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As filed with the Securities and Exchange Commission on April 14, 2022

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

FORM 20-F

☐ **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, 2021

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 EXCHANGE ACT OF 1934**

Date of event requiring this shell company report

Commission file number 001–37928

南茂科技股份有限公司

(Exact Name of Registrant as Specified in Its Charter)

ChipMOS TECHNOLOGIES INC.
(Translation of Registrant's Name into English)

Republic of China
(Jurisdiction of Incorporation or Organization)

No. 1, R&D Road 1, Hsinchu Science Park
Hsinchu 300-092, Taiwan, Republic of China
(Address of Principal Executive Offices)

Silvia Su
Vice President, Finance and Accounting Management Center
ChipMOS TECHNOLOGIES INC.
No. 1, R&D Road 1, Hsinchu Science Park
Hsinchu 300-092, Taiwan, Republic of China
Telephone: +886-3-577-0055
Facsimile: +886-3-566-8981
(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 per share*	IMOS*	The NASDAQ Global Select Market*

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

None
(Title of Class)

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act:
None
(Title of Class)

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, 2021, 727,240,126 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, 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. :

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. ☐

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. ☒

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 ☒

* Not for trading, but only in connection with the listing on the NASDAQ Global Select Market of American Depositary Receipts evidencing American Depositary Shares (the "ADSs"), each representing 20 common shares of ChipMOS TECHNOLOGIES INC.

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ChipMOS TECHNOLOGIES INC.

CAUTIONARY STATEMENT FOR PURPOSES OF THE "SAFE HARBOR" PROVISIONS OF THE PRIVATE SECURITIES LITIGATION REFORM ACT OF 1995

Except for historical matters, the matters discussed in this Annual Report on Form 20-F are forward-looking statements that are subject to a number of significant risks and uncertainties and are based on information as of the date hereof. These statements are generally indicated by the use of forward-looking terminology such as the words "anticipate", "believe", "estimate", "expect", "intend", "may", "plan", "project", "will", "could", "might", "should" and other words and phrases of similar import that express an indication of actions or results of actions that may or are expected to occur in the future. These statements appear in a number of places throughout this Annual Report on Form 20-F and include statements regarding our intentions, beliefs or current expectations concerning, among other things, our results of operations, financial condition, liquidity, prospects, growth, strategies and the industries in which we operate.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. Forward-looking statements are not guarantees of future performance and our actual results of operations, financial condition and liquidity, and the development of the industries in which we operate may differ materially from those made in or suggested by the forward-looking statements contained in this Annual Report on Form 20-F. Important factors that could cause those differences include, but are not limited to:

- the volatility of the semiconductor industry and the market for end-user applications for semiconductor products;
- overcapacity in the semiconductor assembly and testing markets;
- the increased competition from other companies and our ability to retain and increase our market share;
- our ability to successfully develop new technologies and remain a technological leader;
- our ability to maintain control over capacity expansion and facility modifications;
- our ability to generate growth or profitable growth;
- our ability to hire and retain qualified personnel;
- our ability to acquire required equipment and supplies to meet customer demand;
- our ability to raise debt or equity financing as required to meet certain existing obligations;
- our reliance on the business and financial condition of certain major customers;
- the success of any of our future acquisitions, investments or joint ventures;
- the outbreak of contagious disease and occurrence of earthquakes, typhoons and other natural disasters, as well as industrial accidents;
- the political stability of the regions in which we conduct operations;
- general local and global economic and financial conditions;
- the potential impact of the Coronavirus Disease 2019 ("COVID-19") pandemic on our operations or the operations of our supply chain or our customers; and
- other factors set forth under the heading "Item 3. Key Information—Risk Factors" of this Annual Report on Form 20-F.

The factors identified above are believed to be important factors (but not necessarily all of the important factors) that could cause actual results to differ materially from those expressed in any forward-looking statement made by us. Other factors not discussed herein could also have material adverse effects on us. All forward-looking statements included in this Annual Report on Form 20-F are expressly qualified in their entirety by the foregoing cautionary statements. We undertake no obligation to update any forward-looking statement (or its associated cautionary language), whether as a result of new information or future events.

Forward-looking statements include, but are not limited to, statements regarding our strategy and future plans, future business condition and financial results, our capital expenditure plans, our capacity expansion plans, our investments in Mainland China, technological upgrades, investment in research and development, future market demand, future regulatory or other developments in our industry. Please see "Item 3. Key Information—Risk Factors" for a further discussion of certain factors that may cause actual results to differ materially from those indicated by our forward-looking statements.

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

Exchange Rates

References to "US$" and "US dollars" are to United States dollars and references to "NT$" and "NT dollars" are to New Taiwan dollars. This Annual Report on Form 20-F contains translations of certain NT dollar amounts into US dollars at specified rates solely for the convenience of the reader. Unless otherwise noted, all translations from NT dollars to US dollars and from US dollars to NT dollars were made at the noon buying rate in the City of New York for cable transfers in NT dollars per US dollar as certified for customs purposes by the Federal Reserve Bank of New York as of December 30, 2021, which was NT$27.74 to US$1.00. We make no representation that the NT dollar or US dollar amounts referred to in this Annual Report on Form 20-F could have been or could be converted into US dollars or NT dollars, as the case may be, at any particular rate or at all.

Capitalization and Indebtedness

Not applicable.

Reasons for the Offer and Use of Proceeds

Not applicable.

Risk Factors

Risks Relating to Economic Conditions and the Financial Markets

Global credit and financial markets disruptions could materially and adversely affect our business and results of operations.

Disruptions in global credit, financial markets, trade tensions and COVID-19 may occur that causes diminished liquidity and limited availability of credit, reduced consumer confidence, reduced economic growth, increased unemployment rates and uncertainty about economic stability. Limited availability of credit in financial markets may lead consumers and businesses to postpone spending. This in turn may cause our customers to cancel, decrease or delay their existing and future orders with us. Particularly, the economics uncertainty caused by trade tensions and COVID-19 will impact the end product market demand. It directly affects the inventory elimination of our customers. Financial difficulties experienced by our customers or suppliers as a result of these conditions could lead to production delays and delays or defaults in payment of accounts receivable. Continuing credit markets disruption restricts our access to capital and limits our ability to fund operations or to refinance maturing obligations as they become due through additional borrowing or other sources of financing. We are not able to predict the occurrence, frequency, duration or extent of disruptions in global credit and financial markets, or when the trade tensions could be settled down. These conditions increase the difficulty of accurately forecasting and planning our business activities. If these conditions and uncertainties by COVID-19 occur or continue, or if credit and financial markets and confidence in economic conditions deteriorate, our business and results of operations could be materially and adversely affected.

Risks Relating to Our Industry

Because we depend on the highly cyclical semiconductor industry, which is characterized by significant and sometimes prolonged downturns from time to time, our revenue and earnings may fluctuate significantly, which in turn could adversely affect our results of operations and could cause the market price of our common shares or of our ADSs to decline.

Because our business is, and will continue to be, dependent on the requirements of semiconductor companies for independent assembly and testing services, any downturn in the highly cyclical semiconductor industry may reduce demand for our services and adversely affect our results of operations. All of our customers operate in this industry and variations in order levels and in service fee from our customers may result in volatility in our revenue and earnings. For instance, during periods of decreased demand for assembled semiconductors, some of our customers may simplify, delay or forego final testing of certain types of semiconductors, such as dynamic random access memory or DRAM and NAND Flash, which in turn may result in reduced demand for our services, adversely affecting our results of operations. From time to time, the semiconductor industry has experienced significant, and sometimes prolonged, downturns which have adversely affected our results of operations. We cannot give any assurances that there will not be any downturn in the future or that any future downturn will not materially and adversely affect our results of operations.

Any deterioration in the market for end-user applications for semiconductor products would reduce demand for our services and may result in a decrease in our earnings.

Market conditions in the semiconductor industry track, to a large degree, those for their end-user applications. Any deterioration in the market conditions for the end-user applications of semiconductors we test and assemble could reduce demand for our services and, in turn, could materially adversely affect our financial condition and results of operations. Our revenue is largely attributable to fees derived from testing and assembling semiconductors for use in personal computers, communications equipment, consumer electronic products and display applications. A significant decrease in demand for products in these markets could put pricing pressure on our assembly and testing services and negatively affect our revenue and earnings. The LCD driver market often aligns with broader economic trend, we cannot give any assurances that there will not be any downturn in the future or that any future downturn will not affect our results of operations. Any significant decrease in demand for end-user applications of semiconductors will negatively affect our revenue and earnings.

A decline in average selling prices for our services could result in a decrease in our earnings.

Historically, prices for our assembly and testing services in relation to any given semiconductor tend to decline over the course of its product and technology life cycle. See also "— A decrease in market demand for LCD, OLED and other display panel driver semiconductors may adversely affect our capacity utilization rates and thereby negatively affect our profitability". If we cannot reduce the cost of our assembly and testing services, or introduce higher-margin assembly and testing services for new package types, to offset the decrease in average selling prices for our services, our earnings could decrease.

A reversal or slowdown in the outsourcing trend for semiconductor assembly and testing services could reduce our profitability.

Integrated device manufacturers, or IDMs, continue to increasingly outsource stages of the semiconductor production process, including assembly and testing, to independent companies like us to shorten production cycles. 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, assembly and testing requirements to independent companies. A substantial portion of our revenue is indirectly generated from providing semiconductor assembly and testing services to these IDMs and fabless companies. We cannot assure you that these companies will continue to outsource their assembly and testing requirements to independent companies like us. A reversal of, or a slowdown in, this outsourcing trend could result in reduced demand for our services, which in turn could reduce our profitability.

Risks Relating to Our Business

If we are unable to compete effectively in the highly competitive semiconductor assembly and testing markets, we may lose customers and our income may decline.

The semiconductor assembly and testing markets are very competitive. We face competition from a number of IDMs with in-house assembly and testing capabilities and other independent semiconductor assembly and testing companies. Our competitors may have access to more advanced technologies and greater financial and other resources than we do. Many of our competitors have shown a willingness to reduce prices quickly and sharply in the past to maintain capacity utilization in their facilities during periods of reduced demand. In addition, an increasing number of our competitors conduct their operations in lower cost centers in Asia such as Mainland China. Any renewed or continued erosion in the prices or demand for our assembly and testing services as a result of increased competition could adversely affect our profits.

We are highly dependent on the market for memory products. A downturn in market prices for these products could significantly reduce our revenue and profit.

A significant portion of our revenue is derived from testing and assembling memory semiconductors. In the past, our service fees for testing and assembling memory semiconductors were sharply reduced in tandem with the decrease in the average selling price of DRAM and NAND Flash in the semiconductor industry. Oversupply of DRAM or NAND Flash products and weak demand in the DRAM or NAND Flash market may result in significant reductions in the price of DRAM or NAND Flash products, which in turn may drive down the average prices for our assembly and testing services for DRAM and NAND Flash products and further reduce our revenue and profit. We cannot assure you that there will not be further downturns in DRAM or NAND Flash prices in the future.

A decrease in market demand for LCD, OLED and other display panel driver semiconductors may adversely affect our capacity utilization rates and thereby negatively affect our profitability.

Our assembly and testing services for LCD, OLED and other display panel driver semiconductors generated revenue of NT$6,922 million, NT$7,023 million and NT$8,211 million (US$296 million) in 2019, 2020 and 2021, respectively. Including gold bump, the revenue of LCD, OLED and other display panel driver semiconductors accounted for around 47% in 2021. We invested NT$3,078 million, NT$2,143 million and NT$2,749 million (US$99 million) in 2019, 2020 and 2021, respectively, on equipment for chip-on-film, or COF and chip-on-glass, or COG, technologies, which are used in assembly and testing services for LCD, OLED and other display panel driver semiconductors. Most of this equipment may not be used for technologies other than COF or COG. The market demand for LCD, OLED and other display panel driver semiconductors increased in 2018 particularly the wafer test for TDDI in the second half of 2020. Any significant decrease in demand for these products and our related services would significantly impair our capacity utilization rates. That may result in our inability to generate sufficient revenue to cover the significant depreciation expenses for the equipment used in testing and assembling LCD, OLED and other display panel driver semiconductors, thereby negatively affecting our profitability. See also "—Because of our high fixed costs, if we are unable to achieve relatively high capacity utilization rates, our earnings and profitability may be adversely affected".

Our significant amount of indebtedness and interest expense will limit our cash flow and could adversely affect our operations.

We have a significant level of debt and interest expense. As of December 31, 2021, we had approximately NT$9,413 million (US$339 million) outstanding long-term indebtedness. Our long-term indebtedness as of December 31, 2021, represented bank loans with an interest rate between 0.45% to 1.7895%. As of December 31, 2021, NT$7,654 million (US$276 million) of our indebtedness was secured by collateral comprised of our assets.

Our significant indebtedness poses risks to our business, including the risks that:

- we may have to use a substantial portion of our consolidated cash flow from operations to pay principal and interest on our debt, thereby reducing the funds available for working capital, capital expenditures, acquisitions and other general corporate purposes;
- insufficient cash flow from operations may force us to sell assets, or seek additional capital, which we may be unable to do at all or on terms favorable to us;
- our ability to sell assets or seek additional capital may be adversely affected by security interests in our assets granted to our lenders as collateral; and
- our level of indebtedness may make us more vulnerable to economic or industry downturns.

For additional information on our indebtedness, see "Item 5. Operating and Financial Review and Prospects—Liquidity and Capital Resources".

Our results of operations may fluctuate significantly and may cause the market price of our common shares or of our ADSs to be volatile.

Our results of operations have varied significantly from period to period and may continue to vary in the future. Among the more important factors affecting our quarterly and annual results of operations are the following:

- our ability to accurately predict customer demand, as we must commit significant capital expenditures in anticipation of future orders;
- our ability to quickly adjust to unanticipated declines or shortfalls in demand and market prices for our assembly and testing services, due to our high percentage of fixed costs;
- changes in prices for our assembly and testing services;
- volume of orders relative to our assembly and testing capacity;
- capital expenditures and production uncertainties relating to the roll-out of new assembly and testing services;
- our ability to obtain adequate assembly and testing equipment on a timely basis;
- changes in costs and availability of raw materials, equipment and labor;
- changes in our product mix; and
- earthquakes, global new virus epidemic and other natural disasters, as well as industrial accidents.

Because of the factors listed above, our future results of operations or growth rates may be below the expectations of research analysts and investors. If so, the market price of our common shares or of our ADSs, and the market value of your investment, may fall.

We rely on key customers for a substantial portion of our revenue and a loss of, or deterioration of the business from, or delayed payment by, any one of these customers could result in decreased revenue and materially adversely affect our results of operations and financial condition.

We rely on a small group of customers for a substantial portion of our business. In 2021, our top five customers collectively accounted for 57% of our revenue. As part of our strategy, we have been focusing on sales to key customers through long-term service agreements. We also focus on our business with smaller customers and customers who do not place orders on a regular basis. We expect that we will continue to rely on a relatively limited number of customers for a significant portion of our revenue. Any adverse development in our key customers' operations, competitive position or customer base could materially reduce our revenue and materially adversely affect our business and profitability.

Since semiconductor companies generally rely on service providers with whom they have established relationships to meet their assembly and testing needs for their applications and new customers usually require us to pass a lengthy and rigorous qualification process, if we lose any of our key customers, we may not be able to replace them in a timely manner. We cannot assure you that receivable collection difficulties experienced by us will not occur in the future. If any of our key customers reduces or cancels its orders or terminates existing contractual arrangements, and if we are unable to attract new customers and establish new contractual arrangements with existing or new customers, our revenue could be reduced and our business and results of operations may be materially adversely affected.

Because of our high fixed costs, if we are unable to achieve relatively high capacity utilization rates, our earnings and profitability may be adversely affected.

