<u>-</u>	

Information about AMPI's outstanding share options at each balance sheet date was as follows:

	Range of Exercise Price Per Share	Remaining Contractual Life (Years)
December 31, 2023		
2022 share options	\$ 30.0	8.3
December 31, 2024		
2022 share options	29.7	7.3

d. Employee restricted stock plans of subsidiaries

In September 2023, USISH's extraordinary general shareholders' meetings resolved to adopt restricted stock plan ("2023 restricted stocks"), and granted 372 thousand shares and 5,722 thousand shares in November 2023 and January 2024, respectively, to its directors (excluding independent directors), supervisors and employees. The options are valid for 3 years. The valid period may be early terminated or extended prior to one month of the expiration date depending on the conditions of ordinary shares granted. Upon satisfaction of certain performance conditions in each phase, participants are entitled to subscribe USISH's ordinary shares issued under the plan at a certain percentage at the end of the lock-up period. The plan was of 2 phases with a lock-up period of 1 year and 2 years, respectively.

Information about restricted stocks was as follows:

	For the Year Ended December 31					
	2022		2023		2024	
	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)
Balance at January 1	3,565	\$10.2	1,984	\$10.7	372	\$14.5

(Continued)

	For the Year Ended December 31					
	2022		2023		2024	
	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)	Number of Options (In Thousands)	Weighted Average Exercise Price Per Share (RMB)
Stocks granted	-	\$ -	372	\$14.5	5,722	\$14.4
Stocks expired	(4)	-	-	-	-	-
Stocks exercised	(395)	-	(1,966)	10.8	-	-
Stocks forfeited	<u>(1,182)</u>	12.2	<u>(18)</u>	-	<u>(3,175)</u>	14.4
Balance at December 31	<u>1,984</u>	10.7	<u>372</u>	14.5	<u>2,919</u>	14.4
Options exercisable, end of year	<u>1,715</u>	12.4	<u>-</u>	-	<u>-</u>	-
Fair value of restricted stocks granted (RMB)	<u>-</u>		<u>12.2-13.0</u>		<u>11.6-12.4</u>	

(Concluded)

Information about USISH's outstanding restricted stocks at each balance sheet date was as follows:

	Range of Exercise Price Per Share (RMB)	Remaining Contractual Life (Years)
December 31, 2023		
2023 restricted stocks	\$ 14.5	2.9
December 31, 2024		
2023 restricted stocks (2024 granted)	14.4	2.0
2023 restricted stocks (2023 granted)	14.5	1.9

e. Fair value information

Regarding the aforementioned share-based payment arrangements issued during 2023 and 2024, the fair value at the grant dates of the Company's second employee restricted stock awards plan and USISH's 2023 restricted stocks were measured by using the market price basis and the Black-Scholes Option Pricing Model incorporating the effect of the lock-up period, respectively. While the fair values for all the other plans were measured by using the Trinomial Tree Model. The inputs to the models were as follows:

Share options plan

	The Company's 2023 share options plan
Share price at the grant date	NT\$108.0 per share
Exercise price	NT\$107.0 per share
Expected volatility (%)	31.02-33.03
Expected lives (years)	3.9-6.1
Expected dividend yield	-
Risk free interest rate (%)	1.06-1.12

	USISH's 2023 share options plan
Share price at the grant date	RMB15.16 per share
Exercise price	RMB14.54 per share
Expected volatility (%)	38.51-39.09
Expected lives (years)	2.0-3.0
Expected dividend yield	-
Risk free interest rate (%)	2.35-2.45

Restricted stock plan

	USISH's 2023 restricted stocks plan (2023 granted)	USISH's 2023 restricted stocks plan (2024 granted)
Share price at the grant date	RMB15.02 per share	RMB14.19 per share
Exercise price	RMB14.54 per share	RMB14.35 per share
Expected volatility (%)	36.56-38.77	35.02-37.02
Lock-up periods (years)	1.0-2.0	1.0-2.0
Expected dividend yield	-	-
Risk free interest rate (%)	2.33-2.44	2.11-2.27

Expected volatilities were based on the annualized volatilities of historical share prices of the Company and USISH, respectively.

The Group's shareholdings in USISH decreased because the abovementioned share-based payment were exercised in 2022, 2023 and 2024. The transaction was accounted for as an equity transaction since the Group did not cease to have control over USISH and, as a result, capital surplus increased by NT\$125,049 thousand, NT\$90,773 thousand and NT\$81,947 thousand (US\$2,499 thousand) in 2022, 2023 and 2024, respectively.

For the years ended December 31, 2022, 2023 and 2024, employee benefits expense recognized on the aforementioned share-based payment were NT\$989,843 thousand, NT\$742,890 thousand and NT\$2,188,600 thousand (US\$66,746 thousand), respectively.

29. BUSINESS COMBINATIONS

a. Subsidiaries acquired

			Proportion of Voting Equity Interests Acquired (%)	Consideration Transferred	
	Principal Activity	Date of Acquisition		NT\$	US\$ (Note 4)
Hirschmann	Holding company and the group engaged in the design and manufacturing of automotive components	October 27, 2023	100.00	<u>\$ 2,317,201</u>	
ASEPCAYMAN	Engaged in the packaging and testing of semiconductors	August 1, 2024	100.00	<u>\$ 1,096,373</u>	<u>\$ 33,436</u>
CHE	Engaged in the packaging and testing of semiconductors	August 1, 2024	100.00	<u>\$ 1,945,678</u>	<u>\$ 59,338</u>

b. Consideration transferred

	Hirschmann	ASEPCAYMAN		CHE	
	NT\$	NT\$	US\$ (Note 4)	NT\$	US\$ (Note 4)
Cash	\$ 2,317,201	\$ 725,059	\$ 22,112	\$ 1,713,092	\$ 52,245
Contingent considerations	-	371,314	11,324	232,586	7,093
	<u>\$ 2,317,201</u>	<u>\$ 1,096,373</u>	<u>\$ 33,436</u>	<u>\$ 1,945,678</u>	<u>\$ 59,338</u>

In March 2023, the board of directors of USISH resolved to establish a special purpose vehicle (“SPV”, of which 75.1% ownership is owned by USISH’s wholly-owned subsidiary, Universal Global Technology Co., Limited (“UGT”), and 24.9% ownership is owned by an unrelated party, Ample Trading, Co., Ltd. (“Ample Trading”). The SPV then acquired the automotive wireless business (hereunder, the “Target Business”) carved out from an unrelated party, TE Connectivity Ltd. The consideration for the acquisition was approximately NT\$2,317,201 thousand, equivalent to US\$71,452 thousand as the original transaction currency, which was based on the overall valuation of the Target Business and an adjustment for the net debt and net working capital of the Target Business as of the settlement date. The consideration was fully paid in October 2023 and May 2024, respectively.

In February 2024, ASE and ASE (Korea) Inc. entered into share purchase agreements with Cypress Semiconductor Technology Ltd. and Infineon Technologies AG to acquire 100% shareholdings of ASEPCAYMAN and CHE, respectively. The final purchase price will be adjusted in accordance with the method stipulated in the share purchase agreements. As of December 31, 2024, the consideration of NT\$725,059 thousand (US\$22,112 thousand), equivalent to EUR20,403 thousand as the original transaction currency, and NT\$1,713,092 thousand (US\$52,245 thousand), equivalent to EUR48,239 thousand as the original transaction currency, were paid. In addition, according to the share purchase agreement, if operating revenue of ASEPCAYMAN and CHE reaches the predetermined target in the respective years of 2025, 2026 and 2027, the remaining consideration will be paid in annual tranches. If the target is not reached in any one of the three years, the corresponding portion of the remaining consideration will be paid in 2028. As of December 31, 2024, the remaining consideration was recognized as contingent considerations under financial liabilities at FVTPL.

c. Assets acquired and liabilities assumed at the date of acquisition

	Hirschmann	ASEPCAYMAN		CHE	
	NT\$	NT\$	US\$ (Note 4)	NT\$	US\$ (Note 4)
Assets					
Cash and cash equivalents	\$ 118,419	\$ 404,573	\$ 12,338	\$ 1,381,103	\$ 42,120
Trade and other receivables	1,336,203	213,592	6,514	87,935	2,682
Inventories	1,079,301	58,564	1,786	112,115	3,419
Property, plant and equipment	745,660	919,648	28,046	421,792	12,863
Right-of-use assets	143,629	-	-	96,894	2,955
Others	167,521	69,707	2,126	197,450	6,022
Liabilities					
Trade and other payables	(745,653)	(263,095)	(8,023)	(200,453)	(6,113)
Lease liabilities	(143,629)	-	-	(96,894)	(2,955)
Net defined benefit liabilities	(204,975)	(158,053)	(4,820)	-	-
Others	<u>(200,276)</u>	<u>(71,848)</u>	<u>(2,191)</u>	<u>(54,264)</u>	<u>(1,655)</u>
Fair value of identifiable net assets acquired	<u>\$ 2,296,200</u>	<u>\$ 1,173,088</u>	<u>\$ 35,776</u>	<u>\$ 1,945,678</u>	<u>\$ 59,338</u>

d. Goodwill (gain on bargain purchase) recognized on acquisition

	Hirschmann	ASEPCAYMAN		CHE	
	NT\$	NT\$	US\$ (Note 4)	NT\$	US\$ (Note 4)
Consideration transferred	\$ 2,317,201	\$ 1,096,373	\$ 33,436	\$ 1,945,678	\$ 59,338
Less: Fair value of identifiable net assets acquired	<u>(2,296,200)</u>	<u>(1,173,088)</u>	<u>(35,776)</u>	<u>(1,945,678)</u>	<u>(59,338)</u>
Goodwill (gain on bargain purchase) recognized on acquisition	<u>\$ 21,001</u>	<u>\$ (76,715)</u>	<u>\$ (2,340)</u>	<u>\$ -</u>	<u>\$ -</u>

The goodwill from acquisitions mainly represents the control premium. In addition, the consideration paid for acquisitions effectively included amounts attributed to the benefits of expected revenue growth and future market expansions. These benefits are not recognized separately from goodwill because they do not meet the recognition criteria for identifiable intangible assets.