Our operations are characterized by a high proportion of fixed costs. For memory and logic/mixed-signal semiconductor testing services, our fixed costs represented 51%, 50% and 49% of our total cost of revenue in 2019, 2020 and 2021, respectively. For memory and logic/mixed-signal semiconductor assembly services, our fixed costs represented 22%, 20% and 19% of our total cost of revenue in 2019, 2020 and 2021, respectively. For LCD, OLED and other display panel driver semiconductor assembly and testing services, our fixed costs represented 53%, 57% and 59% of our total cost of revenue in 2019, 2020 and 2021, respectively. For bumping services, our fixed costs represented 24%, 20% and 19% of our total cost of revenue in 2019, 2020 and 2021, respectively. Our profitability depends in part not only on absolute pricing levels for our services, but also on the utilization rates for our assembly and testing equipment, commonly referred to as "capacity utilization rates". Increases or decreases in our capacity utilization rates can significantly affect our gross margins as unit costs generally decrease as the fixed costs are allocated over a larger number of units. In the past, our capacity utilization rates have fluctuated significantly as a result of the fluctuations in the market demand for semiconductors. If we fail to increase or maintain our capacity utilization rates, our earnings and profitability may be adversely affected. In addition, the long-term assembly and testing services agreements we entered with certain customers may require us to incur significant capital expenditures. If we are unable to achieve high capacity utilization rates for the equipment purchased pursuant to these agreements, our gross margins may be materially and adversely affected.

The assembly and testing process is complex and our production yields and customer relationships may suffer as a result of defects or malfunctions in our testing and assembly equipment and the introduction of new packages.

Semiconductor testing and assembly are complex processes that require significant technological and process expertise. Semiconductor testing involves sophisticated test equipment and computer software. We develop computer software to test our customers' semiconductors. We also develop conversion software programs that enable us to test semiconductors on different types of testers. Similar to most software programs, these software programs are complex and may contain programming errors or bugs. In addition, the testing process is subject to human error by our employees who operate our test equipment and related software. Any significant defect in our testing or conversion software, malfunction in our test equipment or human error could reduce our production yields and damage our customer relationships.

The assembly process involves a number of steps, each of which must be completed with precision. Defective packages primarily result from:

- contaminants in the manufacturing environment;
- human error;
- equipment malfunction;

- defective raw materials; or
- defective plating services.

These and other factors have, from time to time, contributed to lower production yields. They may do so in the future, particularly as we expand our capacity or change our processing steps. In addition, to be competitive, we must continue to expand our offering of packages. Our production yields on new packages typically are significantly lower than our production yields on our more established packages. Our failure to maintain high standards or acceptable production yields, if significant and prolonged, could result in a loss of customers, increased costs of production, delays, substantial amounts of returned goods and related claims by customers. Further, to the extent our customers have set target production yields, we may be required to compensate our customers in a pre-agreed manner. Any of these problems could materially adversely affect our business reputation and result in reduced revenue and profitability.

Because of the highly cyclical nature of our industry, our capital requirements are difficult to plan. If we cannot obtain additional capital when we need it, we may not be able to maintain or increase our current growth rate and our profits will suffer.

As our industry is highly cyclical and rapidly changing, our capital requirements are difficult to plan. To remain competitive, we may need capital to fund the expansion of our facilities as well as to fund our equipment purchases and research and development activities. To meet our liquidity, capital spending and other capital needs, we have taken and plan to take certain measures to generate additional working capital and to save cash. See "Item 5. Operating and Financial Review and Prospects—Liquidity and Capital Resources". We cannot assure you that these plans and measures will be implemented or will provide sufficient sources of capital.

In addition, future capacity expansions or market or other developments may require additional funding. Our ability to obtain external financing in the future depends on a number of factors, many of which are beyond our control. They include:

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

If we are unable to obtain funding in a timely manner or on acceptable terms, our growth prospects and potential future profitability will suffer.

Disputes over intellectual property rights could be costly, deprive us of technologies necessary for us to stay competitive, render us unable to provide some of our services and reduce our opportunities to generate revenue.

Our ability to compete successfully and achieve future growth will depend, in part, on our ability to protect our proprietary technologies and to secure, on commercially acceptable terms, critical technologies that we do not own. We cannot assure you that we will be able to independently develop, or secure from any third party, the technologies required for our assembly and testing services. Our failure to successfully obtain these technologies may seriously harm our competitive position and render us unable to provide some of our services.

Our ability to compete successfully also depends on our ability to operate without infringing upon the proprietary rights of others. The semiconductor assembly and testing industry is characterized by frequent litigation regarding patent and other intellectual property rights. We may incur legal liabilities if we infringe upon the intellectual property or other proprietary rights of others. We are not able to ascertain what patent applications have been filed in the United States or elsewhere, however, until they are granted. If any third party succeeds in its intellectual property infringement claims against us or our customers, we could be required to:

- discontinue using the disputed process technologies, which would prevent us from offering some of our assembly and testing services;
- pay substantial monetary damages;
- develop non-infringing technologies, which may not be feasible; or
- acquire licenses to the infringed technologies, which may not be available on commercially reasonable terms, if at all.

Any one of these developments could impose substantial financial and administrative burdens on us and hinder our business. We are, from time to time, involved in litigation in respect of intellectual property rights. Any litigation, whether as plaintiff or defendant, is costly and diverts our resources. If we fail to obtain necessary licenses on commercially reasonable terms or if litigation, regardless of the outcome, relating to patent infringement or other intellectual property matters occurs, our costs could be substantially increased to impact our margins. Any such litigation could also prevent us from testing and assembling particular products or using particular technologies, which could reduce our opportunities to generate revenue.

If we are unable to obtain raw materials and other necessary inputs from our suppliers in a timely and cost-effective manner, our production schedules would be delayed and we may lose customers and growth opportunities and become less profitable.

Our operations require us to obtain sufficient quantities of raw materials at acceptable prices in a timely and cost-effective manner. We source most of our raw materials, including critical materials like leadframes, organic substrates, epoxy, gold wire and molding compound for assembly, and tapes for COF, from a limited group of suppliers. We purchase all of our materials on a purchase order basis and have no long-term contracts with any of our suppliers. From time to time, suppliers have extended lead times, increased the price or limited the supply of required materials to us because of market shortages. Consequently, we may, from time to time, experience difficulty in obtaining sufficient quantities of raw materials on a timely basis. In addition, from time to time, we may reject materials that do not meet our specifications, resulting in declines in output or yield. Although we typically maintain at least two suppliers for each key raw material, we cannot assure you that we will be able to obtain sufficient quantities of raw materials and other supplies of an acceptable quality in the future. It usually takes from three to six months to switch from one supplier to another, depending on the complexity of the raw material. If we are unable to obtain raw materials and other necessary inputs in a timely and cost-effective manner, we may need to delay our production and delivery schedules, which may result in the loss of business and growth opportunities and could reduce our profitability.

If we are unable to obtain additional assembly and testing equipment or facilities in a timely manner and at a reasonable cost, we may be unable to fulfill our customers' orders and may become less competitive and less profitable.

The semiconductor testing and assembly business is capital intensive and requires significant investment in expensive equipment manufactured by a limited number of suppliers. The market for semiconductor assembly and testing equipment is characterized, from time to time, by intense demand, limited supply and long delivery cycles. Our operations and expansion plans depend on our ability to obtain equipment from a limited number of suppliers in a timely and cost-effective manner. We have no binding supply agreements with any of our suppliers and we acquire our assembly and testing equipment on a purchase order basis, which exposes us to changing market conditions and other significant risks. Semiconductor assembly and testing also requires us to operate 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 negatively impact our financial condition and results of operations as well as our growth prospects. Currently, we do not have any long-term service agreements that require our commitment to acquire additional assembly and testing equipment or facilities. We cannot assure you, however, that such commitment will not be made in the future. See "Item 4. Information on the Company—Customers".

If we are unable to manage the expansion of our operations and resources effectively, our growth prospects may be limited and our future profitability may be reduced.

We expect to continue to expand the operations and to increase the number of employees. Rapid expansion puts a strain on our managerial, technical, financial, operational and other resources. As a result of our expansion, we will need to implement additional operational and financial controls and hire and train additional personnel. We cannot assure you that we will be able to do so effectively in the future, and our failure to do so could jeopardize our expansion plans and seriously harm our operations.

Laws of the Republic of China may be less protective of shareholder rights than laws of the United States or other jurisdictions.

Our corporate affairs are governed by our articles of incorporation and laws governing corporations incorporated in the Republic of China ("ROC"). The rights of our shareholders to bring shareholders' suits against us or our board of directors under the ROC law are more limited than those of the shareholders of U.S. corporations. For example, the ROC Company Act requires that a shareholder that continuously holds at least 1% of our issued and outstanding shares for at least 6 months may request our audit committee to institute an action against a director on the Company's behalf. In addition, the controlling shareholders of U.S. corporations owe fiduciary duties to minority shareholders, while controlling shareholders in ROC corporations do not. Therefore, our shareholders may be less able under the ROC law than they would be under the laws of the United States or other jurisdictions to protect their interests in connection with actions by our management, members of our board of directors or our controlling shareholder.

It may be difficult to bring and enforce lawsuits against us in the United States.

We are incorporated in the ROC and a majority of our directors and most of our officers are not residents of the United States. A substantial portion of our assets is located outside the United States. As a result, it may be difficult for our shareholders to serve notice of a lawsuit on us or our directors and officers within the United States. Because most of our assets are located outside the United States, it may be difficult for our shareholders to enforce in the United States judgments of United States courts. Any United States judgments obtained against us will not be enforced by ROC courts if any of the following situations shall apply to such final judgment:

- the court rendering the judgment does not have jurisdiction over the subject matter under the ROC law;

- the judgment was rendered by default, except where the summons or order necessary for the commencement of the action was duly served on us within the jurisdiction of the court rendering the judgment within a reasonable period of time and in accordance with the laws and regulations of such jurisdiction, or with judicial assistance of the ROC;
- the judgment or the court procedures resulting in the judgment are contrary to the public order or good morals of the ROC; or
- the judgments of ROC courts are not recognized and enforceable in the jurisdiction of the court rendering the judgment on a reciprocal basis.

Investor confidence and the market price of our common shares or ADSs may be adversely impacted if we are unable to maintain effective Internal Control over Financial Reporting in accordance with Section 404 of the Sarbanes-Oxley Act of 2002.

We are required to comply with the ROC and US securities laws and regulations in connection with internal controls. As a public company in the United States, our management is required to assess the effectiveness of our internal control over financial reporting using the criteria established in Internal Control – Integrated Framework (2013) issued by Committee of Sponsoring Organization of the Treadway Commission (COSO), as required by Section 404 of the Sarbanes-Oxley Act of 2002. We carried out an evaluation, under the supervision and with the participation of management, including our President, the principal executive officer and Vice President of the Finance and Accounting Management Center, the principal financial officer of the effectiveness of the design and operation of our internal controls over financial reporting as of December 31, 2021, and concluded those internal controls over financial reporting were effective as of that date. See “Item 15. Controls and Procedures” for more information. Moreover, even if our management concludes that our internal controls over our financial reporting are effective, our independent public registered accounting firm may disagree. If our independent public registered accounting firm is not satisfied with our internal controls over our financial reporting or the level at which our controls are documented, designed, operated or reviewed, or if the independent public registered accounting firm interprets the requirements, rules or regulations differently from us, it may decline to attest our effectiveness of internal controls over financial reporting or may issue an adverse opinion in the future. Any of these possible outcomes could result in an adverse reaction in the financial marketplace due to a loss of investor confidence in the reliability of our consolidated financial statements, which ultimately could negatively impact the market prices of our common shares or ADSs.

Any environmental claims or failure to comply with any present or future environmental regulations, or any new environmental regulations, may require us to spend additional funds, may impose significant liability on us for present, past or future actions, and may dramatically increase the cost of providing our services to our customers.

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 assembly and gold bumping processes. Although we have not suffered material environmental claims in the past, a failure or a claim that we have failed to comply with any present or future regulations could result in the assessment of damages or imposition of fines against us, suspension of production or a cessation of our operations or negative publicity. New regulations could require us to acquire costly equipment or to incur other significant expenses. Any failure on our part to control the use of, or adequately restrict the discharge of, hazardous substances could subject us to future liabilities that may materially reduce our earnings.

Fluctuations in exchange rates could result in foreign exchange losses.

Currently, we are nearly half of revenue denominated in US dollars. Our cost of revenue and operating expenses, on the other hand, are incurred in several currencies, including NT dollars, Japanese yen and US dollars. In addition, a substantial portion of our capital expenditures, primarily for the purchase of LCD, OLED and other display panel driver semiconductor, assembly and testing equipment, has been, and is expected to continue to be, denominated in Japanese yen with much of the remainder in US dollars. We also have debt denominated in NT dollars, Japanese yen, and US dollars. Fluctuations in exchange rates, primarily among the US dollar, the NT dollar and the Japanese yen, will affect our costs and operating margins in NT dollar terms. In addition, these fluctuations could result in exchange losses and increased costs in NT dollar terms. Despite selective hedging and other techniques implemented by us, fluctuations in exchange rates have affected, and may continue to affect, our financial condition and results of operations.

We may not be successful in our acquisitions, investments, joint ventures and dispositions, and may therefore be unable to implement fully our business strategy.

To implement our business strategy requires us to enter into acquisition, investment, joint venture and disposition transactions. These transactions may not be successful to maintain or grow our business. On November 30, 2016, the Company and Tsinghua Unigroup Ltd. ("Tsinghua Unigroup") mutually agreed to form a joint-venture. Under the joint-venture, ChipMOS TECHNOLOGIES (BVI) LTD. ("ChipMOS BVI"), a wholly-owned subsidiary of the Company, would sell, for the aggregate purchase price of approximately RMB 484 million, 54.98% of the equity interests of its wholly-owned subsidiary, Unimos Shanghai, to strategic investors, including Tibet Unigroup Guowei Investment Co., Ltd. ("Unigroup Guowei"), a subsidiary of Tsinghua Unigroup, which would hold 48% equity interests of Unimos Shanghai, and the other strategic investors, including a limited partnership owned by Unimos Shanghai's employees, would own 6.98% equity interest of Unimos Shanghai. The transaction was completed in March 2017. Unimos Shanghai is no longer the subsidiary of the Company following the completion of equity interest transfer. Please see "Item 4. Information on the Company—Agreements with Tsinghua Unigroup Ltd." for additional information.

The success of our acquisitions, investments, joint ventures and dispositions depends on a number of factors, including:

- our ability to identify suitable investment, acquisition, joint venture or disposition opportunities;
- our ability to reach an agreement for an acquisition, investment, joint venture or disposition opportunity on terms that are satisfactory to us or at all;
- the extent to which we are able to exercise control over the acquired or joint venture company;
- our ability to align the economic, business or other strategic objectives and goals of the acquired company with those of our company; and
- our ability to successfully integrate the acquired or joint venture company or business with our company.

If we are unsuccessful in our acquisitions, investments, joint ventures and dispositions, we may not be able to implement fully our business strategy to maintain or grow our business.

We rely on key personnel, and our revenue could decrease and our costs could increase if we lose their services.

We depend on the continued service of our executive officers and skilled engineering, technical and other personnel. We will also be required to hire a substantially greater number of skilled employees in connection with our expansion plans. In particular, we depend on a number of skilled employees in connection with our LCD, OLED and other display panel driver semiconductor assembly and testing services, and the competition for such employees in Taiwan is intense. We may not be able to either retain our present personnel or attract additional qualified personnel as and when needed. Moreover, we do not carry key person insurance for any of our executive officers nor do we have employment contracts with any of our executive officers or employees, and, as a result, none of our executive officers or employees is bound by any non-competition agreement. If we lose any of our key personnel, it could be very difficult to find and integrate replacement personnel, which could affect our ability to provide our services, resulting in reduced revenue and earnings. In addition, we may need to increase employee compensation levels in order to retain our existing officers and employees and to attract additional personnel. As of March 31, 2022, 20% of the workforces at our facilities are foreign workers employed by us under work permits that are subject to government regulations on renewal and other terms. Consequently, if the regulations in Taiwan 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 reasonable cost, we may be unable to maintain or increase our level of services and may suffer reduced revenue and earnings.

If our security measures are breached and unauthorized access is obtained to our information technology systems, we may lose proprietary data.

Our security measures may be breached as a result of third-party action, including computer hackers, employees error, malfeasance or otherwise, and result in unauthorized access to our customers' data or our data, including our intellectual property and other confidential business information, or our information technology systems. Because the techniques used to obtain unauthorized access, or to sabotage systems, change frequently, we may be unable to anticipate these techniques or to implement adequate preventative measures. Any security breach could result in disclosure of our trade secrets, confidential customer, supplier or employee data, which could result in legal liability, harm to our reputation and otherwise harm our business.

Risks Relating to Countries in Which We Conduct Operations

The ROC laws and regulations limit or prohibit certain technology cooperation between ROC persons or entities with PRC persons or entities, and our current technology transfer arrangements between the Company and Unimos Shanghai may be found to be in violation of any such limitation or prohibition, which may result in a fine of between NT$50 thousand and NT$25 million and the termination of such technology transfer arrangements and therefore have a material adverse effect on the operations of Unimos Shanghai and our financial condition and results of operations.

The ROC laws and regulations previously prohibited any transfer of semiconductor assembly and testing technologies to any person or entity located in Mainland China, except for transfers involving certain low-end semiconductor assembly and testing technologies, such as conventional wire bond assembly technology, if certain requirements are met. The ROC Ministry of Economic Affairs ("MOEA") has the ultimate administrative authority in interpreting such laws and regulations. In February 2010, these restrictions have been relaxed, so that ROC entities may transfer semiconductor assembly and testing technologies to any person or entity located in Mainland China after they have obtained approval from the Investment Commission of the ROC Ministry of Economic Affairs ("MOEAIC"). Under a technology transfer agreement, dated August 1, 2002, ChipMOS Bermuda, the parent company of the Company before its merger with and into the Company effective on October 31, 2016, licensed to Unimos Shanghai (formerly known as ChipMOS TECHNOLOGIES (Shanghai) LTD.) certain assembly and test-related technologies that were then controlled by ChipMOS Bermuda, which included technologies that were licensed to ChipMOS Bermuda by the Company. ChipMOS Bermuda continued to license such technologies to Unimos Shanghai pursuant to a technology transfer agreement dated October 3, 2011 with effective date of August 1, 2012. ChipMOS Bermuda also provided Unimos Shanghai with technical support and consulting services under this agreement. Following the merger of ChipMOS Bermuda and the Company which was effective on October 31, 2016 (the "Merger"), the Company is the surviving company to provide Unimos Shanghai with technical support and consulting services. On May 27, 2016, the Company and Unimos Shanghai executed another technology transfer and license agreement under which the Company licensed Unimos Shanghai certain technologies relating to LCD driver IC assembly and testing and wafer bumping. The Company and Unimos Shanghai further executed the first addendum and the second addendum to such technology transfer and license agreement on August 5, 2016 and January 19, 2017, respectively, to revise the term, and license fee and running royalty of such license arrangement. On April 1, 2020, the Company and Unimos Shanghai mutually agreed to terminate the technology transfer agreement.

Our ROC special counsel, Lee and Li, has advised that since our technology transfer arrangements as described above have been approved by the MOEAIC, they are in compliance with all applicable ROC laws and regulations. However, substantial uncertainties remain regarding the interpretation and application of those laws and regulations. Accordingly, we cannot assure you that ROC regulatory authorities will not take a view contrary to the opinion of our ROC special counsel. If we were determined to be in violation of applicable ROC laws and regulations governing technology cooperation with PRC persons and entities, we may be subject to a fine of between NT$50 thousand and NT$25 million and may be ordered by the MOEAIC to terminate or rectify such activity within a specified period of time.

The operations we conduct through our affiliated companies that we do not fully own may be limited by legal duties owed to other shareholders of such companies.

Certain of our operations are conducted through companies that we do not fully own. For example, as of March 31, 2017, the Company owned 45.02% equity interests of Unimos Shanghai through its wholly-owned subsidiary ChipMOS BVI. We also conduct other activities through our affiliated entities. See also "—Risks Relating to Our Common Shares or ADSs—The Company's ability to maintain its listing and trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market is dependent on factors outside of the Company's control and satisfaction of stock exchange requirements. The Company may not be able to overcome such factors that disrupt its trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market or satisfy other eligibility requirements that may be required of it in the future" and "Item 7. Major Shareholders and Related Party Transactions—Related Party Transactions".

In accordance with the various laws of the relevant jurisdictions in which our subsidiaries and affiliates are organized, each of our subsidiaries and affiliates and their respective directors owe various duties to their respective shareholders. As a result, the actions we wish our subsidiaries or affiliates to take could be in conflict with their or their directors' legal duties owed to their other shareholders. When those conflicts arise, our ability to cause our subsidiaries or affiliates to take the action that we desire may be limited.

Any future outbreak of health epidemics and outbreaks of contagious diseases may materially affect our operations and business.

Any future outbreak of contagious diseases, such as avian influenza virus subtypes H5N1, H9N2 and H7N9 and swine influenza virus subtypes H1N1 and H3N2, New Influenza A or more commonly known as the "bird flu" and "swine flu", Severe Acute Respiratory Syndrome ("SARS"), or Middle East respiratory syndrome coronavirus ("MERS-CoV"), for which there is inadequate treatment or no known cure or vaccine, may potentially result in a quarantine of infected employees and related persons, and adversely affect our operations at one or more of our facilities or the operations of our customers or suppliers.

The COVID-19 pandemic persists as of the date hereof. Many countries have taken extreme measures to contain the transmission, including total or partial lockdown of the infected areas, travel bans, closures of factories, among others. Governments around the world implemented enhanced screenings, quarantine requirements, and travel restrictions in connection with the COVID-19 pandemic. Many suppliers in the semi-conductor industry have had work forces disrupted due to the quarantine requirements and restricted travel. The extent of the continuing impact of COVID-19 on our operational and financial performance will depend on future developments, including, but not limited to, the travel advisories and restrictions and the speed of vaccination program in key markets, all of which are highly uncertain and cannot be predicted. Preventing the effects from and responding to the market disruption of this or any other public health threat, related or otherwise, may further increase costs of our business and may have a material adverse effect on our business, financial condition, and results of operations. As a result, may incur expenses or delays relating to such events outside of our control, which could have a material adverse impact on our business, operating results and financial condition.

We cannot predict the impact that any further future outbreak of the aforementioned influenza viruses or other diseases could have on our business and results of operations. If any of our employees is suspected of having contracted any contagious disease, we may, under certain circumstances, be required to quarantine such employees and the affected areas of our premises. As a result, we may have to suspend part or all of our operations temporarily. In addition, any future outbreak may restrict the level of economic activity in affected regions, which may also adversely affect our businesses. As a result, there is no assurance that any future outbreak of contagious diseases would not have a material adverse effect on our business, financial condition and results of operations.

The COVID-19 pandemic could adversely affect our business in a material way.

The COVID-19 pandemic has resulted in significant governmental measures being implemented to control the spread of COVID-19 and its variants, including, among others, restrictions on travel, manufacturing and the movement of employees in many regions of the world. Our principal executive offices and our assembly and testing facilities are located in Taiwan and we maintain sales and marketing offices in Taiwan, the United States and Mainland China. If the remote or work from home conditions in any of our offices continues for an extended period of time, we may experience delays in product development, a decreased ability to support our customers, and overall lack of productivity. Pandemics and epidemics such as the current COVID-19 outbreak or other widespread public health problems could negatively impact our business. Our customers may also experience closures of their manufacturing facilities or inability to obtain other components, either of which could negatively impact demand for our solutions. COVID-19 has negatively impacted the overall economy and, as a result of the foregoing, will potentially negatively impact our operating results for fiscal year 2022.

We face substantial political risk associated with doing business in the ROC, particularly due to the strained relations between the ROC and the PRC, which could negatively affect our business and the market price of our common shares or ADSs.

Our principal executive offices and our assembly and testing facilities are located in the ROC. As a result, our business, financial condition and results of operations and the market price of our common shares or ADSs may be affected by changes in the ROC governmental policies and the political relationship between the ROC and the PRC, as well as social instability and diplomatic and social developments in or affecting the ROC which are beyond our control. The ROC has a unique international political status. The PRC government regards Taiwan as a province and does not recognize the legitimacy of the ROC as an independent country. Although significant economic and cultural relations have been positively strengthened in recent years between the ROC and the PRC, relations have often been strained. In March 2005, the PRC government enacted the “Anti-Secession Law” codifying its policy of retaining the right to use military force to gain control over Taiwan, particularly under what it considers as highly provocative circumstances, such as a declaration of independence by Taiwan or the refusal by the ROC to accept the PRC’s stated “One China” principle.

In 2016 and 2020, Tsai Ing-wen of the pro-independence Democratic Progressive Party (“DPP”) won Taiwan’s Presidential Elections and the DPP gained a majority in Taiwan’s Legislative Yuan (the unicameral legislature of the ROC) since 2016. President Tsai and the DPP had stressed on how they are keen to maintain the status quo with the PRC. However, the PRC has since ramped up pressures through various means on the Tsai administration for her refusal to accept the “One China” principle. It is uncertain how these different measures may affect our financial condition and results of operations, and there is no assurance that any future measures imposed by the PRC or ROC would not adversely affect our financial condition or results of operations.

Past developments related to the interaction between the ROC and the PRC have on occasion depressed the market prices of the securities of Taiwanese or Taiwan-related companies, including our own. We cannot assure you any contentious situations between the ROC and the PRC will resolve in maintaining the current status quo or remain peaceful. Relations between the ROC and the PRC and other factors affecting military, political or economic stability 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 or ADSs.

The business and operations of our business associates and our own business operations are vulnerable to disruptions that may be caused by natural disasters and other events.

The frequency and severity of catastrophic events, including natural disasters and severe weather has been increasing, in part due to climate change or systemic regional geological changes that manifest in damaging earthquakes. ChipMOS has manufacturing and other operations in locations susceptible to natural disasters, such as flooding, earthquakes, tsunamis, typhoons, and droughts that may cause interruptions or shortages in the supply of utilities, such as water and electricity that could disrupt operations. In addition, ChipMOS's suppliers and customers also have operations in such locations. We currently provide most of our testing services through our facilities in the Hsinchu Science Park and the Hsinchu Industrial Park in Taiwan, and all of our assembly services through our facility in the Southern Taiwan Science Park, which are susceptible to earthquakes, tsunamis, flooding, typhoons, and droughts from time to time that may cause shortages in electricity and water or interruptions to our operations. Significant damage or other impediments to these facilities as a result of natural disasters, industrial strikes or industrial accidents could significantly increase our operating costs.

The production facilities of many of our suppliers, customers and providers of complementary semiconductor manufacturing services, including foundries, are located in Taiwan. If our customers are adversely affected by natural disasters or other events occurring in or affecting these geographic areas, it could result in a decline in the demand for our assembly and testing services. If our suppliers and providers of complementary semiconductor manufacturing services are affected by such events, our production schedule could be halted or delayed. As a result, a major earthquake, other natural disaster, industrial strike, industrial accident or other disruptive event occurring in or affecting Taiwan could severely disrupt our normal operation of business and have a material adverse effect on our financial condition and results of operations.

ChipMOS has occasionally suffered power outages or surges in Taiwan caused by difficulties encountered by its electricity supplier, the Taiwan Power Company, or other power consumers on the same power grid, which have resulted in interruptions to our operations. Such shortages or interruptions in electricity supply could further be exacerbated by changes in the energy policy of the government which intends to make Taiwan a nuclear-free country. If we are unable to secure reliable and uninterrupted supply of electricity to power our manufacturing fabs within Taiwan, our ability to fill customers' orders would be severely jeopardized. Also, in 2020 and 2021, Taiwan has faced one of the worst droughts in decades. Government imposes restrictions on the supply and usage of water by industrial companies like us as responses, it could disrupt our operations. We maintain a comprehensive risk management system dedicated to the safety of people, the conservation of natural resources, and the protection of property. In order to effectively handle emergencies and natural disasters, at each facility management has developed comprehensive plans and procedures that focus on risk prevention, emergency response, crisis management and business continuity. All ChipMOS manufacturing factories have been ISO 14001 certified (environmental management system) and OHSAS 18001 certified (occupational health and safety management system).

ChipMOS pays special attention to preparedness of emergency response to disasters, such as typhoons, floods and droughts caused by climate change, earthquakes and disruptions to water, electricity and other public utilities. We have established a company-wide taskforce dedicated to managing the risk of a water or electricity shortage that might arise due to climate change. Despite our preparedness, there is no assurance that any such natural disaster would not severely disrupt our normal operation of business and have a material adverse effect on our financial condition and results of operations.

Systemic political, economic and financial crises could negatively affect our business

In recent years, several major systemic political, economic and financial crises negatively affected global business, banking and financial sectors, including the semiconductor industry and markets.

Since 2018, there have been political and trade tensions among many of the world's major economies. These tensions have resulted in the imposition of tariff, non-tariff trade barriers and sanctions, including export control restrictions and sanctions against certain countries and individual companies. These trade barriers and other measures have particularly impacted the semiconductor industry and related markets. Prolonged or increased use of trade barriers and such measures may result in a decrease in the growth of the global economy and the semiconductor industry, causing disturbance in global markets that often result in declines in electronic products sales from which we generate our income through our products and services. Also, any increase in the use of export control restrictions and sanctions to target certain countries and entities, any expansion of the extraterritorial jurisdiction of export control laws, or complete or partial ban on semiconductor products sales to certain entities could impact not only our ability to continue supplying products to those customers, but also our customers' demand for our products, and could even lead to changes in semiconductor supply chains.

Conversely, measures adopted by an affected country to counter the impacts of another country's actions or regulations could lead to significant legal liability to multinational corporations including our own. For example, the PRC Ministry of Commerce promulgated the Blocking Statute and the Provisions on the Unreliable Entity List in January 2021 and September 2020, and in furtherance of that, the "Anti-Foreign Sanctions Law" was promulgated by the PRC government on June 10, 2021 to systematize the *ad hoc* sanctions imposed by the PRC government on foreign individuals and organizations that, among other matters, entitles Chinese entities incurring damages from a multinational's compliance with foreign laws to seek civil remedies. The imposition of trade sanctions or other regulations or the loss of "normal trade relations" status with the PRC could significantly increase our production cost and harm our business. As of the date of this annual report, our current results of operations have not been materially affected by the expanded export control regulations or the novel rules or measures adopted to counteract them. Nevertheless, depending on future developments of global trade tensions, such regulations, rules, or measures may have an adverse effect on our business and operations, and we may incur significant legal liability and financial losses as a result.

Further, changes in PRC's economic, political or social conditions or government policies could adversely impact our business and operations. Some of the governmental measures implemented by the Chinese government may help China achieve its carbon peaking and neutrality goals as well as energy and climate goals, but may have a negative effect on us or our suppliers or customers in China. For example, China has implemented the dual-control policy on energy consumption and intensity to reduce energy intensity and to limit total energy consumption and to accelerate the elimination of outdated and inefficient excess production capacity. Despite a policy tool implemented in 2016, on June 3 and August 12, 2021, the National Development and Reform Commission issued the quarterly reviews of the target achievement for the first time, with progress alerts upon provinces. On September 16, 2021, the policymaker released "The Scheme to Refine Dual-Control of Energy Intensity and Total Energy Consumption", which clarified the overall arrangement, working principles, as well as tasks and measures of the dual control system, and drew a roadmap for the development of the dual control system. Just days after that, some provinces with "progress alerts" started to employ power rationing and production curbs. In the face of the current severe situation of dual-control of energy consumption and intensity, our suppliers or customers in China may be adversely affected. Consequently, our businesses, financial condition and results of operations may be materially and adversely affected.

Any future outbreak of radiation-related disease as a result of nuclear power plant reactors damage caused by the Great East Japan Earthquake of 2011 may materially adversely affect our operations and business.

The Great East Japan Earthquake of 2011 raises tremendous concerns about the possible effects of radiation emission from the damaged nuclear power plants. Japanese official authorities are working with experts in assessing the risk and determining the best courses of actions to implement to escape harmful radiation. The potential health effects due to exposure to harmful radiation may be temporary or permanent harmful effects in nature.

Multiple radioactive gases could possibly be emitted in a situation where uranium attains a "meltdown" state, which is a severe overheating of the core of a nuclear reactor, in which the core melts and radiation and heat are caused to escape. This would occur if the containment system partially or fully fails. The particles that are released with the gases due to the meltdown would be the spewed particles of iodine-131, strontium-90 and cesium-137. These might enter into a human by being swallowed, absorbed through the skin, or inhaled. Depending on the chemical characteristics of each of these and their predilection for certain body tissues, they could cause cancers of such organs as bones, soft tissues near bones, thyroid gland, and the bone marrow (typically known as leukemia).