The goodwill recognized on acquisitions is not expected to be deductible for income tax purposes.

As of December 31, 2024, the Group has completed the identification of the difference between the cost of the investment and the Group's share of the net fair value of ASEPCAYMAN's and CHE's identifiable assets and liabilities.

e. Net cash outflow on acquisition of subsidiaries

	Hirschmann	ASEPCAYMAN		CHE	
	NT\$	NT\$	US\$ (Note 4)	NT\$	US\$ (Note 4)
Consideration paid in cash	\$ 2,317,201	\$ 725,059	\$ 22,112	\$ 1,713,092	\$ 52,245
Less: Cash and cash equivalent acquired	<u>(118,419)</u>	<u>(404,573)</u>	<u>(12,338)</u>	<u>(1,381,103)</u>	<u>(42,120)</u>
Net cash outflow on acquisition of subsidiaries	<u>\$ 2,198,782</u>	<u>\$ 320,486</u>	<u>\$ 9,774</u>	<u>\$ 331,989</u>	<u>\$ 10,125</u>

f. Impact of acquisitions on the results of the Group

The results of operations since the acquisition date were included in the consolidated statements of comprehensive income and were as follows:

	Hirschmann (For the period from October 27, 2023 through December 31, 2023)	ASEPCAYMAN (For the period from August 1, 2024 through December 31, 2024)		CHE (For the period from August 1, 2024 through December 31, 2024)	
	NT\$	NT\$	US\$ (Note 4)	NT\$	US\$ (Note 4)
Operating revenue	\$ 1,017,423	\$ 518,026	\$ 15,798	\$ 825,216	\$ 25,167
Net profit (loss)	<u>\$ 46,075</u>	<u>\$ (69,186)</u>	<u>\$ (2,110)</u>	<u>\$ 152,594</u>	<u>\$ 4,654</u>

Had the abovementioned business combinations been in effect at the beginning of each annual reporting period, the Group's pro-forma operating revenues and profit would have been NT\$586,489,731 thousand and NT\$37,084,732 thousand for the year ended December 31, 2023, respectively, and NT\$597,015,838 thousand (US\$18,207,253 thousand) and NT\$33,865,233 thousand (US\$1,032,791 thousand) for the year ended December 31, 2024, respectively. This pro-forma information is for illustrative purposes only and is not necessarily an indication of the operating revenue and results of operations of the Group that actually would have been achieved had the acquisition been completed at the beginning of each annual reporting period, nor is it intended to be a projection of future results.

In determining the pro-forma operating revenue and profit for the period had each subsidiary been acquired at the beginning of each respective annual reporting period, the Group has calculated the depreciation of property, plant and equipment and the amortization of intangible assets acquired on the basis of the fair values at the initial accounting for the business combination rather than the carrying amounts recognized in the respective pre-acquisition financial statements.

- g. During the third quarter of 2024, the Group has completed identifying the difference between the cost of the investment and the Group's share of the net fair value of Hirschmann's identifiable assets and liabilities, and has retrospectively adjusted the comparative consolidated financial statements. The adjustments to the consolidate balance sheet as of December 31, 2023 are summarized as follows:

	December 31, 2023	
	Before	After
	Retrospectively Adjusted	Retrospectively Adjusted
	NT\$	NT\$
<hr/> Consolidated balance sheet <hr/>		
Trade receivables, net	\$ 99,529,100	\$ 99,536,761
Other receivables	\$ 15,611,917	\$ 15,902,053
Current tax assets	\$ 905,345	\$ 875,598
Inventories	\$ 59,606,188	\$ 59,658,354
Other current assets	\$ 4,959,034	\$ 4,973,647
Property, plant and equipment	\$ 264,812,022	\$ 264,871,522
Goodwill	\$ 52,404,416	\$ 52,419,427
Other payables	\$ 44,242,885	\$ 44,556,840
Current tax liabilities	\$ 9,667,755	\$ 9,649,556
Deferred tax liabilities	\$ 7,598,008	\$ 7,703,646
Net defined benefit liabilities	\$ 4,122,158	\$ 4,130,104

30. DISPOSAL OF SUBSIDIARIES

In May 2023, the board of directors of ASE and ASET resolved to dispose their shareholdings of the Group's subsidiary, Luchu Development Corporation, consisting of 145,178 thousand ordinary shares and 40,981 thousand ordinary shares, respectively, to HC. The disposal was completed in December 2023 and the control over Luchu Development Corporation was transferred to HC.

- a. Analysis of assets and liabilities on the date control was lost

	NT\$
Current Assets	
Cash and cash equivalent	\$ 261,238
Inventories related to real estate business	1,787,526
	(Continued)

	<u>NT\$</u>
Other current assets	\$ 1,761
Non-Current Assets	
Financial assets at fair value through other comprehensive income – non-current	70,809
Current Liabilities	
Other payables	<u>(222)</u>
Net assets disposed of	<u>\$ 2,121,112</u> (Concluded)

b. Gain on disposal of subsidiaries

	<u>NT\$</u>
Total consideration (paid in cash)	\$ 2,354,938
Net assets disposed of	(2,121,112)
Non-controlling interest	<u>295,895</u>
Gain on disposals	<u>\$ 529,721</u>

c. Net cash inflow on disposals of subsidiaries

	<u>NT\$</u>
Consideration received in cash and cash equivalents	\$ 2,354,938
Less: Cash and cash equivalent balances disposed of	<u>(261,238)</u>
	<u>\$ 2,093,700</u>

31. EQUITY TRANSACTION WITH NON-CONTROLLING INTERESTS

- a. In 2022, USISH repurchased its own 9,356 thousand outstanding ordinary shares at RMB11.15-14.38 per share, and made the Group's shareholdings of USISH increased. The transaction was accounted for as an equity transaction since the transaction did not change the Group's control over USISH and, as a result, the Group's capital surplus was then decreased by NT\$8,963 thousand and retained earnings was then decreased by NT\$211,184 thousand.
- b. USISH repurchased its own 6,740 thousand outstanding ordinary shares during 2024, which made the Group's shareholdings of USISH increased and, as a result, the Company's capital surplus decreased by NT\$186,404 thousand (US\$5,685 thousand). In addition, in September 2024, the Group subscribed for additional newly issued ordinary shares of AMPI at a percentage different from its existing ownership percentage, which made the Group's shareholdings of AMPI increased and then the Group's capital surplus and retained earnings decreased by NT\$63,702 thousand (US\$1,943 thousand) and NT\$5,439 thousand (US\$166 thousand), respectively. The above transactions were accounted for as equity transactions since the Group still retained control over these subsidiaries.

32. CASH FLOW INFORMATION

a. Non-cash investing activities

In addition to other notes, the Group entered into the following investing activities which include both cash and non-cash items for the years ended December 31, 2022, 2023 and 2024:

For the Year Ended December 31				
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Payments for property, plant and equipment				
Purchase of property, plant and equipment	\$ 75,800,574	\$ 48,758,649	\$ 96,207,546	\$ 2,934,052
Increase (decrease) in other non-current assets	(5,480)	(387,233)	1,210,888	36,928
Decrease (increase) in other payables	(3,096,926)	5,894,525	(17,610,885)	(537,081)
Capitalized borrowing costs	<u>(58,263)</u>	<u>(107,712)</u>	<u>(285,611)</u>	<u>(8,710)</u>
	<u>\$ 72,639,905</u>	<u>\$ 54,158,229</u>	<u>\$ 79,521,938</u>	<u>\$ 2,425,189</u>
Proceeds from disposal of property, plant and equipment				
Consideration from disposal of property, plant and equipment	\$ 612,213	\$ 334,348	\$ 887,718	\$ 27,072
Decrease in other receivables	2,784	132,790	821	26
Decrease in other current assets	-	8,188	19,514	595
Decrease in other non-current assets	<u>134,760</u>	<u>-</u>	<u>-</u>	<u>-</u>
	<u>\$ 749,757</u>	<u>\$ 475,326</u>	<u>\$ 908,053</u>	<u>\$ 27,693</u>
Payments for FVTOCI				
Increase in FVTOCI (Note 38)	\$ -	\$ -	\$ 12,150,760	\$ 370,563
Decrease in other receivables	<u>-</u>	<u>-</u>	<u>(12,137,200)</u>	<u>(370,150)</u>
	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 13,560</u>	<u>\$ 413</u>

b. Changes in liabilities arising from financing activities

For the year ended December 31, 2022

	Short-term Borrowings (including financial liabilities for hedging)	Bonds Payable	Long-term Borrowings (including financial liabilities for hedging)	Lease Liabilities	Total
	NT\$	NT\$	NT\$	NT\$	NT\$
Balance at January 1, 2022	\$ 41,036,429	\$ 52,267,337	\$ 126,472,490	\$ 7,399,884	\$ 227,176,140
Net financing cash flows	1,866,253	(3,539,423)	(29,516,421)	(1,035,019)	(32,224,610)
Interest under operating activities	-	-	-	1,394	1,394
Rent expense under operating activities	-	-	-	(1,904)	(1,904)
Convertible bonds classified separately as equity components and embedded derivative liability	-	(1,092,004)	-	-	(1,092,004)
Non-cash changes					
Additions to lease liabilities	-	-	-	1,379,342	1,379,342
Amortization of discount	-	182,759	114,687	-	297,446
Convertible bonds issued by subsidiaries and converted to subsidiaries' ordinary shares	-	(171)	-	-	(171)
Lease modifications	-	-	-	(117,549)	(117,549)
Adjustments for government subsidy	-	-	(46,672)	-	(46,672)
Long-term borrowings transferred to short-term borrowings	1,522,294	-	(1,522,294)	-	-
Effects of foreign currency exchange	<u>2,306,154</u>	<u>31,826</u>	<u>4,487,661</u>	<u>82,339</u>	<u>6,907,980</u>
Balance at December 31, 2022	<u>\$ 46,731,130</u>	<u>\$ 47,850,324</u>	<u>\$ 99,989,451</u>	<u>\$ 7,708,487</u>	<u>\$ 202,279,392</u>

For the year ended December 31, 2023

	Short-term Borrowings (including financial liabilities for hedging)	Short-term Bills Payable	Bonds Payable	Long-term Borrowings	Lease Liabilities	Total
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
Balance at January 1, 2023	\$ 46,731,130	\$ -	\$ 47,850,324	\$ 99,989,451	\$ 7,708,487	\$ 202,279,392
Net financing cash flows	3,231,840	2,787,340	(2,573,366)	(14,263,230)	(1,136,666)	(11,954,082)
Interest under operating activities	-	-	-	-	22	22
Convertible bonds classified separately as equity components and embedded derivative liability	-	-	(412,264)	-	-	(412,264)
Non-cash changes						
Additions to lease liabilities	-	-	-	-	1,644,665	1,644,665
Convertible bonds issued by subsidiaries and converted to subsidiaries' ordinary shares	-	-	(228)	-	-	(228)
Amortization of discount	-	-	319,578	91,538	-	411,116
Lease modifications	-	-	-	-	(113,514)	(113,514)
Adjustments for government subsidy	-	-	-	(1,002)	-	(1,002)
Acquisition through business combinations (Note 29)	-	-	-	-	143,629	143,629
Reclassification	-	-	-	-	(8,226)	(8,226)
Effects of foreign currency exchange	291,218	-	(174,558)	(356,054)	(16,391)	(255,785)
Balance at December 31, 2023	<u>\$ 50,254,188</u>	<u>\$ 2,787,340</u>	<u>\$ 45,009,486</u>	<u>\$ 85,460,703</u>	<u>\$ 8,222,006</u>	<u>\$ 191,733,723</u>

For the year ended December 31, 2024

	Short-term Borrowings (including financial liabilities for hedging)	Short-term Bills Payable	Bonds Payable	Long-term Borrowings	Lease Liabilities	Total
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
Balance at January 1, 2024	\$ 50,254,188	\$ 2,787,340	\$ 45,009,486	\$ 85,460,703	\$ 8,222,006	\$ 191,733,723
Net financing cash flows	(4,514,729)	(2,787,340)	(12,867,386)	36,656,269	(1,547,291)	14,939,523
Interest under operating activities	-	-	-	-	13,538	13,538
Convertible bonds classified separately as equity components and embedded derivative liability	-	-	(100,872)	-	-	(100,872)
Non-cash changes						
Additions to lease liabilities	-	-	-	-	1,342,690	1,342,690
Acquisition through business combinations (Note 29)	-	-	-	-	96,894	96,894
Convertible bonds issued by subsidiaries and converted to subsidiaries' ordinary shares	-	-	(99)	-	-	(99)
Amortization of discount	-	-	366,988	76,326	-	443,314

(Continued)

	Short-term Borrowings (including financial liabilities for hedging)	Short-term Bills Payable	Bonds Payable	Long-term Borrowings	Lease Liabilities	Total
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
Lease modifications	\$ -	\$ -	\$ -	\$ -	\$ (409,679)	\$ (409,679)
Adjustments for government subsidy	-	-	-	(748)	-	(748)
Effects of foreign currency exchange	<u>1,705,403</u>	<u>-</u>	<u>568,047</u>	<u>3,442,548</u>	<u>93,865</u>	<u>5,809,863</u>
Balance at December 31, 2024	<u>\$ 47,444,862</u>	<u>\$ -</u>	<u>\$ 32,976,164</u>	<u>\$ 125,635,098</u>	<u>\$ 7,812,023</u>	<u>\$ 213,868,147</u> (Concluded)

	Short-term Borrowings (including financial liabilities for hedging)	Short-term Bills Payable	Bonds Payable	Long-term Borrowings	Lease Liabilities	Total
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
Balance at January 1, 2024	\$ 1,532,607	\$ 85,006	\$ 1,372,659	\$ 2,606,304	\$ 250,747	\$ 5,847,323
Net financing cash flows	(137,686)	(85,006)	(392,418)	1,117,910	(47,188)	455,612
Interest under operating activities	-	-	-	-	413	413
Convertible bonds classified separately as equity components and embedded derivative liability	-	-	(3,076)	-	-	(3,076)
Non-cash changes						
Additions to lease liabilities	-	-	-	-	40,948	40,948
Acquisition through business combinations (Note 29)	-	-	-	-	2,955	2,955
Convertible bonds issued by subsidiaries and converted to subsidiaries' ordinary shares	-	-	(3)	-	-	(3)
Amortization of discount	-	-	11,192	2,327	-	13,519
Lease modifications	-	-	-	-	(12,494)	(12,494)
Adjustments for government subsidy	-	-	-	(23)	-	(23)
Effects of foreign currency exchange	<u>52,010</u>	<u>-</u>	<u>17,324</u>	<u>104,988</u>	<u>2,863</u>	<u>177,185</u>
Balance at December 31, 2024	<u>\$ 1,446,931</u>	<u>\$ -</u>	<u>\$ 1,005,678</u>	<u>\$ 3,831,506</u>	<u>\$ 238,244</u>	<u>\$ 6,522,359</u>

c. Supplier financing arrangements

The Group has entered into supplier financing arrangements. Under these arrangements, the suppliers may elect to receive early payment from the banks by factoring their receivables from the Group, and the Group then pays the banks at the original due dates set with suppliers. The above arrangements do not modify the terms of these payables because neither the Group's payment terms have been extended nor additional interest has been paid; therefore, the Group still presents the payables as trade payables. As of December 31, 2023 and 2024, trade payables under supplier finance arrangements amounted to NT\$1,284,202 thousand and NT\$1,056,486 thousand (US\$32,220 thousand), respectively.

The carrying amount of the financial liabilities that are subject to supplier finance arrangements, and of which suppliers have already received payment from the finance provider, are as follows:

		December 31, 2024	
		NT\$	US\$ (Note 4)
Trade payables			
Of which suppliers have already received payment from the finance providers		\$ 1,056,486	\$ 32,220

The range of payment due dates for the financial liabilities that are subject to supplier finance arrangements and comparable trade payables that are not part of a supplier finance arrangement are as follows:

		December 31, 2024
Trade payables		
Liabilities that are part of supplier finance arrangements		120-165 Days
Comparable trade payables that are not part of supplier finance arrangements		30-180 Days

The changes in liabilities that are subject to supplier finance arrangements are primarily attributable to additions resulting from purchases of goods and subsequent cash settlements. There were no material non-cash changes in these liabilities.

d. Total taxes paid

		For the Year Ended December 31			
		2022	2023	2024	
		NT\$	NT\$	NT\$	US\$ (Note 4)
Operating activities		\$ 14,250,527	\$ 15,474,646	\$ 9,072,635	\$ 276,689
Investing activities		<u>842,440</u>	<u>-</u>	<u>1,170,149</u>	<u>35,686</u>
		<u>\$ 15,092,967</u>	<u>\$ 15,474,646</u>	<u>\$ 10,242,784</u>	<u>\$ 312,375</u>

33. CAPITAL MANAGEMENT

The capital structure of the Group consists of debt and equity. The Group manages its capital to ensure that entities in the Group will be able to continue as going concerns while maximizing the return to shareholders through the optimization of the debt and equity balance. Key management personnel of the Group periodically reviews the cost of capital and the risks associated with each class of capital. In order to balance the overall capital structure, the Group may adjust the amount of dividends paid to shareholders, the number of new shares issued or repurchased, and the amount of new debt issued or existing debt redeemed.

The Group is not subject to any externally imposed capital requirements except those discussed in Note 20.

34. FINANCIAL INSTRUMENTS

a. Fair value of financial instruments that are not measured at fair value

1) Fair value of financial instruments not measured at fair value but for which fair value is disclosed

Except bonds payable measured at amortized cost, the management considered that the carrying amounts of financial assets and financial liabilities not measured at fair value approximate their fair

values. The carrying amounts and fair value of bonds payable as of December 31, 2023 and 2024 were as follows:

	Carrying Amount		Fair Value	
	NT\$	US\$ (Note 4)	NT\$	US\$ (Note 4)
December 31, 2023	\$ 45,009,486		\$ 44,907,012	
December 31, 2024	32,976,164	\$ 1,005,678	33,636,945	\$ 1,025,829

2) Fair value hierarchy

The aforementioned fair value hierarchy of bonds payable was Level 3 which was determined based on discounted cash flow analysis with the applicable yield curve for the duration. The significant unobservable inputs is discount rates that reflected the credit risk.

b. Fair value of financial instruments that are measured at fair value on a recurring basis

1) Fair value hierarchy

	Level 1	Level 2	Level 3	Total
	NT\$	NT\$	NT\$	NT\$
<u>December 31, 2023</u>				
Financial assets at FVTPL				
Derivative financial assets				
Swap contracts	\$ -	\$ 1,453,868	\$ -	\$ 1,453,868
Forward exchange contracts	-	161,924	-	161,924
Non-derivative financial assets				
Quoted shares	2,099,844	-	-	2,099,844
Private-placement funds	-	-	1,796,015	1,796,015
Unquoted shares	-	-	747,960	747,960
Open-end mutual funds	307,669	-	-	307,669
Hybrid financial assets				
Convertible notes	-	-	61,410	61,410
	<u>\$ 2,407,513</u>	<u>\$ 1,615,792</u>	<u>\$ 2,605,385</u>	<u>\$ 6,628,690</u>
Financial assets at FVTOCI				
Investments in equity instruments				
Unquoted ordinary shares	\$ -	\$ -	\$ 607,528	\$ 607,528
Unquoted preferred shares	-	-	13,303	13,303
Investments in debt instruments				
Unsecured cumulative subordinate corporate bonds	-	-	1,042,906	1,042,906
Trade receivables, net	-	-	5,637,485	5,637,485
	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 7,301,222</u>	<u>\$ 7,301,222</u>