Acute or very high level radiation exposure can cause a person to become very ill or to die quickly. Ionizing radiation, which is defined as high-energy particles or electromagnetic waves that can break chemical bonds, damage humans by disrupting cellular function, particularly in tissues with rapid growth and turnover of cells. Intense, high level and/or excessive radiation exposure may result in acute radiation syndrome whereby harmful effects to the human body may be evidenced by skin burns, internal organ deterioration, bleeding, vomiting, bone marrow distortion and deaths. If the radiation exposure is less intense and/or more prolonged at a lower level, then the central nervous system, kidneys, thyroid gland, and liver may be affected. Cancer is the most well-known effect, and may affect virtually any significantly exposed tissue.

Certain health effects due to exposure to harmful radiation does not have adequate treatment or known cure or vaccine, consequently, may potentially result in a quarantine of infected employees and related persons, and adversely affect our operations at one or more of our facilities or the operations of our customers or suppliers. We cannot predict the probability of any future outbreak of radiation related diseases as a possible result of nuclear power plants damage caused by the Great East Japan Earthquake of 2011 or the extent of the material adverse impact that this could have on our business and results of operations.

Risks Relating to Our Common Shares or ADSs

The Company's ability to maintain its listing and trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market is dependent on factors outside of the Company's control and satisfaction of stock exchange requirements. The Company may not be able to overcome such factors that disrupt its trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market or satisfy other eligibility requirements that may be required of it in the future.

The Company became listed and commenced trading its common shares on the main board of Taiwan Stock Exchange ("TWSE") on April 11, 2014 and its ADSs on the NASDAQ Stock Market ("NASDAQ") on November 1, 2016. For a TWSE-listed and NASDAQ-listed company to continue trading on the main board of TWSE and NASDAQ depends in part on market conditions and other factors that may not within the control of the Company. For these reasons there can be no assurance that the Company's shares will continue to be listed or traded on the TWSE or ADSs will continue to be listed or traded on the NASDAQ.

The audit work on our PRC associate may not be inspected fully by the Public Company Accounting Oversight Board and, as such, our investors are deprived of the benefits of such inspection and our ADSs may be delisted or prohibited from trading.

Auditors of companies that are registered with the Securities and Exchange Commission (the "SEC") and traded publicly in the United States, including our independent registered public accounting firm, must be registered with the Public Company Accounting Oversight Board (the "PCAOB"), and are subject to laws in the United States pursuant to which the PCAOB conducts regular inspections to assess their compliance with the relevant professional standards.

On March 24, 2021, the SEC adopted interim final rules relating to the implementation of certain disclosure and documentation requirements of the Holding Foreign Companies Accountable Act (the "HFCAA"). Furthermore, on June 22, 2021, the U.S. Senate passed the Accelerating Holding Foreign Companies Accountable Act, which, if signed into law, would amend the HFCAA and require the SEC to prohibit an issuer's securities from trading on any U.S. stock exchanges if its auditor is not subject to PCAOB inspections for two consecutive years instead of three consecutive years. On September 22, 2021, the PCAOB adopted a final rule implementing the HFCAA, which provides a framework for the PCAOB to use when determining, as contemplated under the HFCAA, whether the PCAOB is unable to inspect or investigate registered public accounting firms located in a foreign jurisdiction because of a position taken by one or more authorities in that jurisdiction. On December 2, 2021, the SEC adopted amendments to finalize rules implementing the submission and disclosure requirements in the HFCAA. The final amendments require Commission-Identified Issuers to submit documentation to the SEC establishing that, if true, it is not owned or controlled by a governmental entity in the public accounting firm's foreign jurisdiction. The amendments also require that a Commission-Identified Issuer that is a "foreign issuer," as defined in Exchange Act Rule 3b-4, provide certain additional disclosures in its annual report for itself and any of its consolidated foreign operating entities. Further, the release provides notice regarding the procedures the SEC has established to identify issuers and to impose trading prohibitions on the securities of certain Commission-Identified Issuers, as required by the HFCAA. On December 16, 2021, the PCAOB issued a Determination Report which found that the PCAOB is unable to inspect or investigate registered public accounting firms headquartered in: (1) mainland China, and (2) Hong Kong.

Our auditor, PricewaterhouseCoopers, Taiwan, which is based in Taiwan, is currently subject to inspection by the PCAOB every three years. The audit work on our PRC associate is performed directly by our auditor under a temporary license issued by the Ministry of Finance of the PRC. However, our auditor is unable to provide audit working papers of the Company's associate in China for PCAOB's inspection without the approval of the PRC authorities. The potential inability of the PCAOB to inspect our auditor's working paper of our PRC associate may prevent the PCAOB from fully evaluating audits and quality control procedures of our independent registered public accounting firm. As a result, investors may be deprived of the benefits of PCAOB inspections. Also, the inability of the PCAOB to fully inspect our auditor's working paper makes it more difficult to evaluate the effectiveness of our auditor's audit procedures or quality control procedures as compared to other auditors that are subject to PCAOB inspections. Investors may lose confidence in our reported financial information and procedures and the quality of our financial statements. Further, if the PCAOB is not able to fully conduct inspections of our auditor's work papers of our PRC associate, you may be deprived of the benefits of such inspection which could result in limitation or restriction to our access to the U.S. capital markets and trading of our securities may be prohibited and the NASDAQ may determine to delist our securities if the PCAOB determines that it cannot inspect or investigate our auditor under the HFCAA.

Volatility in the price of our common shares or ADSs may result in shareholder litigation that could in turn result in substantial costs and a diversion of our management's attention and resources.

The financial markets in the United States and other countries have experienced significant price and volume fluctuations, and market prices of technology companies have been and continue to be extremely volatile. Volatility in the price of our common shares or ADSs may be caused by factors outside of our control and may be unrelated or disproportionate to our results of operations. Shareholders of public companies such as the Company frequently institute securities class action litigations against companies following periods of volatility in the market price of public company securities including common shares and ADSs. Litigation of this kind against the Company could result in substantial costs and a diversion of our management's attention and resources.

Certain provisions in our constitutive documents and in our severance agreements with our executive officers make the acquisition of us by another company more difficult and costly and therefore may delay, defer or prevent a change of control.

We entered into change in control severance agreements with certain management pursuant to which we agreed to pay certain severance payments if a change in control event (as defined in the change in control severance agreements) occurs and the employment of such executive officer is terminated by our company other than for cause or by such executive officer for good reasons within two years following the occurrence of the change in control event. These agreements may increase the cost of a party seeking to effect a change in control of our company.

Future sales, pledge or issuance of common shares or ADSs by us or our current shareholders could depress our share price or ADSs price and you may suffer dilution.

Sales of substantial amounts of common shares or ADSs in the public market, the perception that future sales may occur, or the pledge of a substantial portion of our common shares or ADSs could depress the prevailing market price of our common shares or ADSs. See "Item 7. Major Shareholders and Related Party Transactions—Major Shareholders" for further information about our major shareholders.

The Company was listed and commenced trading of common shares on the main board of TWSE on April 11, 2014. See "—Risks Relating to Our Common Shares or ADSs—The Company's ability to maintain its listing and trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market is dependent on factors outside of the Company's control and satisfaction of stock exchange requirements. The Company may not be able to overcome such factors that disrupt its trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market or satisfy other eligibility requirements that may be required of it in the future" for additional information on the Company's listing on the main board of TWSE. We plan to issue, from time to time, additional shares in connection with employee compensation and to finance possible future capital expenditures, investments or acquisitions. See "Item 6. Directors, Senior Management and Employees—Restricted Shares" for a discussion of the plan of the Restricted Shares that we have adopted for the benefit of our employees. The issuance of additional shares may have a dilutive effect on other shareholders and may cause the price of our common shares or ADSs to decrease.

On November 30, 2016, the Company and Unigroup Guowei executed the Equity Interest Transfer Agreement. Under the agreement, ChipMOS BVI, a wholly-owned subsidiary of the Company, would sell 54.98% of the equity interests of its wholly-owned subsidiary, Unimos Shanghai, to strategic investors, including Unigroup Guowei, a subsidiary of Tsinghua Unigroup, which will hold 48% equity interests of Unimos Shanghai. The transaction was completed in March 2017 and Unimos Shanghai is no longer the subsidiary of the Company. On December 16, 2019, Unigroup Guowei and one of the strategic investor sold and transferred all equity interests of Unimos Shanghai to Yangtze Memory Technologies co., Ltd. ("Yangtze Memory"), which holds 50% equity interests of Unimos Shanghai after completed transaction. On May 11, 2020, one of the strategic investor sold and transferred all equity interests of Unimos Shanghai to Yangtze Memory, which holds 50.94% equity interests of Unimos Shanghai after completed transaction.

Holders of Our ADSs do not have the same voting rights as holders of our common shares.

Under the ROC Company Act, except under limited circumstances, shareholders have one vote for each common share held. See "Item 10. Additional Information—Voting Rights" for a discussion of voting rights of holders of our common shares. Holders of our ADSs do not have the same voting rights as holders of our common shares. Instead, the voting rights of a holder of our ADSs are governed by the Deposit Agreement and are able to exercise voting rights on an individual basis as follows: if a holder of our ADSs outstanding at the relevant record date instructs the depositary to vote in a particular manner for or against a resolution, including the election of directors, the depositary will cause all the shares represented by such holder's ADSs to be voted in that manner. If the depositary does not receive timely instructions from a holder of our ADSs outstanding at the relevant record date to vote in a particular manner for or against any resolution, including the election of directors, such holders of our ADSs will be deemed to have instructed the depositary or its nominee to give a discretionary proxy to a person designated by the Company to vote all the shares represented by such holder's ADSs at the discretion of such person, which may not be in the interest of holders of our ADSs.

If a non-ROC holder of our ADSs withdraws and holds our shares, such holder of our ADSs will be required to appoint a tax guarantor, local agent and custodian in the ROC and register with the TWSE in order to buy and sell securities on the TWSE.

When a non-ROC holder of our ADSs elects to withdraw and hold our shares represented by our ADSs, such holder of our ADSs will be required to appoint an agent for filing tax returns and making tax payments in the ROC. Such agent will be required to meet the qualifications set by the ROC Ministry of Finance and, upon appointment, will become 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 ROC 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 our shares. We cannot assure you that a withdrawing holder will be able to appoint, and obtain approval for, a tax guarantor in a timely manner.

In addition, under the current ROC law, such withdrawing holder is required to register with the TWSE and appoint a local agent in the ROC 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 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-ROC withdrawing holders of our ADSs would not be able to hold or otherwise subsequently sell our shares on TWSE or otherwise. Appointment of an agent or a tax guarantor might also incur additional costs.

Pursuant to Mainland investors regulations, only qualified domestic institutional investors (the "QDIIs", each a "QDII") or persons that have otherwise obtained the approval from the MOEAIC and registered with the TWSE are permitted to withdraw and hold our shares from a depositary receipt facility. In order to hold our shares, such QDIIs are required to appoint an agent and custodian as required by the Mainland investors regulations. If the aggregate amount of our shares held by any QDII or shares received by any QDII upon a single withdrawal accounts for 10.0% of our total issued and outstanding shares, such QDII must obtain the prior approval from the MOEAIC. We cannot assure you that such approval would be granted.

Restriction on the ability to deposit our shares into our ADR facility may adversely affect the liquidity and price of our ADSs.

The ability to deposit our shares into our ADR facility is restricted by the ROC law. Under the current ROC law, no person or entity, including you and the Company, may deposit our shares into our ADR facility without specific approval of the Financial Supervisory Commission of the ROC, or the FSC, unless:

(1) the Company pays stock dividends on our shares;

(2) the Company makes a free distribution of our shares;

(3) holders of our 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 shares, directly or through the depositary, on the TWSE, and deliver our shares to the custodian for deposit into our ADR facility, or our existing shareholders deliver our shares to the custodian for deposit into our ADR facility.

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

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

The rights of holders of our ADSs to participate in our rights offerings are limited, which could cause dilution to your holdings.

The Company may from time to time distribute rights to its shareholders, including rights to acquire its securities. Under the Deposit Agreement, the depositary will not offer holders of our 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 the registration under the Securities Act. Although the Company may be eligible to take advantage of certain exemptions under the Securities Act available to certain foreign issuers for rights offering, the Company can give no assurances that it will be able to establish an exemption from registration under the Securities Act, and it is under no obligation to file a registration statement for any of these rights. Accordingly, holders of our 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 our ADSs will receive no value for these rights.

Changes in exchanges controls which restrict your ability to convert proceeds received from your ownership of our ADSs may have an adverse effect on the value of your investment.

Under the current ROC law, the depositary, even without obtaining approvals from the Central Bank of the Republic of China (Taiwan) or any other governmental authority or agency of the ROC, may still convert NT dollars into other currencies, including US dollars, for:

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

In addition, the depositary may also convert into NT dollars incoming payments for purchase of common shares for deposit in ADR facility against the creation of additional ADSs. However, 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. We cannot assure you that any approval will be obtained in a timely manner, or at all.

Under the ROC Foreign Exchange Control Law, the Executive Yuan of the ROC 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 assure you that foreign exchange controls or other restrictions will not be introduced in the future.

Item 4. Information on the Company

Overview of the Company

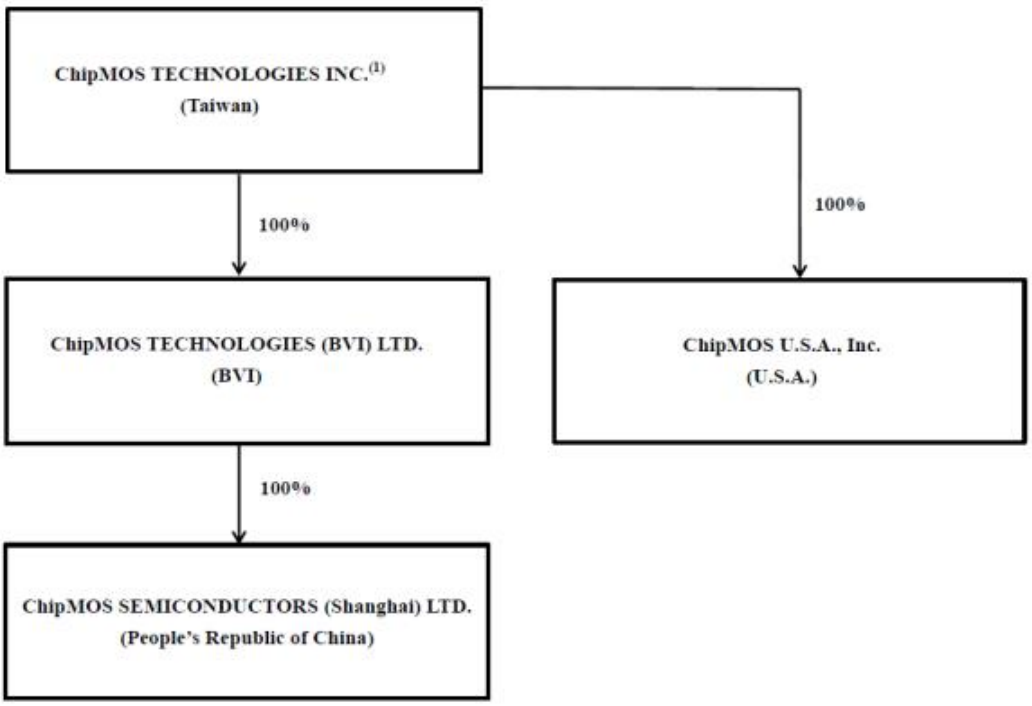
We are one of the leading independent providers of semiconductor assembly and testing services. Specifically, we are one of the leading independent providers of testing and assembly services for LCD, OLED and other display panel driver semiconductors and advanced memory and logic/mixed-signal products in Taiwan. The depth of our engineering expertise and the breadth of our assembly and testing technologies enable us to provide our customers with advanced and comprehensive assembly and testing services. In addition, our geographic presence in Taiwan is attractive to customers wishing to take advantage of the logistical and cost efficiencies stemming from our close proximity to foundries and producers of consumer electronic products in Taiwan. Our production facilities are located in Hsinchu and Tainan, Taiwan.

Our Structure and History

We are a company limited by shares, incorporated on July 28, 1997, under the ROC Company Act, under the name “ChipMOS TECHNOLOGIES INC.” (“ChipMOS Taiwan”), as a joint venture company between Mosel Vitelic Inc. (“Mosel”) and Siliconware Precision Industries Co., Ltd. (“Siliconware Precision”) and with the participation of other investors. Our operations consist of the assembly and testing of semiconductors as well as gold bumping and memory module manufacturing. Our principal place of business is located at No. 1, R&D Road 1, Hsinchu Science Park, Hsinchu, Taiwan, ROC and its phone number is +886-3-577-0055 and our internet website address is “https://www.chipmos.com”. The Company listed and commenced trading on the main board of TWSE on April 11, 2014.