(Continued)

	Level 1	Level 2	Level 3	Total
	NT\$	NT\$	NT\$	NT\$
Financial liabilities at FVTPL				
Derivative financial liabilities				
Swap contracts	\$ -	\$ 1,183,469	\$ -	\$ 1,183,469
Forward exchange contracts	-	118,873	-	118,873
	<u>\$ -</u>	<u>\$ 1,302,342</u>	<u>\$ -</u>	<u>\$ 1,302,342</u>
December 31, 2024				
Financial assets at FVTPL				
Derivative financial assets				
Swap contracts	\$ -	\$ 4,282,512	\$ -	\$ 4,282,512
Forward exchange contracts	-	258,362	-	258,362
Non-derivative financial assets				
Quoted shares	2,898,751	-	-	2,898,751
Private-placement funds	-	-	1,503,382	1,503,382
Unquoted shares	-	-	863,484	863,484
Open-end mutual funds	590,346	-	-	590,346
Hybrid financial assets				
Convertible notes	-	-	360,635	360,635
Preferred shares with warrants	-	-	65,570	65,570
Documentary investment agreement	-	-	9,000	9,000
	<u>\$ 3,489,097</u>	<u>\$ 4,540,874</u>	<u>\$ 2,802,071</u>	<u>\$10,832,042</u>
Financial assets at FVTOCI				
Investments in equity instruments				
Unquoted ordinary shares	\$ -	\$ -	\$12,846,151	\$12,846,151
TIB quoted ordinary shares	72,774	-	-	72,774
Unquoted preferred shares	-	-	14,808	14,808
Investments in debt instruments				
Unsecured cumulative subordinate corporate bonds	-	-	1,025,760	1,025,760
Trade receivables, net	-	-	6,532,508	6,532,508
	<u>\$ 72,774</u>	<u>\$ -</u>	<u>\$20,419,227</u>	<u>\$20,492,001</u>
Financial liabilities at FVTPL				
Derivative financial liabilities				
Swap contracts	\$ -	\$ 179,967	\$ -	\$ 179,967
Forward exchange contracts	-	63,785	-	63,785
Contingent consideration	-	-	589,117	589,117
	<u>\$ -</u>	<u>\$ 243,752</u>	<u>\$ 589,117</u>	<u>\$ 832,869</u>
				(Concluded)

	Level 1	Level 2	Level 3	Total
	US\$	US\$	US\$	US\$
	(Note 4)	(Note 4)	(Note 4)	(Note 4)
<hr/> December 31, 2024 <hr/>				
Financial assets at FVTPL				
Derivative financial assets				
Swap contracts	\$ -	\$ 130,604	\$ -	\$ 130,604
Forward exchange contracts	-	7,879	-	7,879
Non-derivative financial assets				
Quoted shares	88,404	-	-	88,404
Private-placement funds	-	-	45,849	45,849
Unquoted shares	-	-	26,334	26,334
Open-end mutual funds	18,004	-	-	18,004
Hybrid financial assets				
Convertible notes	-	-	10,998	10,998
Preferred shares with warrants	-	-	2,000	2,000
Documentary investment agreement	-	-	274	274
	<u>\$ 106,408</u>	<u>\$ 138,483</u>	<u>\$ 85,455</u>	<u>\$ 330,346</u>
Financial assets at FVTOCI				
Investments in equity instruments				
Unquoted ordinary shares	\$ -	\$ -	\$ 391,770	\$ 391,770
TIB quoted ordinary shares	2,219	-	-	2,219
Unquoted preferred shares	-	-	452	452
Investments in debt instruments				
Unsecured cumulative subordinate corporate bonds	-	-	31,283	31,283
Trade receivables, net	-	-	199,222	199,222
	<u>\$ 2,219</u>	<u>\$ -</u>	<u>\$ 622,727</u>	<u>\$ 624,946</u>
Financial liabilities at FVTPL				
Derivative financial liabilities				
Swap contracts	\$ -	\$ 5,488	\$ -	\$ 5,488
Forward exchange contracts	-	1,945	-	1,945
Contingent considerations	-	-	17,966	17,966
	<u>\$ -</u>	<u>\$ 7,433</u>	<u>\$ 17,966</u>	<u>\$ 25,399</u>

For the financial assets and liabilities that were measured at fair value on a recurring basis, there were no transfers between Level 1 and Level 2 of the fair value hierarchy during the years ended December 31, 2023 and 2024.

2) Reconciliation of Level 3 fair value measurements of financial assets

For the year ended December 31, 2022

Financial Assets	Financial Assets at FVTPL		Financial Assets at FVTOCI		Total
	Equity Instruments	Debt Instruments	Equity Instruments	Debt Instruments	
	NT\$	NT\$	NT\$	NT\$	
Balance at January 1	\$ 2,300,899	\$ -	\$ 841,231	\$ 7,168,920	\$ 10,311,050
Recognized in profit or loss	100,134	605	-	-	100,739
Recognized in other comprehensive income					
Included in unrealized losses on financial assets at FVTOCI	-	-	(366,862)	(16,746)	(383,608)
Effects of foreign currency exchange	195,415	-	5,558	-	200,973
Net increase (decrease) in trade receivables	-	4,330,075	-	(674,112)	3,655,963
Trade receivables factored	-	(4,330,075)	-	(15,636)	(4,345,711)
Purchases	338,016	14,325	20,000	-	372,341
Disposals	(268,200)	(14,930)	(63,051)	-	(346,181)
Balance at December 31	<u>\$ 2,666,264</u>	<u>\$ -</u>	<u>\$ 436,876</u>	<u>\$ 6,462,426</u>	<u>\$ 9,565,566</u>

For the year ended December 31, 2023

Financial Assets	Financial Assets at FVTPL			Financial Assets at FVTOCI		Total
	Equity Instruments	Debt Instruments	Hybrid Instruments	Equity Instruments	Debt Instruments	
	NT\$	NT\$	NT\$	NT\$	NT\$	
Balance at January 1	\$ 2,666,264	\$ -	\$ -	\$ 436,876	\$ 6,462,426	\$ 9,565,566
Recognized in profit or loss	(83,239)	-	(113)	-	-	(83,352)
Recognized in other comprehensive income						
Included in unrealized losses on financial assets at FVTOCI	-	-	-	215,914	(16,807)	199,107
Effects of foreign currency exchange	5,053	-	-	1,605	-	6,658
Net increase in trade receivables	-	5,778,078	-	-	234,772	6,012,850
Trade receivables factored	-	(5,778,078)	-	-	-	(5,778,078)
Purchases	637,767	-	61,523	184,484	-	883,774
Disposal of subsidiaries (Note 30)	-	-	-	(29,572)	-	(29,572)
Disposals	(681,870)	-	-	(188,476)	-	(870,346)
Balance at December 31	<u>\$ 2,543,975</u>	<u>\$ -</u>	<u>\$ 61,410</u>	<u>\$ 620,831</u>	<u>\$ 6,680,391</u>	<u>\$ 9,906,607</u>

For the year ended December 31, 2024

Financial Assets	Financial Assets at FVTPL			Financial Assets at FVTOCI		Total
	Equity Instruments	Debt Instruments	Hybrid Instruments	Equity Instruments	Debt Instruments	
	NT\$	NT\$	NT\$	NT\$	NT\$	
Balance at January 1	\$ 2,543,975	\$ -	\$ 61,410	\$ 620,831	\$ 6,680,391	\$ 9,906,607
Recognized in profit or loss	(352,120)	-	8,300	-	-	(343,820)
Recognized in other comprehensive income						
Included in unrealized losses on financial assets at FVTOCI	-	-	-	(9,397)	(17,146)	(26,543)
Effects of foreign currency exchange	137,556	-	2,270	336,580	-	476,406
Net increase in trade receivables	-	1,167,287	-	-	895,023	2,062,310
Trade receivables factored	-	(1,167,287)	-	-	-	(1,167,287)
Transferred out of Level 3	-	-	-	(53,360)	-	(53,360)
Purchases	177,813	-	363,225	12,150,760	-	12,691,798
Disposals	(140,358)	-	-	(184,455)	-	(324,813)
Balance at December 31	<u>\$ 2,366,866</u>	<u>\$ -</u>	<u>\$ 435,205</u>	<u>\$ 12,860,959</u>	<u>\$ 7,558,268</u>	<u>\$ 23,221,298</u>

Financial Assets	Financial Assets at FVTPL			Financial Assets at FVTOCI		Total US\$ (Note 4)
	Equity Instruments	Debt Instruments	Hybrid Instruments	Equity Instruments	Debt Instruments	
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	
Balance at January 1	\$ 77,584	\$ -	\$ 1,873	\$ 18,933	\$ 203,733	\$ 302,123
Recognized in profit or loss	(10,739)	-	253	-	-	(10,486)
Recognized in other comprehensive income						
Included in unrealized losses on financial assets at FVTOCI	-	-	-	(287)	(523)	(810)
Effects of foreign currency exchange	4,195	-	69	10,265	-	14,529
Net increase in trade receivables	-	35,599	-	-	27,295	62,894
Trade receivables factored	-	(35,599)	-	-	-	(35,599)
Transferred out of Level 3	-	-	-	(1,627)	-	(1,627)
Purchases	5,423	-	11,077	370,563	-	387,063
Disposals	(4,280)	-	-	(5,625)	-	(9,905)
Balance at December 31	<u>\$ 72,183</u>	<u>\$ -</u>	<u>\$ 13,272</u>	<u>\$ 392,222</u>	<u>\$ 230,505</u>	<u>\$ 708,182</u>

3) Valuation techniques and assumptions applied for the purpose of measuring fair value

- a) Valuation techniques and inputs applied for the purpose of measuring Level 2 fair value measurement

Financial Instruments	Valuation Techniques and Inputs
Derivatives - swap contracts and forward exchange contracts	Discounted cash flows - Future cash flows are estimated based on observable forward exchange rates at balance sheet dates and contract forward exchange rates, discounted at rates that reflected the credit risk of various counterparties.

- b) Valuation techniques and inputs applied for the purpose of measuring Level 3 fair value measurement

The fair value of unquoted ordinary shares, unquoted preferred shares, private-placement funds and preferred shares with warrants were determined by using market approach and asset-based approach. The significant unobservable inputs were the discount rates for lack of marketability of 20% to 30%. If the discount rates for lack of marketability to the valuation model increased by 1% to reflect reasonably possible alternative assumptions while all other variables held constant, the fair value of the abovementioned investments would have decreased approximately by NT\$7,200 thousand and NT\$3,800 thousand (US\$116 thousand) as of December 31, 2023 and 2024, respectively.

The fair values of the unsecured cumulative subordinate corporate bonds, convertible notes, documentary investment agreement, unquoted ordinary shares and unquoted preferred shares were determined using income approach based on a discounted cash flow analysis. The significant unobservable input was the discount rate that reflects the credit risk of the counterparties. If the discount rate increased by 0.1% while all other variables held constant, the fair value of the abovementioned investments would have decreased approximately by NT\$2,000 thousand and NT\$154,000 thousand (US\$4,697 thousand) as of December 31, 2023 and 2024, respectively.

The fair value of accounts receivables measured at FVTOCI are determined based on the present value of future cash flows that reflect the credit risk of counterparties. Since the discount effect was not significant, the Group measured its fair value by using the nominal values.

The fair value of the contingent consideration is measured based on the fulfillment possibilities

of the conditions stipulated in the agreement with discount rates reflecting the credit risks.

c. Categories of financial instruments

	December 31		
	2023	2024	
	(Retrospectively Adjusted)		
	NT\$	NT\$	US\$ (Note 4)
Financial assets			
FVTPL			
Mandatorily at FVTPL	\$ 6,628,690	\$ 10,832,042	\$ 330,346
Measured at amortized cost (Note 1)	183,248,314	191,953,553	5,854,028
FVTOCI			
Equity instruments	620,831	12,933,733	394,441
Debt instruments	1,042,906	1,025,760	31,283
Trade receivables	5,637,485	6,532,508	199,222
Financial liabilities			
FVTPL			
Held for trading	1,302,342	243,752	7,433
Contingent considerations	-	589,117	17,966
Financial liabilities for hedging	12,516,971	12,456,104	379,875
Measured at amortized cost (Note 2)	295,416,495	344,543,769	10,507,587

Note 1: The balances included cash and cash equivalents, trade receivables measured at amortized cost, other receivables and other financial assets.

Note 2: The balances included short-term borrowings, short-term bills payable, trade and other payables, bonds payable, long-term borrowings and deposits received (under the line items of other current liabilities and other non-current liabilities).

d. Financial risk management objectives and policies

The derivative instruments used by the Group were to mitigate risks arising from ordinary business operations. All derivative transactions entered into by the Group were designated as either hedging or trading. Derivative transactions entered into for hedging purposes must hedge risk against fluctuations in foreign exchange rates and interest rates arising from operating activities. The currencies and the amount of derivative instruments held by the Group must match its hedged assets and liabilities denominated in foreign currencies.

The Group's risk management department monitored risks to mitigate risk exposures, reported unsettled position, transaction balances and related gains or losses to the Group's chief financial officer on monthly basis.

1) Market risk

The Group's activities exposed it primarily to the financial risks of changes in foreign currency exchange rates and interest rates. Gains or losses arising from fluctuations in foreign currency exchange rates of a variety of derivative financial instruments were approximately offset by those of hedged items. Interest rate risk was not significant due to the cost of capital was expected to be fixed.

There had been no change to the Group's exposure to market risks or the manner in which these risks were managed and measured.

a) Foreign currency exchange rate risk

The Group had sales and purchases as well as investing and financing activities denominated in foreign currency which exposed the Group to foreign currency exchange rate risk. The Group entered into a variety of derivative financial instruments to hedge foreign currency exchange rate risk to minimize the fluctuations of assets and liabilities denominated in foreign currencies.

The carrying amounts of the Group's foreign currency denominated monetary assets and liabilities (including those eliminated upon consolidation) as well as derivative instruments which exposed the Group to foreign currency exchange rate risk at each balance sheet date are presented in Note 40.

The Group was mainly subject to the impact from the exchange rate fluctuation in US\$ and JPY against NT\$, RMB or EUR. 1% fluctuation is used when reporting foreign currency exchange rate risk internally to key management personnel and represents management's assessment of the reasonably possible change in foreign currency exchange rates. The sensitivity analysis included financial assets and liabilities and inter-company receivables and payables within the Group. The changes in profit before income tax due to a 1% change in US\$ and JPY against NT\$, RMB and EUR would be NT\$60,000 thousand, NT\$148,000 thousand and NT\$274,000 thousand (US\$8,356 thousand) for the years ended December 31, 2022, 2023 and 2024, respectively. Hedging contracts and hedged items have been taken into account while measuring the changes in profit before income tax. The abovementioned sensitivity analysis mainly focused on the foreign currency monetary items at each balance sheet date. As the year-end exposure did not reflect the exposure for the years ended December 31, 2022, 2023 and 2024, the abovementioned sensitivity analysis was unrepresentative of those respective years.

Hedge accounting

The Group's hedging strategy was to lift borrowings denominated in foreign currencies to avoid exchange rate exposure from its investments in equity instruments denominated in foreign currencies (recognized under the line item of financial assets at FVTPL) and net investment in foreign subsidiary, Universal Scientific Industrial (France), which has EUR as its functional currency. Those transactions were designated as fair value hedges and a hedge of net investment in foreign operation, respectively. Hedge adjustments were made to totally offset the foreign exchange gains or losses from those equity instruments denominated in foreign currencies and foreign operations when they were evaluated based on the exchange rates on each balance sheet date.

The source of hedge ineffectiveness in these hedging relationships arose from the material difference between the notional amounts of borrowings denominated in foreign currencies and the fair value of investments in equity instruments denominated in foreign currencies and net investment in foreign operations. No other sources of ineffectiveness is expected to emerge from these hedging relationships.

December 31, 2023

Hedging Instrument/ Hedged Items	Line item in Balance sheet	Carrying Amount	
		Asset NT\$	Liability NT\$
Fair value hedge			
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	Financial liabilities for hedging - current	\$ -	\$ 3,271,312
Hedge of net investment in foreign operation	Financial liabilities for hedging - current	-	9,245,659

Hedging Instrument/ Hedged Item	Change in Value Used for Calculating Hedge Ineffectiveness		Accumulated Gains or Losses in Other Equity		Carrying Amount of Hedged Item in Fair Value Hedge	Accumulated Amount of Fair Value Hedge Adjustments on Hedged Item
	Hedging Instrument NT\$	Hedged Item NT\$	Continuing Hedges NT\$	Hedge Accounting No Longer Applied NT\$	Asset NT\$	Asset NT\$
Fair value hedge						
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	\$ 7,493	\$ (7,493)	\$ -	\$ -	\$ 2,011,050	\$ 80,029
Hedge of net investment in foreign operation	312,029	(312,029)	360,976	-	-	-

December 31, 2024

Hedging Instrument/ Hedged Items	Line item in Balance sheet	Carrying Amount			
		Asset		Liability	
		NT\$	US\$ (Note 4)	NT\$	US\$ (Note 4)
Fair value hedge					
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	Financial liabilities for hedging - current	\$ -	\$ -	\$ 3,515,265	\$ 107,205
Hedge of net investment in foreign operation	Financial liabilities for hedging - current	-	-	8,940,839	272,670

Hedging Instrument/ Hedged Item	Change in Value Used for Calculating Hedge Ineffectiveness		Accumulated Gains or Losses in Other Equity		Carrying Amount of Hedged Item in Fair Value Hedge	Accumulated Amount of Fair Value Hedge Adjustments on Hedged Item
	Hedging Instrument NT\$	Hedged Item NT\$	Continuing Hedges NT\$	Hedge Accounting No Longer Applied NT\$	Asset NT\$	Asset NT\$
Fair value hedge						
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	\$ (243,954)	\$ 243,954	\$ -	\$ -	\$ 2,834,608	\$ 323,983
Hedge of net investment in foreign operation	(562,598)	562,598	923,574	-	-	-

Hedging Instrument/ Hedged Item	Change in Value Used for Calculating Hedge Ineffectiveness		Accumulated Gains or Losses in Other Equity		Carrying Amount of Hedged Item in Fair Value Hedge	Accumulated Amount of Fair Value Hedge Adjustments on Hedged Item
	Hedging Instrument US\$ (Note 4)	Hedged Item US\$ (Note 4)	Continuing Hedges US\$ (Note 4)	Hedge Accounting No Longer Applied US\$ (Note 4)	Asset US\$ (Note 4)	Asset US\$ (Note 4)
Fair value hedge						
Borrowings denominated in foreign currencies/ Financial assets at FVTPL	\$ (7,440)	\$ 7,440	\$ -	\$ -	\$ 86,447	\$ 9,881
Hedge of net investment in foreign operation	(17,158)	17,158	28,166	-	-	-

b) Interest rate risk

Except a portion of long-term borrowings and bonds payable at fixed interest rates, the Group was exposed to interest rate risk because group entities borrowed funds at floating interest rates. Changes in market interest rates led to variances in effective interest rates of borrowings from which the future cash flow fluctuations arise. The Group utilized financing instruments with low interest rates and favorable terms to maintain low financing cost, adequate banking facilities, as well as to hedge interest rate risk.