According to the merger agreement, entered between the Company and ChipMOS Bermuda dated January 21, 2016 (the “Merger Agreement”), ChipMOS Bermuda merged with and into the Company, with the Company being the surviving company after the Merger. The transaction was accounted as capital reorganization within the Company and its subsidiaries (the “Group”), please see “Item 5. Operating and Financial Review and Prospects—Recent Acquisitions”. Any common shares of ChipMOS Bermuda issued and outstanding immediately prior to the effective time of the Merger was cancelled and, in exchange, each former holder of such cancelled common shares of ChipMOS Bermuda was entitled to receive, with respect to each such share (i) US$3.71 in cash, without interest, and (ii) 0.9355 ADSs representing 18.71 shares of the Company (each ADS representing 20 new common shares, par value of NT$10 each, to be issued by the Company) in exchange for each of ChipMOS Bermuda’s common share held (the US$3.71 in cash and together with the ADSs, the “Merger Consideration”). The Merger was completed and effective on October 31, 2016. The Company issued 512,405,340 common shares represented by the ADSs and the ADSs were listed on the NASDAQ on November 1, 2016.

The following chart illustrates our corporate structure and our equity interest in each of our principal subsidiaries as of the date of this Annual Report on Form 20-F.



Note:

(1) Under IFRS 10 "Consolidated Financial Statements", we are required to consolidate the financial results of any subsidiaries in which we hold a controlling interest or voting interest in excess of 50% or we have the power to direct or cause the direction of the management and policies, notwithstanding the lack of majority ownership. In 2019, we consolidated the financial results of ChipMOS U.S.A., Inc. ("ChipMOS USA"), and ChipMOS BVI. In March 2020, we consolidated the financial results of ChipMOS SEMICONDUCTORS (Shanghai) LTD. ("ChipMOS Shanghai"), a wholly-owned subsidiary of ChipMOS BVI.

Agreements with Tsinghua Unigroup Ltd.

On November 30, 2016, the Equity Interest Transfer Agreements among ChipMOS BVI, a wholly-owned subsidiary of the Company, and some strategic investors which including Unigroup Guowei, a subsidiary of Tsinghua Unigroup, were executed. Pursuant to the Equity Interest Transfer Agreements, ChipMOS BVI would sell 54.98% equity interests of its wholly-owned subsidiary, Unimos Shanghai, to the strategic investors, and Unigroup Guowei would hold 48% equity interests of Unimos Shanghai, and the other strategic investors, including a limited partnership owned by Unimos Shanghai's employees, would own approximately 6.98% equity interest of Unimos Shanghai. The transaction was completed in March 2017. Unimos Shanghai is no longer the subsidiary of the Company following the completion of equity interests transfer. Also pursuant to the agreement, ChipMOS BVI and the strategic investors agreed to further invest RMB 1,074 million into Unimos Shanghai. The further investment was completed in two tranches, one in July 2017 at RMB 687 million and one in February 2018 at RMB 387 million. On December 16, 2019, Unigroup Guowei and one of the strategic investor sold and transferred all equity interests of Unimos Shanghai to Yangtze Memory, which holds 50% equity interests of Unimos Shanghai after completed transaction. On May 11, 2020, one of the strategic investor sold and transferred all equity interests of Unimos Shanghai to Yangtze Memory, which holds 50.94% equity interests of Unimos Shanghai after completed transaction.

Our Principal Consolidated Subsidiaries

Below is a description of our principal consolidated subsidiaries:

ChipMOS TECHNOLOGIES (BVI) LTD., or formerly known as MODERN MIND TECHNOLOGY LIMITED ChipMOS BVI was incorporated in the British Virgin Islands in January 2002.

ChipMOS SEMICONDUCTORS (Shanghai) LTD. ChipMOS Shanghai was incorporated in Mainland China in March 2020, which is a wholly-owned subsidiary of ChipMOS BVI. It primarily engaged in providing marketing of semiconductors and electronic related produces, for its parent company and affiliates, throughout Mainland China.

ChipMOS U.S.A., Inc. ChipMOS USA was incorporated in the United States of America in October 1999. It is primarily engaged in providing marketing of semiconductors and electronic related produces, for its parent company and affiliates, throughout the United States of America. ChipMOS USA began generating revenue in 2001. As of December 31, 2021, ChipMOS Taiwan owned 100% of the outstanding shares of ChipMOS USA.

Industry Background

We provide a broad range of back-end assembly and testing services. Testing services include engineering test, wafer probing and final test of memory and logic/mixed-signal semiconductors. We also offer a broad selection of leadframe- and organic substrate-based package assembly services for memory and logic/mixed-signal semiconductors. Our advanced leadframe-based packages include thin small outline packages, or TSOPs, and our advanced organic substrate-based packages include fine-pitch ball grid array packages ("fine-pitch BGA"). In addition, we provide gold bumping, reel to reel assembly and testing services for LCD, OLED and other display panel driver semiconductors by employing COF and COG technologies.

Semiconductors tested and assembled by us are used in personal computers, graphics applications such as game consoles, communications equipment, mobile products, such as cellular handsets, tablets, consumer electronic products, automotive/industry and display applications such as display panels. In 2021, 21.5% of our revenue was derived from testing services for memory and logic/mixed-signal semiconductors, 29.1% from assembly services for memory and logic/mixed-signal semiconductors, 30.0% from LCD, OLED and other display panel driver semiconductor assembly and testing services and 19.4% from bumping services for semiconductors, respectively.

Semiconductor Industry Trends

Growth in the semiconductor industry is largely driven by end-user demand for consumer electronics, communications equipment and computers, for which semiconductors are critical components. The worldwide semiconductor industry has experienced peaks and troughs over the last decade, with a severe downturn at the second half of 2018. Beginning in the fourth quarter of 2018, the semiconductor industry commenced another downturn that increased in unprecedented severity into the first half of 2019. The overall semiconductor industry commenced to recover from the downturn in the second quarter of 2019. However, as the COVID-19 has spread across the world wide since 2020, many countries have taken extreme measures to contain the transmission, including total or partial lockdown of the infected areas, travel bans, closures of factories, among others, which disrupted the semiconductor supply chain and changed people's lifestyle and end product demand. For example, work from home and learning from home, led the cloud storage and DDIC demand for TV/NB became stronger. Launch in new 5G smart phone also consumed multiple semiconductor components, such as PMIC, CIS, and TDDI, which tightened the capacity of 8" wafer foundry in 2021. And semiconductor for automotive is also in very serious shortage up to date. Recently, semiconductor capacity, including wafer foundry, raw material supply and OSAT, are still shortage in 2022.

Selected Key Semiconductor Markets

While a recovery trend in end-user demand for new and improved electronic products and applications continues, various sectors of the semiconductor industry are in turn expected to benefit from a resumption in growth. These sectors include the memory semiconductor market for industrial, mobile and automotive applications, and the LCD, OLED and other display panel driver semiconductor market.

Memory Semiconductor Market

The potential for memory market growth is linked to anticipated memory content increases in consumer electronics, data center, wireless base-station, PC and smartphone applications due to updated system requirements (such as 5G), increasing use of storage, graphics in gaming and other applications. The memory market is dominated by two segments-DRAM and flash memory. Potential growth in the DRAM and NAND Flash market is expected to be driven by continued growth in both the commodity and niche DRAM market, as well as growth opportunities in mobile DRAM as memory requirements significantly increase for mobile applications and storage requirement for data center application. Flash memory market potential growth is expected to be driven by increasing memory requirements for cellular handsets, digital cameras, digital audio/video, server, wireless base-station, gaming for COVID-19 pandemic and other mobile applications, and new application demand of NOR flash for automotive/industry, OLED panel and touch with display driver integration (TDDI).

LCD, OLED and Other Display panel Driver Semiconductor Market

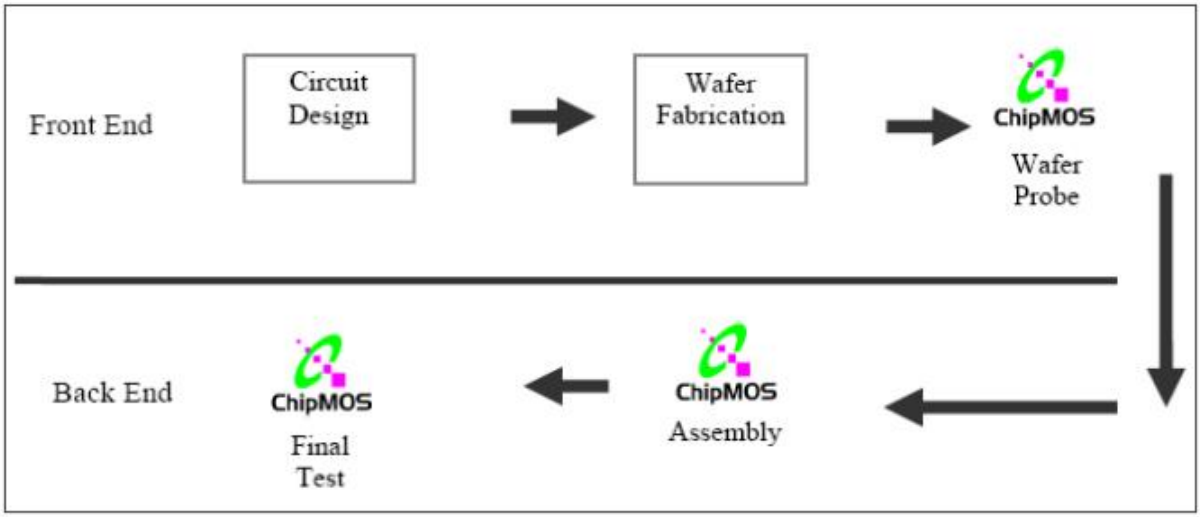
Display panels are used in applications such as PC monitors, notebook computers, tables, television sets, cellular handsets and digital cameras. The end-user demand for LCD, OLED and other display panel driver semiconductors tends to very over time. From the second half of 2017, increasing penetration rate of UHD TVs, 4K TVs stable strong demand and 8K TVs emerging resulted in increased demand for COF quantities pre TV and to high utilization level of COF assembly. However, some increasing demand of COF for tablet and Notebook panel recently by learning from home and work from home for COVID-19 outbreak since the second quarter of 2020. Demand for middle and large panel is very strong for work from home, but supply is limited due to the capacity tightened of 8" wafer foundry in 2021. Regarding the small panel application, an integrated driver IC solution, TDDI, which was emerging for use in smart phones since second half of 2018, becomes main stream of smart phone panel in 2021. And wearable application drives OLED DDIC growth in the second half of 2021.

Logic/Mixed-Signal Semiconductor Market

The communications market is one of the main drivers of potential growth in the semiconductor industry. Logic/mixed-signal semiconductors, which are chips with analog functionality covering more than half of the chip area, are largely used in the communications market. The increasing use of digital technology in communications equipment requires chips with both digital and analog functionality for applications such as modems, network routers, switches, cable set-top boxes and cellular handsets. As the size and cost of cellular handsets and other communications-related devices have decreased, components have increased in complexity. Logic/mixed-signal semiconductors, such as LCD controller, power devices, fingerprint sensors and MEMS products, TV scaler and DVD controllers, are also used in consumer electronic products.

Overview of the Semiconductor Manufacturing Process

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



Process	Description
Circuit Design	The design of a semiconductor is developed by laying out circuit patterns and interconnections.
Wafer Fabrication	Wafer fabrication begins with the generation of a photomask, a photographic negative onto which a circuit design pattern is etched or transferred by an electron beam or laser beam writer. Each completed wafer contains many fabricated chips, each known as a die.
Wafer Probe	Each individual die is then electrically tested, or probed, for defects. Dies that fail this test are discarded, or, in some cases, salvaged using laser repair.

Process	Description
Assembly	The assembly of semiconductors serves to protect the die, facilitates its integration into electronic systems and enables the dissipation of heat. The process begins with the dicing of the wafers into chips. Each die is affixed to a leadframe-based or organic substrate-based substrate. Then, electrical connections are formed, in many cases by connecting the terminals on the die to the inner leads of the package using fine metal wires. Finally, each chip is encapsulated for protection, usually in a molded epoxy enclosure.
Final Test	Assembled semiconductors are tested to ensure that the device meets performance specifications. Testing takes place on specialized equipment using software customized for each application. For memory semiconductors, this process also includes “burn-in” testing to screen out defective devices by applying very high temperatures and voltages onto the memory device.

Outsourcing Trends in Semiconductor Manufacturing

Historically, integrated device manufacturers (“IDMs”), designed, manufactured, tested and assembled semiconductors primarily at their own facilities. In recent years, there has been a trend in the industry to outsource various segments of stages in the manufacturing process to reduce the high fixed costs resulting from the increasingly complex manufacturing process. Virtually every significant stage of the manufacturing process can be outsourced. The independent semiconductor manufacturing services market currently consists of wafer fabrication and probing services and semiconductor assembly and testing services. Most of the world’s major IDMs now use some independent semiconductor manufacturing services to maintain a strategic mix of internal and external manufacturing capacity. Many of these IDMs are continuously significantly reducing their investments in new semiconductor assembly and testing facilities.

The availability of technologically advanced independent semiconductor manufacturing services has also enabled the growth of “fabless” semiconductor companies that focus exclusively on semiconductor design and marketing and outsource their fabrication, assembly and testing requirements to independent companies.

We believe the outsourcing of semiconductor manufacturing services, and in particular of assembly and testing services, will increase for many reasons, including the following:

Significant Capital Expenditure Requirements. Driven by increasingly sophisticated technological requirements, wafer fabrication, assembly and testing processes have become highly complex, requiring substantial investment in specialized equipment and facilities and sophisticated engineering and manufacturing expertise. In addition, product life cycles have been shortened magnifying the need to continuously upgrade or replace manufacturing, assembly and testing equipment to accommodate new products. As a result, new investments in in-house fabrication, assembly and testing facilities are becoming less desirable for IDMs because of the high investment costs, as well as difficulties in achieving sufficient economies of scale and utilization rates to be competitive with the independent service providers. On the contrary, independent foundry, assembly and testing companies are able to realize the benefits of specialization and achieve economies of scale by providing services to a large customer base across a wide range of products. This enables them to reduce costs and shorten production cycles through high capacity utilization and process expertise.

Increasing Focus on Core Competencies. As the costs of semiconductor manufacturing facilities increase, semiconductor companies are expected to further outsource their wafer fabrication, assembly and testing requirements to focus their resources on core competencies, such as semiconductor design and marketing.

Time-to-Market Pressure. Increasingly short product life cycles have amplified time-to-market pressure for semiconductor companies, leading them to rely increasingly on independent companies as a key source for effective wafer fabrication, assembly and testing services.

Semiconductor Assembly and Testing Services Industry

Growth in the semiconductor assembly and testing services industry is driven by increased outsourcing of the various stages of the semiconductor manufacturing process by IDMs and fabless semiconductor companies.

The Semiconductor Industry and Conditions of Outsourcing in Taiwan and Mainland China

Taiwan is one of the world's leading locations for outsourced semiconductor manufacturing. The semiconductor industry supply chain in Taiwan has developed such that the various stages of the semiconductor manufacturing process have been disaggregated, thus allowing for specialization. The disaggregation of the semiconductor manufacturing process in Taiwan permits these semiconductor manufacturing service providers to focus on particular parts of the production process, develop economies of scale, maintain higher capacity utilization rates and remain flexible in responding to customer needs by lowering time-to-market pressure faced by semiconductor companies. There are several leading service providers in Taiwan, each of which offers substantial capacity, high-quality manufacturing, leading semiconductor wafer fabrication, test, assembly and process technologies, and a full range of services. These service providers have access to an educated labor pool and a large number of engineers suitable for sophisticated manufacturing industries. As a result, many of the world's leading semiconductor companies outsource some or all of their semiconductor manufacturing needs to Taiwan's semiconductor manufacturing service providers and take advantage of the close proximity among facilities in the supply chain. In addition, companies located in Taiwan are very active in the design and manufacture of electronic systems, which has created significant local demand for semiconductor devices.