The carrying amounts of the Group's financial assets and financial liabilities with exposure to interest rates at each balance sheet date were as follows:

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Fair value interest rate risk			
Financial assets	\$ 17,007,765	\$ 36,812,408	\$ 1,122,672
Financial liabilities	84,315,866	72,579,608	2,213,468
Cash flow interest rate risk			
Financial assets	51,158,406	46,378,904	1,414,422
Financial liabilities	117,160,631	151,248,418	4,612,639

For assets and liabilities with floating interest rates, a 100 basis point increase or decrease was used when reporting interest rate risk internally to key management personnel. If interest rates had been 100 basis points (1%) higher or lower and all other variables held constant, the Group's profit before income tax for the years ended December 31, 2022, 2023 and 2024 would have decreased or increased approximately by NT\$794,000 thousand, NT\$660,000 thousand and NT\$1,049,000 thousand (US\$31,991 thousand), respectively.

c) Other price risk

The Group was exposed to equity price risk through its investments in financial assets at FVTPL and financial assets at FVTOCI. If equity price was 1% higher or lower, profit before income tax for the years ended December 31, 2022, 2023 and 2024 would have increased or decreased approximately by NT\$50,000 thousand, NT\$46,500 thousand and NT\$53,000 thousand (US\$1,616 thousand), respectively, and other comprehensive income before income tax for the years ended December 31, 2022, 2023 and 2024 would have increased or decreased approximately by NT\$5,000 thousand, NT\$6,000 thousand and NT\$129,000 thousand (US\$3,934 thousand), respectively.

2) Credit risk

Credit risk refers to the risk that counterparty will default on its contractual obligations resulting in financial loss to the Group. The Group's credit risk arises from cash and cash equivalents, contract assets, trade and other receivables and other financial assets. The Group's maximum exposure to credit risk was the carrying amounts of financial assets in the consolidated balance sheets.

As of December 31, 2023 and 2024, the Group's ten largest customers accounted for 39% and 47% of trade receivables, respectively. The Group transacts with a large number of unrelated customers and, thus, no concentration of credit risk was observed.

3) Liquidity risk

The Group manages liquidity risk by maintaining adequate working capital and banking facilities to fulfill the demand for cash flow used in the Group's operation and capital expenditure. The Group also monitors its compliance with all the loan covenants. Liquidity risk is not considered to be significant.

In the table below, financial liabilities with a repayment on demand clause were included in the earliest time band regardless of the probability of counter-parties choosing to exercise their rights. The maturity dates for other non-derivative financial liabilities were based on the agreed repayment dates.

To the extent that interest flows are floating rate, the undiscounted amounts were derived from the interest rates at each balance sheet date.

December 31, 2023 (Retrospectively Adjusted)

	On Demand or Less than 1 Month	1 to 3 Months	3 Months to 1 Year	1 to 5 Years	More than 5 Years
	NT\$	NT\$	NT\$	NT\$	NT\$
<u>Non-derivative financial liabilities</u>					
Non-interest bearing	\$ 52,472,703	\$ 33,530,541	\$ 13,672,318	\$ 4,478,467	\$ 83,594
Obligation under leases	123,436	219,960	884,309	2,867,502	5,505,095
Floating interest rate liabilities	19,534,908	9,967,914	9,505,587	78,388,027	8,785,084
Fixed interest rate liabilities	12,370,288	22,921,637	11,235,729	21,095,740	-
	<u>\$ 84,501,335</u>	<u>\$ 66,640,052</u>	<u>\$ 35,297,943</u>	<u>\$106,829,736</u>	<u>\$ 14,373,773</u>

Further information for maturity analysis of obligation under leases was as follows:

	Less than 1 Year	1 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	More than 20 Years
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
Obligation under leases	<u>\$ 1,227,705</u>	<u>\$ 2,867,502</u>	<u>\$ 2,157,503</u>	<u>\$ 891,614</u>	<u>\$ 864,881</u>	<u>\$ 1,591,097</u>

December 31, 2024

	On Demand or Less than 1 Month	1 to 3 Months	3 Months to 1 Year	1 to 5 Years	More than 5 Years
	NT\$	NT\$	NT\$	NT\$	NT\$
<u>Non-derivative financial liabilities</u>					
Non-interest bearing	\$ 66,577,698	\$ 39,954,390	\$ 18,126,780	\$ 4,707,506	\$ 1,177,870
Obligation under leases	167,887	185,848	801,002	2,676,514	5,572,038
Floating interest rate liabilities	9,865,888	15,650,230	13,152,601	115,539,867	7,894,775
Fixed interest rate liabilities	5,163,326	11,011,781	16,702,747	23,210,093	-
	<u>\$ 81,774,799</u>	<u>\$ 66,802,249</u>	<u>\$ 48,783,130</u>	<u>\$146,133,980</u>	<u>\$ 14,644,683</u>
	On Demand or Less than 1 Month	1 to 3 Months	3 Months to 1 Year	1 to 5 Years	More than 5 Years
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
<u>Non-derivative financial liabilities</u>					
Non-interest bearing	\$ 2,030,427	\$ 1,218,493	\$ 552,814	\$ 143,565	\$ 35,922
Obligation under leases	5,120	5,668	24,428	81,626	169,931
Floating interest rate liabilities	300,881	477,287	401,116	3,523,631	240,768
Fixed interest rate liabilities	157,466	335,827	509,386	707,841	-
	<u>\$ 2,493,894</u>	<u>\$ 2,037,275</u>	<u>\$ 1,487,744</u>	<u>\$ 4,456,663</u>	<u>\$ 446,621</u>

Further information for maturity analysis of obligation under leases was as follows:

	Less than 1 Year	1 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	More than 20 Years
	NT\$	NT\$	NT\$	NT\$	NT\$	NT\$
Obligation under leases	\$ <u>1,154,737</u>	\$ <u>2,676,514</u>	\$ <u>1,964,781</u>	\$ <u>951,983</u>	\$ <u>917,034</u>	\$ <u>1,738,240</u>
	Less than 1 Year	1 to 5 Years	5 to 10 Years	10 to 15 Years	15 to 20 Years	More than 20 Years
	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)	US\$ (Note 4)
Obligation under leases	\$ <u>35,216</u>	\$ <u>81,626</u>	\$ <u>59,920</u>	\$ <u>29,033</u>	\$ <u>27,967</u>	\$ <u>53,011</u>

The amounts for floating interest rate instruments included above for non-derivative financial liabilities were subject to change if changes in floating interest rates differ from those estimates of interest rates determined at each balance sheet date.

The following table detailed the Group's liquidity analysis for its derivative financial instruments. The table was based on the undiscounted contractual net cash inflows and outflows on derivative instruments settled on a net basis, and the undiscounted gross cash inflows and outflows on those derivatives that require gross settlement. When the amounts payable or receivable are not fixed, the amounts disclosed have been determined by reference to the projected interest rates as illustrated by the yield curves at each balance sheet date.

	On Demand or Less than 1 Month	1 to 3 Months	3 Months to 1 Year
	NT\$	NT\$	NT\$
<hr/> December 31, 2023 <hr/>			
Net settled			
Forward exchange contracts	\$ <u>(44,550)</u>	\$ <u>5,585</u>	\$ <u>-</u>
Gross settled			
Forward exchange contracts			
Inflows	\$ <u>13,971,393</u>	\$ <u>347,468</u>	\$ <u>143,726</u>
Outflows	<u>(13,854,585)</u>	<u>(338,670)</u>	<u>(133,330)</u>
	<u>116,808</u>	<u>8,798</u>	<u>10,396</u>
Swap contracts			
Inflows	<u>22,388,255</u>	<u>19,166,073</u>	<u>66,015,750</u>
Outflows	<u>(22,021,077)</u>	<u>(18,547,076)</u>	<u>(64,821,453)</u>
	<u>367,178</u>	<u>618,997</u>	<u>1,194,297</u>
	\$ <u>483,986</u>	\$ <u>627,795</u>	\$ <u>1,204,693</u>
<hr/> December 31, 2024 <hr/>			
Net settled			
Forward exchange contracts	\$ <u>10,872</u>	\$ <u>11,550</u>	\$ <u>-</u>
Gross settled			
Forward exchange contracts			
Inflows	\$ <u>10,395,219</u>	\$ <u>3,866,536</u>	\$ <u>332,003</u>
Outflows	<u>(10,278,376)</u>	<u>(3,831,303)</u>	<u>(319,540)</u>
	<u>116,843</u>	<u>35,233</u>	<u>12,463</u>
Swap contracts			
Inflows	<u>13,901,338</u>	<u>31,704,116</u>	<u>84,978,720</u>
Outflows	<u>(13,702,851)</u>	<u>(30,131,740)</u>	<u>(80,905,026)</u>
	<u>198,487</u>	<u>1,572,376</u>	<u>4,073,694</u>
	\$ <u>315,330</u>	\$ <u>1,607,609</u>	\$ <u>4,086,157</u>

	On Demand or Less than 1 Month US\$ (Note 4)	1 to 3 Months US\$ (Note 4)	3 Months to 1 Year US\$ (Note 4)
<hr/> December 31, 2024 <hr/>			
Net settled			
Forward exchange contracts	\$ 332	\$ 352	\$ -
Gross settled			
Forward exchange contracts			
Inflows	\$ 317,024	\$ 117,918	\$ 10,125
Outflows	(313,461)	(116,844)	(9,745)
	<u>3,563</u>	<u>1,074</u>	<u>380</u>
Swap contracts			
Inflows	423,951	966,884	2,591,605
Outflows	(417,897)	(918,931)	(2,467,369)
	<u>6,054</u>	<u>47,953</u>	<u>124,236</u>
	<u>\$ 9,617</u>	<u>\$ 49,027</u>	<u>\$ 124,616</u>

35. RELATED PARTY TRANSACTIONS

Balances and transactions within the Group had been eliminated upon consolidation. In addition to the aforementioned notes, details of transactions between the Group and other related parties were disclosed as follows:

a. Related parties

Related Parties	Relationship with the Group
ASE Environmental Protection and Sustainability Foundation	Substantial related party
ASE Cultural and Educational Foundation	Substantial related party

b. Loans to related parties

Interest revenue

Relationship and Name of Related Party	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
HC	\$ -	\$ -	\$ 29,960	\$ 914

c. Contribution to related party

Relationship and Name of Related Party	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Substantial related party				
ASE Environmental Protection and Sustainability Foundation	\$ 100,000	\$ 100,000	\$ 100,000	\$ 3,050
ASE Cultural and Educational Foundation	<u>20,000</u>	<u>25,000</u>	<u>12,500</u>	<u>381</u>
	<u>\$ 120,000</u>	<u>\$ 125,000</u>	<u>\$ 112,500</u>	<u>\$ 3,431</u>

- d. ASE entered into a joint development agreement with HC in accordance with the spirit of joint construction principle in June 2020. The agreement stipulated that HC will build plant on the leased land on which that ASE and its affiliates would have the priority purchase right. In August 2024, the board of directors of ASE resolved to purchase such completed plant from HC with NT\$5,263,000 thousand (US\$160,506 thousand). The transaction price was determined based on the appraisal report issued by independent professional firms. The transaction has been approved by HC's special shareholders' meeting in September 2024 and fully paid. In addition, if HC does not carry out the construction agreed with the Bureau of Industrial Parks, Ministry of Economic Affairs, based on the Group's instruction, the Group will undertake a portion of HC's unrecoverable guaranteed deposit.
- e. ASE entered into a joint construction and allocation of housing units agreement with HC in August 2021. The agreement stipulated that ASE and HC should provide a part of land located in Kaohsiung and funds, respectively, for the joint construction of plant and consulted with professional appraisal firms to evaluate the allocation ratio of the value under joint construction. After the completion of the plant construction, ASE and its subsidiaries would have the priority to purchase the property obtained by HC based on the agreed proportion of joint construction. In August 2023, the board of directors resolved to purchase 74.46% building ownership and the corresponding land holdings by NT\$1,666,600 thousand based on the agreed proportion of joint construction.
- f. ASE entered into a joint construction and allocation of housing units agreement with HC in April 2022. The agreement stipulated that ASE and HC provided a part of land located in Chung-Li and funds, respectively, for joint construction of plant and consulted with professional appraisal firm to evaluate the allocation ratio of the value under joint construction. After the completion of the plant construction, ASE would have the priority to purchase the property which obtained by HC based on the agreed proportion of joint construction.
- g. ASE entered into a joint construction and allocation of housing units agreement with HC in June 2024. The agreement stipulated that ASE and HC will provide a part of land located in Kaohsiung and funds, respectively, for joint construction of plant and consulted with professional appraisal firms to evaluate the allocation ratio of the value under joint construction. After the completion of the plant construction, ASE and its subsidiaries would have the priority to purchase the property obtained by HC based on the agreed proportion of joint construction.

h. Compensation to key management personnel

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Short-term employee benefits	\$ 1,962,298	\$ 1,390,127	\$ 1,350,476	\$ 41,186
Post-employment benefits	4,344	3,841	3,288	100
Share-based payments	<u>445,287</u>	<u>21,033</u>	<u>229,697</u>	<u>7,005</u>
	<u>\$ 2,411,929</u>	<u>\$ 1,415,001</u>	<u>\$ 1,583,461</u>	<u>\$ 48,291</u>

The compensation to the Group's key management personnel was determined according to personal performance and market trends.

36. ASSETS PLEDGED AS COLLATERAL OR FOR SECURITY

The following assets were provided as collateral for bank borrowings, tariff guarantees of imported raw materials or collateral:

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Inventories related to real estate business	\$ 2,583,372	\$ 2,717,813	\$ 82,885
Trade receivables	-	391,030	11,925
Property, plant and equipment	67,958	913	28
Investment properties	18,915,931	18,932,469	577,385
Other financial assets (including current and non-current)	<u>470,420</u>	<u>514,087</u>	<u>15,679</u>
	<u>\$ 22,037,681</u>	<u>\$ 22,556,312</u>	<u>\$ 687,902</u>

37. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

In addition to those disclosed in other notes, significant commitments and contingencies of the Group as of each balance sheet date were as follows:

- As of December 31, 2023 and 2024, unused letters of credit of the Group were approximately NT\$134,000 thousand and NT\$3,139,000 thousand (US\$95,730 thousand), respectively.
- As of December 31, 2023 and 2024, letters of bank guarantee provided to customs for the import and export of goods with bank facilities granted to the Group were approximately NT\$645,255 thousand and NT\$708,130 thousand (US\$21,596 thousand), respectively.
- As of December 31, 2023 and 2024, the Group's outstanding commitments to purchase property, plant and equipment were approximately NT\$56,943,589 thousand and NT\$118,263,200 thousand (US\$3,606,685 thousand), respectively, of which NT\$9,016,441 thousand and NT\$5,890,890 thousand (US\$179,655 thousand) had been prepaid, respectively.
- The Group entered into long-term purchase agreements of materials and supplies with multiple suppliers. The relative minimum purchase quantity is specified in the agreements.

- e. The Group entered into long-term agreements with multiple customers. The relative minimum order quantity from customers and minimum purchase quantity of materials from suppliers are specified in the agreements.
- f. In consideration of corporate social responsibility, the board of directors of ASE resolved the contributions of NT\$10,000 thousand (US\$305 thousand) in December 2024, to ASE Cultural and Educational Foundation for promoting the cultural and educational activities.
- g. In December 2013, in consideration of corporate social responsibility for environmental protection, the board of directors of ASE, approved the contributions of at least NT\$100,000 thousand annually to be made in the next 30 years, with a total amount of at least NT\$3,000,000 thousand, for promoting environmental protection efforts in Taiwan. In December 2024, the board of directors of ASE resolved the contributions of NT\$100,000 thousand (US\$3,050 thousand) to ASE Environmental Protection and Sustainability Foundation.

38. SIGNIFICANT EVENTS AFTER REPORTING PERIOD

In March 2025, the board of directors of ASE resolved to acquire 100% shareholdings of Sumipex TechSheet Co., Ltd. for facility expansion.

39. OTHERS

- a. On December 20, 2013, the Kaohsiung Environmental Protection Bureau (the “KEPB”) imposed an administrative fine of NT\$102,014 thousand (the “Original Fine”) upon ASE for violation of the Water Pollution Control Act. After ASE sought administrative remedies against the Original Fine, the Original Fine has been revoked by final judgment of Supreme Administrative Court on June 8, 2017, and KEPB is ordered to refund the Original Fine to ASE. On December 27, 2019, KEPB has refunded NT\$55,062 thousand to ASE. On February 10, 2020, KEPB re-imposed an administrative fine of NT\$46,952 thousand (the “New Fine”) upon ASE and offset the New Fine by the remaining amount which shall be refunded to ASE. Therefore, no additional payment that ASE should make for the New Fine. After ASE filed an administrative appeal against the New Fine, the Administrative Appeal Review Committee of Kaohsiung City Government has revoked the New Fine on December 15, 2020 and remanded to KEPB for another legitimate administrative action. On July 10, 2024, KEPB and ASE signed the administrative contract that ASE would pay an administrative fine of NT\$260 thousand (US\$8 thousand) and fulfill ASE’s corporate social responsibilities by contributing a special fund of NT\$50,000 thousand (US\$1,525 thousand) to KEPB for the technology research and development of water pollution prevention. KEPB and ASE reached a settlement on this case. In addition, the KEPB has refunded the aforementioned administrative fine of NT\$46,952 thousand (US\$1,432 thousand) to ASE.
- b. The board of directors of Global Advanced Packaging Technology Limited resolved to settle the acquisition of 16.48% shareholding of Hong Kong United Ascend Holdings Limited by using the remaining proceeds of US\$380,000 thousand from the disposal of subsidiaries in 2021. The investment has been completed in September 2024 and was included in the line item of financial assets at FVTOCI - non-current as of December 31, 2024.

40. SIGNIFICANT ASSETS AND LIABILITIES DENOMINATED IN FOREIGN CURRENCIES

The following information was aggregated by the foreign currencies other than functional currencies of the group entities and the exchange rates between foreign currencies and respective functional currencies were disclosed. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousand)	Exchange Rate	Carrying Amount (In Thousand)
December 31, 2023			
Monetary financial assets			
US\$	\$ 5,446,388	US\$1=NT\$30.705	\$ 167,231,335
US\$	1,280,256	US\$1=RMB7.0827	39,310,262
US\$	69,208	US\$1=EUR0.9050	2,125,037
JPY	4,926,139	JPY1=NT\$0.2172	1,069,957
JPY	181,939	JPY1=US\$0.0071	39,517
Monetary financial liabilities			
US\$	5,226,872	US\$1=NT\$30.705	160,491,098
US\$	1,029,004	US\$1=RMB7.0827	31,595,564
US\$	37,370	US\$1=EUR0.9050	1,147,458
JPY	6,882,104	JPY1=NT\$0.2172	1,494,793
JPY	965,608	JPY1=US\$0.0071	209,730
December 31, 2024			
Monetary financial assets			
US\$	6,048,894	US\$1=NT\$32.785	198,312,976
US\$	1,628,924	US\$1=RMB7.1884	53,404,267
US\$	65,252	US\$1=EUR0.9626	2,139,276
JPY	8,604,226	JPY1=NT\$0.2099	1,806,027
JPY	236,858	JPY1=US\$0.0064	49,716
Monetary financial liabilities			
US\$	5,920,586	US\$1=NT\$32.785	194,106,411
US\$	935,436	US\$1=RMB7.1884	30,668,260
US\$	35,135	US\$1=EUR0.9626	1,151,894
JPY	9,430,081	JPY1=NT\$0.2099	1,979,374
JPY	1,598,522	JPY1=US\$0.0064	335,530