A few years ago, Mainland China had emerged as an attractive location for outsourced semiconductor manufacturing. Companies could take advantage of strongly supports by Mainland China government to accelerate the development of the semiconductor industry and a large domestic market. These factors had driven increased relocation of much of the electronics industry manufacturing and supply chain to Mainland China. But according to the economics uncertainty caused by the trade tensions, the related investment risk in China is increasing. An increasing number of global electronic systems manufacturers and contract manufacturers are relocating or have relocated production facilities away from Mainland China.

Our Strategy

Our goal is to reinforce our position as a leading independent provider of semiconductor assembly and testing services, concentrating principally on memory, logic/mixed-signal and LCD, OLED and other display panel driver semiconductors. The principal components of our business strategy are set forth below.

Focus on Providing Our Services to Potential Growth Segments of the Semiconductor Industry.

We intend to continue our focus on developing and providing advanced assembly and testing services for potential growth segments of the semiconductor industry, such as memory, logic/mixed-signal, MEMS, LCD, OLED and other display panel driver semiconductors and bumping services. We believe that our investments in equipment and research and development in some of these areas allow us to offer a service differentiated from that of our competition. In order to benefit from the expected resumption of growth in these segments, we intend to continue to invest in capacity to meet the assembly and testing requirements of these key semiconductor market segments.

Continue to Invest in the Research and Development of Advanced Assembly and Testing Technologies.

Critical to our business growth is the continuation to expand our capabilities in testing and assembly and integrate wafer bumping and assembly core technologies to provide turn-key total solution service to our customers. We typically focus on advanced technologies that consist of greater potentials to generate higher margins. For example, we conducted new product introductions and on an on-going basis continue to expand our capabilities in fine-pitch wafer bumping, multi-chip package ("MCP"), flip chip package, and high speed assembly and testing of fine-pitch TDDI and 12" COFs. We have also introduced low cost metal composite bump ("MCB") products based on our proprietary Cu plating technology to service display panel market and expand offerings to other business regions. We continue to maintain close working relationships with local and overseas research institutions and universities to keep abreast with leading edge technologies and broaden the scope of applications.

In 2022, we focus our research and development efforts in the following areas:

- Developing 2P2M process development for Cu RDL structure.
- Shrink copper pillar pitch to 45um for micro bump solution.
- Implement new high conductivity thermal conductive resin for COF package solution.
- Develop ultra fine pitch (UFP) COF assembly and testing technology.

- Enhance Pb free ball level capability (increase thermal cycle lifetime >1000 cycles).
- Low loss substrate development for optimized RLC match.

In 2021, we spent approximately 4.2% of our revenue on research and development. We will continue to invest our resources to recruit and retain experienced research and development personnel. As of March 31, 2022, our research and development team comprised 661 persons.

Build on Our Strong Presence in Taiwan and Strong Industrial Position Outside Taiwan.

We intend to build on our strong presence in key centers of semiconductor and electronics manufacturing to grow our business. Currently, most of our operations are in Taiwan, one of the world's leading locations for outsourced semiconductor manufacturing. This presence provides us with several advantages. Firstly, our proximity to other semiconductor companies is attractive to customers who wish to outsource various stages of the semiconductor manufacturing process. Secondly, our proximity to many of our suppliers, customers and the end-users of our customers' products enables us to be involved in the early stages of the semiconductor design process, enhances our ability to quickly respond to our customers' changing requirements and shortens our customers' time-to-market. Thirdly, we have access to an educated labor pool and a large number of engineers who are able to work closely with our customers and other providers of semiconductor manufacturing services.

Depending on customer's demands, market conditions and other relevant considerations, we may from time to time look into other opportunities to expand our operations outside of Taiwan.

Expand Our Offering of Vertically Integrated Services.

We believe that one of our competitive strengths is our ability to provide vertically integrated services to our customers. Vertically integrated services consist of the integrated testing, assembly and direct shipment of semiconductors to end-users designated by our customers. Providing vertically integrated services enables us to shorten lead times for our customers. As time-to-market and cost increasingly become sources of competitive advantage for our customers, they increasingly value our ability to provide them with comprehensive back-end services.

We are able to offer vertically integrated services for a broad range of products, including memory, logic/mixed-signal and LCD, OLED and other display panel driver semiconductors. These services offerings include complementary technologies, products and services as well as additional capacity. We believe that these will continue to enhance our own development and expansion efforts into new and potential growth markets. We intend to establish new alliances with leading companies and, if suitable opportunities arise, engage in merger and acquisition activities that will further expand the services we can provide.

Focus on Increasing Sales through Long-Term Agreements with Key Customers as well as Business with Smaller Customers.

From time to time, we strategically agree to commit a portion of our assembly and testing capacity to certain of our customers. We intend to continue focus on increasing sales to key customers through long-term capacity agreements. The customers with which we entered long-term agreements include a reputable memory customer based in the U.S. See "—Customers" below for a more detailed discussion of these long-term agreements.

Global market and economic conditions have been unprecedented and challenging with tight credit conditions and recession in most major economies since 2008. Since the fourth quarter of 2021, a new long term capacity secure agreement with our customer about high end wafer test for OLED and other display panel driver demand in 2022 was settled to reduce our investment risk. We also resumed our focus on our business with smaller customers or customers who do not place orders on a regular basis. We believe that the dual focused strategy will assist us to be better prepared for the current economic volatility and ensure maximum utilization rate of our capacity and help us to develop closer relationships with all types of our customers.

Principal Products and Services

The following table presents, for the periods shown, revenue by service segment as a percentage of our revenue.

	Year ended December 31,		
	2019	2020	2021
Testing	20.9%	21.7%	21.5%
Assembly	25.3	26.1	29.1
LCD, OLED and other display panel driver semiconductor assembly and testing revenue	34.1	30.5	30.0
Bumping	19.7	21.7	19.4
Total revenue	100.0%	100.0%	100.0%

Memory and Logic/Mixed-Signal Semiconductors

Testing

We provide testing services for memory and logic/mixed-signal semiconductors:

Memory. We provide testing services for huge amount of varieties of memory semiconductors, such as SRAM, DRAM and Flash memory. To speed up the time-consuming process of memory product testing, we provide parallel test, which includes the completion of a tested wafer in one touchdown (up to 2,000 plus DUTs testing simultaneously). Wafer type includes Aluminum PAD, RDL PAD, Cu Pillar, WLCSP and prober test temperature between -55°~150° and provide 30MHz ~ 1066 MHz test speed for DRAM product, 50MHz ~ 400 MHz test speed for FLASH product. The memory semiconductors we tested were applying primarily in desktop computers, laptop, tablet computers, handheld consumer electronic, devices and wireless communication devices.

Logic/Mixed-Signal. We conduct tests on a wide variety of logic/mixed-signal semiconductors, with lead counts ranging from the single digits to over 1024 and data rate of up to 16Gbps. The semiconductors we test include high-end audio/video codec, networking/communications, MCU, LCD related, MEMS related, DDR related and automotive electronics used for home entertainment/media center, personal computer applications, network/communication, mobile smart devices and cars. We also test a variety of application specific integrated circuits (“ASICs”), for applications such as FHD/UHD/8K LCD TV with AI functions, Smartphone, Tablet PC and Cars etc.

The following is a description of our pre-assembly testing services:

Engineering Testing. We provide engineering testing services, including software program development, electrical design validation, reliability and failure analysis.

- *Software Program Development* Design and test engineers develop a customized software program and related hardware to test semiconductors on advanced test equipment. A customized software program is required to test the conformity of each particular semiconductor to its particular function and specification.
- *Electrical Design Validation.* A prototype of the designed semiconductor is submitted to electrical tests using advanced test equipment, customized software programs and related hardware. These tests assess whether the test result of the prototype semiconductor complies with the designed requirements using 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 its intended applications. Reliability testing may include operating-life evaluation, during which the semiconductor is subjected to high temperature and voltage tests.
- *Failure Analysis.* If the prototype semiconductor does not perform to specifications during either the electrical validation or reliability analysis process, failure analysis is performed to determine the reasons for the failure. As part of this analysis, the prototype semiconductor may be subjected to a variety of tests, including electron beam probing and electrical testing.

Wafer Probing. Wafer probing is a processing stage proceeding to the assembly of semiconductors and which involves visual inspection and electrical testing to ensure the processed wafers meets our customers’ specifications. Tests are conducted using specialized equipment with software customized for each application in different temperature conditions ranging from -55 degrees Celsius to 200 degrees Celsius. Wafer probing employs sophisticated design and manufacturing technologies to connect the terminals of each chip for testing. Defect chips are marked on the surface or memorized in an electronic file, known as a mapping file, to the following facilitate subsequent process.

Laser Repairing. This is a unique process in testing operation for special SOC memory products. In laser repairing, specific poly or metal fuses are blown after wafer probing to enable a spare row or column of a memory unit in SOC the replacement of the defective memory cell.

After assembly, we perform the following testing services:

Burn-In Testing. This process screens out unreliable products using high temperature, high voltage and prolonged stresses environment to ensure that finished products will survive a long period of end-user service. This process is used only for memory products. This process needs customized Burn-In board.

Top Marking. By using laser marker, the marking content were according to our customers' specification, including the logo, part number, date code and lot number.

Final Testing. Assembled semiconductors are tested to ensure that the devices meet performance specifications. Tests are conducted using specialized equipment with software customized for each application in different temperature conditions ranging from -40 degrees Celsius to 175 degrees Celsius.

Final Inspection and Packing. Final inspection involves visual or auto-inspection of the devices to check any bent leads, ball damage, inaccurate markings or other package defects. Packing involves dry packing, package-in-tray, package-in-tube and tape and reel. According to package level, Dry packing involves heating semiconductors in a tray at 125 degrees Celsius for about four to six hours to remove the moisture before the semiconductors are vacuum-sealed in an aluminum bag. Package-in-tube involves packing the semiconductors in anti-static tubes for shipment. Tape and reel pack involves transferring semiconductors from a tray or tube onto an anti-static embossed tape and rolling the tape onto a reel for shipment to customers.

Assembly

Our assembly services generally involve the following steps:

Wafer Lapping	The wafers are ground to their required thickness.
Die Saw	Wafers are cut into individual dies, or chips, in preparation for the die-attach process.
Die Attach	Each individual die is attached to the leadframe or organic substrate.
Wire Bonding	Using gold or silver wires, to connect the I/O pads on the die to the inner lead of leadframe or substrate.
Flip Chip Bonding	Using solder bumps or Cu pillar bumps on die, to connect the leadframe or substrate pad via soldering reflow.
Molding	The die and wires are encapsulated to provide physical support and protection.
Marking	Each individual package is marked to provide product identification.
Dejunking and Trimming	Mold flash is removed from between the lead shoulders through dejunking, and the dambar is cut during the trimming process.
Electrical Plating	A solderable coating is added to the package leads to prevent oxidization and to keep solder wettability of the package leads.
Ball Mount and Reflow	Each electrode pad of the substrate is first printed with flux, after which solder balls are mounted, heated and attached to the electrode pad of the substrate through a reflow oven.
Forming/Singulation	Forming involves the proper configuration of the device packages leads, and singulation separates the packages from each other.

We offer a broad range of package formats designed to provide our customers with a broad array of assembly services. The assembly services we offer customers are leadframe-based packages, which include thin small outline packages, and organic substrate-based packages, including fine-pitch BGA.

The differentiating characteristics of these packages include:

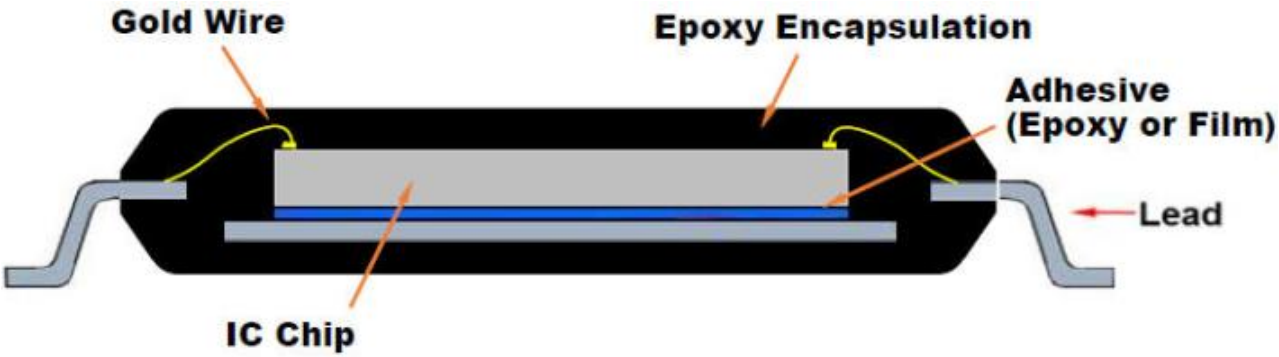
- the size of the package;
- the number of electrical connections which the package can support;
- the electrical performance and requirements of the package; and
- the heat dissipation requirements of the package.

As new applications for semiconductor devices require smaller components, the size of packages has also decreased. In leading-edge packages, the size of the package is reduced to just slightly larger than the size of the individual chip itself in a process known as chip scale packaging.

As semiconductor devices increase in complexity, the number of electrical connections required also increases. Leadframe-based products have electrical connections from the semiconductor device to the electronic product through leads on the perimeter of the package. Organic substrate-based products have solder balls on the bottom of the package, which create the electrical connections with the product and can support large numbers of electrical connections.

Leadframe-Based Packages. These are generally considered the most widely used package category. Each package consists of a semiconductor chip encapsulated in a plastic molding compound with metal leads on the perimeter. This design has evolved from a design plugging the leads into holes on the circuit board to a design soldering the leads to the surface of the circuit board.

The following diagram presents the basic components of a standard leadframe-based package for memory semiconductors:



To address the market for miniaturization of portable electronic products, we are currently developing and will continue to develop increasingly smaller versions of leadframe-based packages to keep pace with continually shrinking semiconductor device sizes. Our advanced leadframe-based packages generally are thinner and smaller, have more leads and have advanced thermal and electrical characteristics when compared to traditional packages. As a result of our continual product development, we offer leadframe-based packages with a wide range of lead counts and sizes to satisfy our customers' requirements.

The following table presents our principal leadframe-based packages, including the number of leads in each package, commonly known as lead-count, a description of each package and the end-user applications of each package.

Package	Lead-count	Description	End-User Applications
Thin Small Outline Package I (TSOP I)	48-56	Designed for high volume production of low lead-count memory devices, including flash memory, SRAM and MROM	Notebook computers, personal computers, still and video cameras and standard connections for peripherals for computers
Thin Small Outline Package II (TSOP II)	44-86	Designed for memory devices, including flash memory, SRAM, SDRAM and DDR DRAM	Disk drives, recordable optical disk drives, audio and video products, consumer electronics, communication products

Package	Lead-count	Description	End-User Applications
Quad Flat No Lead (QFN)	8-132	Thermal enhanced quad flat no lead package providing small footprint (chip scale), light weight with good thermal and electrical performance	Wireless communication products, notebook computers, PDAs, consumer electronics
Low-Profile Quad Flat Package (LQFP)	48	Low-profile and light weight package designed for ASICs, digital signal processors, microprocessors/ controllers, graphics processors, gate arrays, SSRAM, SDRAM, personal computer chipsets and mixed-signal devices	Wireless communication products, notebook computers, digital cameras, cordless/radio frequency devices
Small Outline Package (SOP)	8	Designed for low lead-count memory and logic semiconductors, including SRAM and micro-controller units	Personal computers, consumer electronics, audio and video products, communication products
Multi-Chip Package (TSOP)	44-86	Our patented design for memory devices, including SRAM, DRAM and SDRAM	Notebook computers, personal computers, disk drives, audio and video products, consumer products, communication products
Flip Chip Quad Flat No Lead (FCQFN)	6-24	Thermal enhanced quad flat no lead package providing small footprint (chip scale), light weight with good thermal and electrical performance Flip chip process is designed for better electrical performance compared to wire bonding process	Wireless communication products, notebook computers, PDAs, consumer electronics

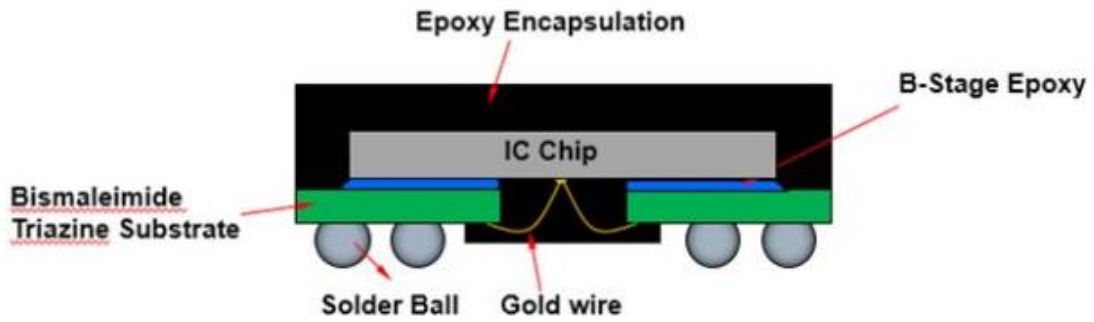
Organic Substrate-based Packages. As the number of leads surrounding a traditional leadframe-based package increases, the leads must be placed closer together to reduce the size of the package. The close proximity of one lead to another can create electrical shorting problems and requires the development of increasingly sophisticated and expensive techniques to accommodate the high number of leads on the circuit boards.

The BGA format solves this problem by effectively creating external terminals on the bottom of the package in the form of small bumps or balls. These balls are evenly distributed across the entire bottom surface of the package, allowing greater pitch between the individual terminals. The ball grid array configuration enables high-pin count devices to be manufactured less expensively with less delicate handling at installation.

Our organic substrate-based packages employ a fine-pitch BGA design, which uses a plastic or tape laminate rather than a leadframe and places the electrical connections, or leads, on the bottom of the package rather than around the perimeter. The fine-pitch BGA format was developed to address the need for the smaller footprints required by advanced memory devices. Benefits of ball grid array assembly over leadframe-based assembly include:

- smaller size;
- smaller footprint on a printed circuit board;
- better electrical signal integrity; and
- easier attachment to a printed circuit board.

The following diagram presents the basic component parts of a fine-pitch BGA package:



The following table presents the ball-count, description and end-user applications of organic substrate-based packages we currently assemble:

Package	Connections	Description	End-User Applications
Mini BGA	24-400	Low-cost and space-saving assembly designed for low input/output count, suitable for semiconductors that require a smaller package size than standard BGA	Memory, analog, flash memory, ASICs, radio frequency devices, personal digital assistants, cellular handsets, communication products, notebook computers, wireless systems
Fine-Pitch BGA	54-126	Our patented design for DRAM products that require high performance and chip scale package (CSP)	Notebook computers, cellular handsets, global positioning systems, personal digital assistants, wireless systems
Very Thin Fine-Pitch BGA	48-176	Similar structure of Mini BGA package with thinner and finer ball pitch that is designed for use in a wide variety of applications requiring small size, high reliability and low unit cost	Handheld devices, notebook computers, disk drives, wireless and mobile communication products
Land Grid Array (LGA)	8-52	Thinner and lighter assembly designed essential to standard BGA without solder balls, suitable for applications that require high electrical performance	Disk drives, memory controllers, wireless, mobile communication products
Multi-Chip BGA	48-153	Designed for assembly of two or more memory chips (to increase memory density) or combinations of memory and logic chips in one BGA package	Notebook computers, digital cameras, personal digital assistants, global positioning systems, sub-notebooks, board processors, wireless systems
Stacked-Chip BGA	24-345	Designed for assembly of two or more memory chips or logic and memory chips in one CSP, reducing the space required for memory chips	Cellular handsets, digital cameras, personal digital assistants, wireless systems, notebook computers, global positioning systems
Flip Chip Chip-scale Package (FCCSP)	16-1500+	Better IC protection and solder joint reliability compared to direct chip attach (DCA) and chip on board (COB)	Memory, logic, microprocessor, application processor (AP), baseband (BB), solid state device, radio frequency (RF)

Package	Connections	Description	End-User Applications
Multi-Chip Hybrid Package (FC+WB)	153-345	Designed for assembly of two or more memory chips or combinations of memory and logic chips in one BGA package with both of flip chip and wire bonding	Embedded Multi Media Card (eMMC), BGA SSD
Chip on Wafer (CoW)	5-30	Integrated two different functional chips to a closer form into a compact package. Low-cost solution compared to through-silicon via (TSV)	Integrated MEMS
Land Grid Array (LGA) for FPS (finger Print Sensor)	20-52	Very thin clearance (50um) between chip & compound hard color coating with scratch resistance for protection and appearance matching of mobile devices	Security protection for mobile devices, home, notebook computer, etc.
Wafer Level Chip Scale Package (WLCSP)	6-125	WLCSP package size is almost the same as die size. Simple assembly process flow, low cost. Small package suitable to apply on hand-held 3C electronic products	Electronic Compass, audio converter, nor flash product, power control, sensor magnetometer, MEMS magnetometer, CMOS Image Sensor controller, Laser diode driver, power manager IC (PMIC)

Wafer Level CSP

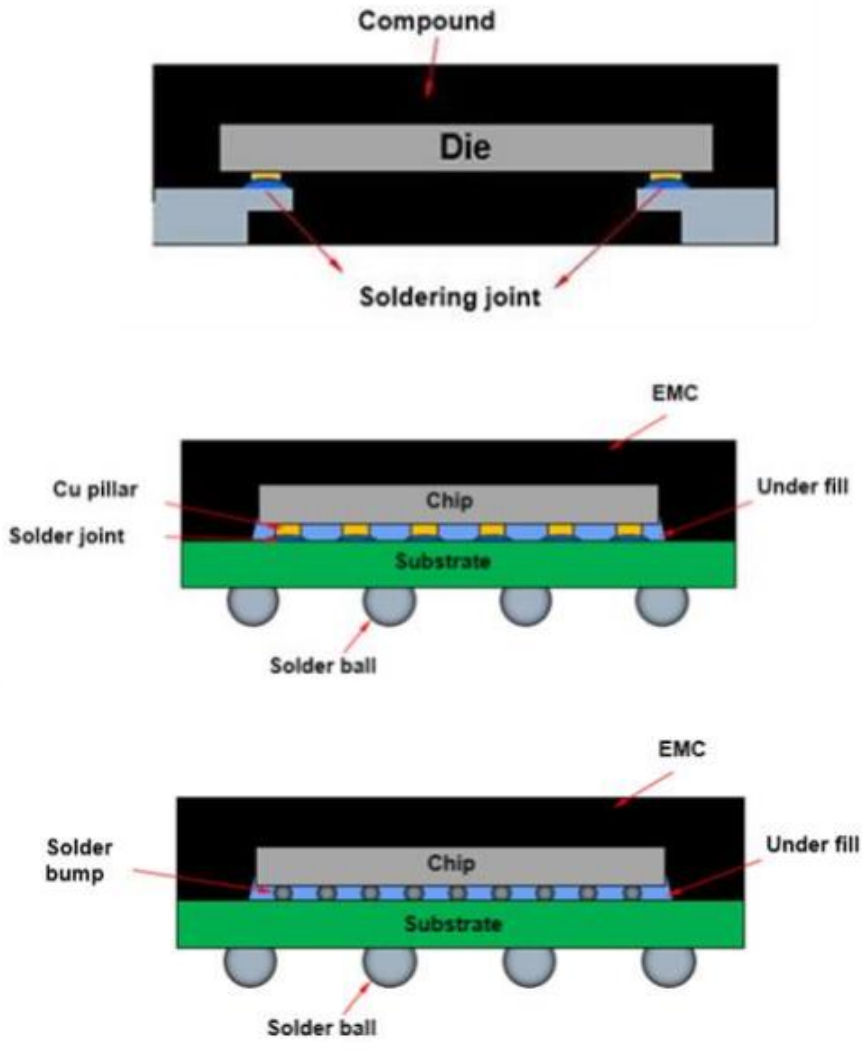
Wafer-level CSP (WLCSP) is the technology of packaging an integrated circuit at wafer level. WLCSP is essentially a true chip scale package (CSP) technology, since the resulting package is practically of the same size as the die. WLCSP has the ability to enable true integration of wafer fab, packaging, test, and burn-in at wafer level in order to streamline the manufacturing process undergone by a device start from silicon wafer to customer shipment.

Most other kinds of packaging do wafer dicing first, and then puts the individual die in a plastic package and attaches the solder bumps. WLCSP involves the RDL, wafer solder bumping, while still in the wafer, and then wafer dicing. Benefits of WLCSP compare to general CSP package assembly include:

- ultimate smaller package size;
- smaller footprint on a printed circuit board;
- very short circuit connection; and
- cost effective packaging solution for small ICs.

Package	Connections	Description	End-User Applications
WLCSP	4-90	Very small package size (identical to die size), suitable for the low pin count and require the small package size application	Memory, ASICs, PMIC, MEMS devices, controllers, for mobile phone, tablet, ultra book computer and wearable product

FC CSP



Flip-chip chip scale package (FC CSP) construction utilizes the flip chip bumping (with solder bump or Cu pillar bump) interconnection technology to replace the standard wire-bond interconnect. It allows for a smaller form factor due to wire loop reduction and area array bumping. FC CSP includes the substrate or leadframe type solution making an attractive option for advanced CSP application when electrical performance is a critical factor.

- Excellent electrical performance, very low interconnect parasitics and inductance compare to wirebond type.
- High electrical current endurance (Cu pillar bump), ideal for high power and high speed logic solution.
- High electrical performance (Cu pillar bump), ideal for lower return loss and higher insertion loss.
- Reduce Bump Pitch and die size (Cu pillar bump vs. solder bump), ideal for increasing gross die/wafer.
- Smaller package form factor by reducing the wire loop height and wire span compared to conventional wirebond package.

Package	Connections	Description	End-User Applications
FC CSP	8-1288	Superior electrical performance, smaller form factor	Power device, RF, High speed Logic device, wireless, memory or portable application

Display Driver Semiconductors and Gold MCB Bumping

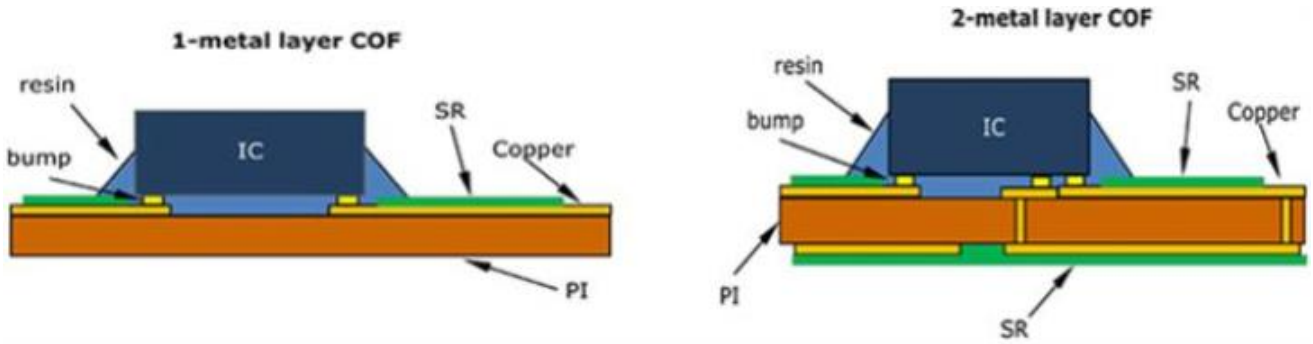
We also offer assembly and testing services for display driver semiconductors. We employ COF and COG technologies for testing and assembling display driver semiconductors. In addition, we offer gold bumping and metal composite bump services to our customers.

Chip-on-Film (COF) Technology

COF technology provides several additional advantages. For example, COF is able to meet the size, weight and higher resolution requirements in electronic products, such as display panels. This is because of its structural design, including an adhesive-free two-layer tape that is highly flexible, bending strength and its capacity to receive finer patterning pitch.

COF package has been using for large-size and high-resolution panel display, especially on TFT-LCD and OLED TV set and NB as well. In recent years, there has been an observable trend with which the average inner lead pitch of COF package went down to 23um with more than 50% of market demand. High thermal dissipation packaging technology is available for mass production. And dual IC with high thermal dissipation COF packaging technology is ready for 8K TV market. 18um/16um inner lead pitch 2-metal layer COF package is in development for coming AR/VR gear requirement. And we can test display driver semiconductors with frequency up to 4Gbps and 6.5Gbps to fulfill high speed data rate requirement. For automotive application, low temperature COF package testing technology is developed.

The following diagram presents the basic components of 1-metal layer COF and 2-metal layer COF:



The COF process involves the following steps:

Chip Probing	Screen out the defect chips which fail to meet the device spec.
Wafer Lapping/Polish	Wafers are grounded or with polish to their required thickness.
Laser Grooving	Application in wafer within Low-K material to reduce chipping of chips during dicing process.
Die Saw	Wafers are cut into individual dies, or chips, in preparation for inner lead bonding process.
Inner Lead Bonding	An inner lead bonding machine connects the chip to the printed circuit tape.
Potting	An underfill process to fill resin to protect the inner lead and chip.
Potting Cure	The potting cure process matures the resin used during the potting oven with high temperatures.
Marking	A laser marker is used to provide product identification.
Final Testing	To verify device spec. within electrical testing after assembly process.
Taping	To attach heat sink/spreader or stiffener material onto COF package.
Inspection and Packing	Each individual die with tape is visually or auto inspected for defects. The dies are packed within a reel into an aluminum bag after completion of the inspection process.

Chip-on-Glass (COG) Technology

COG technology is an electronic assembly technology that is used in assembling display driver semiconductors including TV/monitor, mobile and wearable products. Compared to the traditional bonding process for COF, the new COG technology requires lower bonding temperature. In addition, the COG technology reduces assembly cost as it does not use tapes for interconnection between the LCD, OLED panel and the printed circuit board. The major application of COG products is on TFT-LCD and AMOLED display of smart phone and automotive market, it integrates source, gate driver of display driver IC (DDIC) and TDDI or timing Controller IC into one chip, so the output channel is higher than COF products. For the market trend of thinner smartphone, 150um in IC thickness is released for mass production and much thinner IC thickness is in development.

The COG assembly process involves the following steps:

Chip Probing	To screen out the defect chips which fail to meet the device spec.
Wafer Lapping/Polish	Wafers are ground or with polished to their required thickness.
Laser Marking	A laser mark is applied on IC backside in wafer form to provide product traceability.
Laser Grooving	Application in wafer within Low-K material to reduce chipping of chips during dicing process.
Die Saw	Wafers are cut into individual dies, or chips, in preparation for the pick and place process.
Auto Optical Inspection	Process of wafer inspection is detecting defect to separate chips at pick and place station.
Pick and Place	Each individual die is picked and placed into a chip tray.
Inspection and Packing	Each individual die in a tray is visually or auto-inspected for defects. The dies are packed within a tray into an aluminum bag after completion of the inspection process.

Bumping

We also offer bumping services to our customers.

Based on the major product portfolio (judged by internal metal composition), we provide:

- Gold Family (Au bump, Au metal composite bump and Au RDL)

  Gold bumping technology, which is in high demand for LCD driver ICs. This and stronger TDDI demand resulted in higher utilization levels in 2019. In 2020 to date, continued growth has been led by emerging demand strength in OLED displays. We expect this demand trend will be supported by rapid adoption in smart phones and positive user experience. Increased chip size design for RAM capacity contributes production capacity of twelve-inch wafers. Gold bumping technology is characterized by providing the best solution for fine-pitch chips to meet the highly efficient production requirement display panel. In 2021, we increased gold bumping wafer shipments resulting from demand for of high refresh rate panel, 5G mobile, gaming monitor, 8K display and automotive infotainment applications. In 2022, ChipMOS aims to develop VR/AR wearable devices for metaverse application opportunity. Meanwhile, medical, automotive and integration TDDI products are still our main business goal.

- RDL technology

  As high speed, high performance and high accuracy requirement, many electronic devices need the capability of transferring higher current. By using Re-distribution layer (RDL) technology which can relocate to the PKG wire bonding position where necessary. ChipMOS can provide several electroplating metal thickness based on customer design request, including 2P1M, 2P2M and 3P2M structures. The min. Line/space of RDL could be 5um / 5um that makes integration of MCP and SIP achievable.