The significant realized and unrealized foreign exchange gain (loss) were as follows:

For the Year Ended December 31							
Functional Currencies	Exchange Rate	2022	Exchange Rate	2023	Exchange Rate	2024	
		Net Foreign Exchange Gain (Loss) NT\$		Net Foreign Exchange Gain (Loss) NT\$		Net Foreign Exchange Gain (Loss) NT\$	
							US\$ (Note 4)
US\$	US\$1=NT\$30.71	\$ (347,044)	US\$1=NT\$30.705	\$ 162,827	US\$1=NT\$32.785	\$ (937,503)	\$ (28,591)
NT\$		(2,985,318)		822,098		(4,826,783)	(147,203)
RMB	RMB1=NT\$4.4094	921,898	RMB1=NT\$4.3352	(4,612)	RMB1=NT\$4.5608	122,494	3,736
		<u>\$ (2,410,464)</u>		<u>\$ 980,313</u>		<u>\$ (5,641,792)</u>	<u>\$ (172,058)</u>

41. OPERATING SEGMENTS INFORMATION

The Group has the following reportable segments: Packaging, Testing and EMS. The Group packages bare semiconductors into finished semiconductors with enhanced electrical and thermal characteristics; provides testing services, including front-end engineering testing, wafer probing and final testing services; engages in the designing, assembling, manufacturing and sale of electronic components and telecommunications equipment motherboards. Information about other business activities and operating segments that are not reportable are combined and disclosed in "Others." The Group engages in other activities such as substrate production as well as sale and leasing of real estate properties.

The accounting policies for segments are the same as those described in Note 4. The measurement basis for resources allocation and performance evaluation is based on profit before income tax.

a. Segment revenues and operation results

	Packaging NTS	Testing NTS	EMS NTS	Others NTS	Adjustments and Eliminations NTS	Total NTS
For the year ended December 31, 2022						
Revenue from external customers	\$ 303,947,502	\$ 55,960,182	\$ 301,966,818	\$ 8,998,141	\$ -	\$ 670,872,643
Inter-group revenues (Note 1)	6,940,878	524,387	35,533,226	9,080,132	(52,078,623)	-
Segment revenues	310,888,380	56,484,569	337,500,044	18,078,273	-	722,951,266
Interest income	109,148	84,562	418,507	42,530	-	654,747
Interest expense	(2,150,382)	(463,043)	(1,029,128)	(346,581)	-	(3,989,134)
Depreciation and amortization	(33,509,358)	(14,901,939)	(4,654,383)	(2,386,209)	-	(55,451,889)
Share of the profit or loss of associates and joint ventures	779,474	81,627	324,276	-	-	1,185,377
Impairment loss	(64,257)	(105,169)	(219,349)	-	-	(388,775)
Segment profit before income tax	51,824,439	14,626,156	14,368,179	944,854	-	81,763,628
Expenditures for segment assets	45,936,563	21,765,965	6,188,401	1,909,645	-	75,800,574
December 31, 2022						
Investments accounted for using the equity method	10,341,203	1,643,940	2,694,203	-	-	14,679,346
Contract assets	4,869,541	861,632	-	-	-	5,731,173
For the year ended December 31, 2023						
Revenue from external customers	256,805,887	49,879,923	268,218,002	7,010,659	-	581,914,471
Inter-group revenues (Note 1)	4,550,622	447,279	26,639,833	6,776,002	(38,413,736)	-
Segment revenues	261,356,509	50,327,202	294,857,835	13,786,661	-	620,328,207
Interest income	188,704	124,443	1,087,121	113,139	-	1,513,407
Interest expense	(2,907,679)	(720,145)	(1,816,814)	(794,272)	-	(6,238,910)
Depreciation and amortization	(34,110,372)	(16,173,653)	(5,335,496)	(2,482,342)	-	(58,101,863)
Share of the profit or loss of associates and joint ventures	916,310	134,667	38,211	(8,588)	-	1,080,600
Impairment loss	(81,133)	(65,437)	-	-	-	(146,570)
Segment profit before income tax	25,405,636	9,369,875	9,216,053	(1,379,741)	-	42,611,823
Expenditures for segment assets	27,881,152	13,664,416	6,207,532	1,005,549	-	48,758,649
December 31, 2023						
Investments accounted for using the equity method	15,159,266	2,338,125	2,160,112	20,811	-	19,678,314
Contract assets	4,066,174	1,033,902	-	-	-	5,100,076
For the year ended December 31, 2024						
Revenue from external customers	261,731,413	54,561,480	271,293,309	7,823,383	-	595,409,585
Inter-group revenues (Note 1)	5,829,221	420,691	35,110,458	6,536,547	(47,896,917)	-
Segment revenues	267,560,634	54,982,171	306,403,767	14,359,930	-	643,306,502
Interest income	223,222	182,106	1,409,437	68,753	-	1,883,518
Interest expense	(2,701,084)	(766,292)	(2,062,626)	(1,217,841)	-	(6,747,843)
Depreciation and amortization	(33,951,864)	(17,457,538)	(5,895,380)	(2,510,430)	-	(59,815,212)
Share of the profit or loss of associates and joint ventures	698,852	53,574	152,996	(8,720)	-	896,702
Impairment loss	(121,992)	(2,845)	(51,186)	-	-	(176,023)
Segment profit before income tax	28,948,970	10,616,147	7,594,473	(5,426,217)	-	41,733,373
Expenditures for segment assets	58,566,380	31,397,079	5,551,760	692,327	-	96,207,546
December 31, 2024						
Investments accounted for using the equity method	15,422,237	2,618,682	2,355,629	26,792	-	20,423,340
Contract assets	4,337,297	1,303,020	-	-	-	5,640,317
	Packaging US\$ (Note 4)	Testing US\$ (Note 4)	EMS US\$ (Note 4)	Others US\$ (Note 4)	Adjustments and Eliminations US\$ (Note 4)	Total US\$ (Note 4)
For the year ended December 31, 2024						
Revenue from external customers	\$ 7,982,050	\$ 1,663,967	\$ 8,273,660	\$ 238,590	\$ -	\$ 18,158,267
Inter-group revenues (Note 1)	177,774	12,830	1,070,767	199,346	(1,460,717)	-
Segment revenues	8,159,824	1,676,796	9,344,427	437,937	-	19,618,984
Interest income	6,808	5,554	42,984	2,096	-	57,442
Interest expense	(82,375)	(23,370)	(62,904)	(37,141)	-	(205,790)
Depreciation and amortization	(1,035,433)	(532,404)	(179,792)	(76,561)	-	(1,824,190)
Share of the profit or loss of associates and joint ventures	21,313	1,634	4,666	(266)	-	27,347
Impairment loss	(3,720)	(87)	(1,561)	-	-	(5,368)
Segment profit before income tax	882,859	323,762	231,609	(165,483)	-	1,272,747
Expenditures for segment assets	1,786,105	957,520	169,313	21,114	-	2,934,052
December 31, 2024						
Investments accounted for using the equity method	470,334	79,863	71,840	816	-	622,853
Contract assets	132,275	39,738	-	-	-	172,013

Note 1: Inter-group revenues were eliminated upon consolidation.

Note 2: The disaggregated product and service type from the Group's contract with customer is the same as those disclosed in above reportable segment.

b. Revenue from major products and services

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
Packaging service	\$ 303,947,502	\$ 256,805,887	\$ 261,731,413	\$ 7,982,050
Testing service	55,960,182	49,879,923	54,561,480	1,663,967
EMS	301,966,818	268,218,002	271,293,309	8,273,660
Others	<u>8,998,141</u>	<u>7,010,659</u>	<u>7,823,383</u>	<u>238,590</u>
	<u>\$ 670,872,643</u>	<u>\$ 581,914,471</u>	<u>\$ 595,409,585</u>	<u>\$ 18,158,267</u>

c. Major customers

Except for NT\$198,858,465 thousand, NT\$170,970,446 thousand and NT\$174,486,187 thousand (US\$5,321,323 thousand) of the operating revenues for each of the three years ended December 31, 2022, 2023, and 2024, respectively, which came from a certain customer (including other customers for whom OEM services were provided on its behalf) of the packaging and EMS segments, there was no other operating revenues from a single customer that accounts for more than 10% of the total operating revenues of the Group for the years ended December 31, 2022, 2023 and 2024.

d. Geographical information

The Group's revenue from external customers by location of headquarter and information about its non-current assets by location of assets are detailed below.

1) Net revenues from external customers

	For the Year Ended December 31			
	2022	2023	2024	
	NT\$	NT\$	NT\$	US\$ (Note 4)
United States	\$ 446,484,639	\$ 370,306,818	\$ 358,708,176	\$ 10,939,560
Taiwan	83,655,142	70,492,517	89,274,839	2,722,624
Asia	75,991,902	75,316,422	82,989,985	2,530,954
Europe	63,542,468	65,026,966	63,429,243	1,934,408
Others	<u>1,198,492</u>	<u>771,748</u>	<u>1,007,342</u>	<u>30,721</u>
	<u>\$ 670,872,643</u>	<u>\$ 581,914,471</u>	<u>\$ 595,409,585</u>	<u>\$ 18,158,267</u>

2) Non-current assets

	December 31		
	2023	2024	
	NT\$	NT\$	US\$ (Note 4)
Taiwan	\$ 258,813,497	\$ 291,081,213	\$ 8,877,134
China	66,660,391	70,968,611	2,164,337
Others	<u>44,134,206</u>	<u>54,869,345</u>	<u>1,673,356</u>
	<u>\$ 369,608,094</u>	<u>\$ 416,919,169</u>	<u>\$ 12,714,827</u>

Non-current assets exclude financial instruments, post-employment benefit assets, and deferred tax assets.