- Cu/Solder Family (WLCSP, Lead free solder plating and Cu Pillar)

  We believe that consumer electronics are driving the application growth of these processes. From small wearable gadgets, NOR flash applications, power devices to emerging AIoT/AI development are all included. We expanded our bumping factory line capacity toward the consumer market and we expect this to continue to deliver good performance. Through 12” WLCSP process for NOR flash to provide a thinner and smallest chip size for TWS (True Wireless Stereo) application is a success case recently. Now, Copper pillar and flip chip solution is another packaging solution for this application. Fine pitch Copper pillar is an effective way to increase interconnection densities. The typical Copper pillar height is 50~70 um, further development is micro bump, which reducing Copper pillar size and height. Copper pillar also offers advantages with respect to better electrical and thermal conductivity, as well as increasing electromigration resistance and current carrying capability.

Other Services

Drop Shipment

We offer drop shipment of semiconductors directly to end-users designated by our customers. We provide drop shipment services, including assembly in customer-approved and branded boxes, to a majority of our assembly and testing customers. Since drop shipment eliminates the additional step of inspection by the customer prior to shipment to end-users, quality of service is a key to successful drop shipment service. 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.

Software Development, Conversion and Optimization Program

We work closely with our customers to provide sophisticated software engineering services, including test program development, conversion and optimization, and related hardware design. Generally, testing requires customized testing software and related hardware to be developed for each particular product. Software is often initially provided by the customer and then converted by us at our facilities for use on one or more of our testing machines and contains varying functionality depending on the specified testing procedures. Once a conversion test program has been developed, we perform correlation and trial tests on the semiconductors.

Customer feedback on the test results enables us to adjust the conversion test programs prior to actual testing. We also typically assist our customers in collecting and analyzing the test results and recommends engineering solutions to improve their design and production process.

Customers

We believe that the following factors have been, and will continue to be, important factors in attracting and retaining customers:

- our advanced assembly and testing technologies;
- our strong capabilities in testing and assembling DDIC/TDDI and other display panel driver semiconductors;
- our focus on high-density memory products and logic/mixed-signal communications products; and
- our reputation for high quality and reliable customer-focused services.

The number of our customers as of March 31 of 2020, 2021 and 2022, respectively, was 75, 75 and 78. Our top 15 customers in terms of revenue in 2021 were (in alphabetical order):

Asahi Kasei Microdevices Corporation
Chipone Technology (Beijing) Co., Ltd.
Elan Microelectronics Corp.
Elite Semiconductor Microelectronics Technology Inc.
Himax Technologies, Inc.
ILI Technology Corporation
Integrated Circuit Solution Inc.
Macronix International Co., Ltd.
MediaTek Inc.
Micron Technology, Inc.
Novatek Microelectronics Corp.
Phison Electronics Corp.
Raydium Semiconductor Corporation
Synaptics Incorporated
Winbond Electronics Corporation

In 2019, our top three customers accounted for approximately 23%, 12% and 10% of our revenue, respectively. In 2020, our top three customers accounted for approximately 22%, 12% and 10% of our revenue, respectively. In 2021, our top three customers accounted for approximately 21%, 10% and 9% of our revenue, respectively.

The majorities of our customers purchase our services through purchase orders and provide us three-month non-binding rolling forecasts on a monthly basis. The price for our services is typically agreed upon at the time when a purchase order is placed.

The following table sets forth, for the periods indicated, the percentage breakdown of our revenue, categorized by geographic region based on the jurisdiction in which each customer is headquartered.

	Year ended December 31,		
	2019	2020	2021
Taiwan	78%	80%	79%
Japan	9	5	6
Singapore	7	8	6
PRC	4	5	7
Others	2	2	2
Total	100%	100%	100%

Qualification and Correlation by Customers

Our customers generally require that our facilities undergo a stringent "qualification" process during which the customer evaluates our operations, production processes and product reliability, including engineering, delivery control and testing capabilities. The qualification process typically takes up to eight weeks, or longer, depending on the requirements of the customer. For test qualification, 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 test criteria; information regarding process flow and sample semiconductors to be tested and either provides us with the test program or requests that we develop a new or conversion program. In some cases, the customer also provides us with a data log of results of any testing of the semiconductor 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.

Sales and Marketing

We maintain sales and marketing offices in Taiwan, the United States and Mainland China. Our sales and marketing strategy is to focus on memory semiconductors in Taiwan, Japan, Singapore, Korea and the United States, logic/mixed-signal semiconductors in Taiwan, Japan and the United States, LCD, OLED and other display panel driver semiconductors in Japan, Korea, Taiwan, Hong Kong and Mainland China. As of March 31, 2022, our sales and marketing efforts were primarily carried out by teams of sales professionals, application engineers and technicians, totaling 35 staff members. Each of these teams focuses on specific customers and/or geographic regions. As part of our emphasis on customer service, these teams:

- actively participate in the design process at the customers' facilities;
- resolve customer assembly and testing issues; and
- promote timely and individualized resolutions to customers' issues.

We conduct marketing research through our in-house customer service personnel and through our relationships with our customers and suppliers to keep abreast of market trends and developments. Furthermore, we do product and system bench marking analysis to understand the application and assembly technology evolution, such as analysis on mobile handsets and Tablet, PC, wearable products. In addition, we regularly collect data from different segments of the semiconductor industry and, when possible, we work closely with our customers to design and develop assembly and testing services for their new products. Sale will cowork with internal technology expert to work closely with our customers as project kick off. We provide full turnkey service (from design-in stage/design for bumping and assembly/design for testing services) to achieve design for mass production for new products. These "co-development" or "sponsorship" projects can be critical when customers seek large-scale, early market entry with a significant new product.

Research and Development

To maintain our competitive edge for continued business growth, we continue our focus of our investment in new technology research and development. In 2019, 2020 and 2021, we spent approximately NT$1,008 million, or 5.0%, NT$1,016 million, or 4.4% and NT$1,139 million (US$41 million), or 4.2%, respectively, of our revenue on research and development. We intend to sustain these efforts.

Our research and development efforts have been focused primarily on new technology instruction, improving efficiency and production yields of our testing, assembly and bumping services. From time to time, we jointly develop new technologies with local and international equipment and material manufacturing company to enhance the competitiveness. In testing area, our research and development efforts focused particularly on high speed probing, fine pitch probing capability and wafer level burn-in technology. Our projects include:

- Ramped up high frequency testing capability of LCD, OLED and other display panel driver semiconductors;

- Developing full temperature range (-40ºC~125ºC) of FT testing for automotive products;
- Built up 12” fine pitch COF assembly capability for less than 18um inner lead pitch products;
- Developing more flexible COF tape assembly for full-screen display application;
- Developing “wafer level probing on copper pillar bump for 300mm wafers”; and
- Developing centralized server test control system.

In assembly and bumping areas, our research and development efforts were directed to:

- Au height reduction, as part of cost reduction drive, 10um bump height COF package and 8um bump height COG package was released for production;
- Wafer-level chip scale packaging and 3P2M Cu RDL processes;
- Fine-pitch Cu RDL process for WLCSP and RDL products;
- Flip-chip CSP for DRAM and mixed-signal application;
- 3P/2M Cu pillar bumping for 300mm wafers high pin count products;
- Developing fine pitch Cu RDL line width and space with 4um/4um for advanced re-distribution layer device design requirement;
- Shrink ball size with ball mount technology and combine thinner wafer grind thickness to achieve thin WLCSP requirement;
- Dual/Multi-chip assembly and module of flash products for SSD and eMMC applications;
- Hybrid package by integration of wire binding & flip-chip process with passive components to offer total solution for UFS device;
- DBG/SDBG implementation to enhance the capability of ultra-thin wafer lapping and dicing capabilities for stacked-die chip scale package;
- Advanced thin core/core-free, flex substrate solutions for thin and flip chip packages;
- 2-metal layers COF assembly and COF SMT capabilities;
- Qualified thermally enhanced COF and MCB COF and released for manufacturing;
- Double-sided Heat Sink/ High conductivity material development is applied in thermal packaging services for high-resolution panels; and
- Source & Gate ICs integrated technology development is used in product applications with narrow border panels.

For new product and product enhancement work in 2017, our work concentrates on three key development programs: 3D WLCSP, biometric sensor package solutions, and flip chip technology. In the bumping area, we completed customer qualification of 300mm wafer Au bumping process in 2012 and started volume production in the fourth quarter of 2012. Development of Cu plating enables the entry of WLCSP, RDL and flip chip market and Cu RDL applied on DRAM wafer for SiP product is qualified in 2016. Turnkey services of WLCSP and flip chip QFN have been implemented for mass production in 2013 based on the successful technology developments. In 2012, we also initiated both 200mm and 300mm Cu pillar bumping engineering work and, related packaging technologies are being developed for mixed-signal and memory products in 2013. It is also qualified on power management IC product in 2016. According wearable device trend, we miniature fine-pitch Cu RDL process for WLCSP and RDL products, we shrink ball size with ball mount technology and combine thinner wafer grinded thickness to achieve thin WLCSP structure in 2020. By integrating WLCSP bumping, copper pillar bumping and flip chip assembly capability, an integrated WLCSP (CoW or 3D WLCSP) is developing in 2015, and qualified the structure and process verification in 2016. CoW not only provides the cost effective package solution by stacking the different wafer node technology chip, but also could meet integrated function and smallest package footprint. Meanwhile, fingerprint sensor (FPS) packaging solution by LGA was also developed for smartphone demand in 2015. More and more integrated function of DDIC, TDDI and FPS, is requested for smartphone application, therefore 2-metal layers COF solution and COF SMT are developed to provide the package solution since 2019.

Since 2013, in-process engineering advancement allowed us to extend our wirebond technology to service MEMS products. To further achieve cost reduction, alloy wire and 0.6 mil Au wirebond processes were also developed. In 2018, we continued to work on the expansion of multi-chip NAND packages offerings, and 12" fine pitch COF assembly capability. Capability of handling miniature molded packages has been extended to 1x1 mm size and various improvements will also be made in production equipment to enhance throughput and efficiency. In 2019, we launched SDBG technology to implement multi-chip assembly and module of flash products for NAND Flash applications.

As of March 31, 2022 we employed 661 employees in our research and development activities. In addition, other management and operational personnel are also involved in research and development activities but are not separately identified as research and development professionals.

We maintain laboratory facilities capable for materials and electrical characterizations to support production and new product development. Computer simulation is used to validate both mechanical and electrical models in comparison to measurement results. Enhancement of Shadow Moiré and Micro Moiré equipment was carried out to support MCP and flip chip package warpage and residue stress characterization. We also setup up mold flow simulation capability to predict assembly risk. In Advanced Packaging Lab, rheology measurement capability and high frequency electric simulation capability were established, aimed at expanding capability for material selection and inspection to support flip chip introduction and various resin characterizations. An analytical laboratory has been built out in our bumping line providing timely support to manufacturing operations.

Quality Control

We believe that our reputation for high quality and reliable services have been an important factor in attracting and retaining leading international semiconductor companies as customers for our assembly and testing services. We are committed to delivering semiconductors that meet or exceed our customers' specifications on time and at a competitive cost. We maintain quality control staff at each of our facilities.

As of March 31, 2022, we employed 53 personnel for our quality control activities. Our quality control staff typically includes engineers, technicians and other employees who monitor assembly and test processes in order to ensure high quality. We employ quality control procedures in the following critical areas:

- sales quality assurance: following market trends to anticipate customers' future needs;
- design quality assurance: when developing new testing and assembly processes;
- supplier quality assurance: consulting with our long-term suppliers;
- manufacturing quality assurance: through a comprehensive monitoring program during mass production; and
- service quality assurance: quickly and effectively responding to customers' claims after completion of sale.

All of our facilities have obtained ISO 26262 road vehicles-functional safety system certification in December 2019 and obtained IATF 16949 quality system certification in December 2017. In addition, our facilities in Hsinchu and Tainan have been ISO 9002 certified in September 1997 and December 1998, respectively, and recertified with ISO 9001 for substantial revision since 2015.

IATF 16949 certification system seeks to integrate quality management standards into the operation of a company and emphasizes the supervision and measurement of process and performance. An ISO 9001 certification is required by many countries for sales of industrial products.

In addition to the quality management system, we also earned the 1998 QC Group Award from The Chinese Society of Quality, which is equivalent to the similar award from the American Society of Quality and certified ISO17025 in 2000. In 2003, ChipMOS passed SONY Green Partner (Tier 2) certification through its ProMOS channel, and in 2009, ChipMOS obtained SONY Green Partner (Tier 1) certification due to its direct business relationship with SONY. Our laboratories have also been awarded Chinese National Laboratory accreditation under the categories of reliability test, electricity and temperature calibration.

Our assembly and testing operations are carried out in clean rooms where air purity, temperature and humidity are controlled. To ensure the stability and integrity of our operations, we maintain clean rooms at our facilities that meet U.S. federal 209E class 100, 1,000, 10,000 and 100,000 standards. A class 1,000 clean room means a room containing less than 1,000 particles of contaminants per cubic foot.

We have established manufacturing quality control systems that are designed to ensure high-quality services to our customers and maintain reliability and high production yields at our facilities. We employ specialized equipment for manufacturing quality and reliability control, including:

- Joint Electron Device Engineering Council (JEDEC) standardized temperature cycling, thermal shock and pressure cook reliability tests;
- high and low temperature storage life tests, temperature humidity bias test and highly accelerated temperature/humidity stress test (HAST); and
- high resolution scanning acoustic tomography, scanning electronic microscope and X-Ray microscopy for physical failure analysis, curve tracer and semi-probe station for electrical failure analysis.

In addition, to enhance our performance and our research and development capabilities, we also installed a series of high-cost equipment, such as temperature humidity bias testers, low temperature storage-life testers and highly accelerated stress testers. We believe that many of our competitors do not own this equipment.

As a result of our ongoing focus on quality, in 2021, we achieved monthly assembly yields of an average of 99.91% for our memory and logic/mixed-signal assembly packages, 99.98% for our COF packages, 99.97% for our COG packages and 99.96% for our bumping products (including gold bump, RDL and WLCSP). The assembly yield, which is the industry standard for measuring production yield, is equal to the number of integrated circuit packages that are shipped back to customers divided by the number of individual integrated circuits that are attached to lead frames or organic substrate.

Raw Materials

Semiconductor testing requires minimal raw materials. Substantially all of the raw materials used in our memory and logic/mixed-signal semiconductor assembly processes are interconnect materials such as leadframes, organic substrates, gold wire and molding compound. Raw materials used in the LCD, OLED and other display panel driver semiconductor assembly and testing process include gold, carrier tape, resin, spacer tape, plastic reel, aluminum bags, and inner and outer boxes. Cost of raw materials represented 18%, 20% and 20% of our revenue in 2019, 2020 and 2021, respectively.

We do not maintain large inventories of leadframes, organic substrates, gold wire or molding compound, but generally maintain sufficient stock of each principal raw material for approximately one month's production based on blanket orders and rolling forecasts of near-term requirements received from customers. Shortages in the supply of materials experienced by the semiconductor industry have in the past resulted in price adjustments. Our principal raw material supplies have not been impacted by the Japan earthquake and tsunami catastrophe. See "Item 3. Key Information—Risk Factors—Risks Relating to Our Business—If we are unable to obtain raw materials and other necessary inputs from our suppliers in a timely and cost-effective manner, our production schedules would be delayed and we may lose customers and growth opportunities and become less profitable" for a discussion of the risks associated with our raw materials purchasing methods. For example, with the exception of aluminum bags and inner and outer boxes, which we acquire from local sources, the raw materials used in our COF process and for modules are obtained from a limited number of Japanese suppliers.

Competition

The independent assembly and testing markets are very competitive. Our competitors include large IDMs with in-house testing and assembly capabilities and other independent semiconductor assembly and testing companies, especially those offering vertically integrated assembly and testing services, such as Advanced Semiconductor Engineering Inc., Amkor Technology, Inc., Chipbond Technology Corporation, King Yuan Electronics Co., Ltd., Powertech Technology Inc., Jiangsu Changjiang Electronics Technology Co., Ltd. and United Test and Assembly Center Ltd. We believe that the principal measures of competitiveness in the independent semiconductor testing industry are:

- engineering capability of software development;
- quality of service;
- flexibility;
- capacity;
- production cycle time; and
- price.

In assembly services, we compete primarily on the basis of:

- production yield;
- production cycle time;
- process technology, including our COF technology for LCD, OLED and other display panel driver semiconductor assembly services;
- quality of service;
- capacity;
- location; and
- price.

IDMs that use our services continually evaluate our performance against their own in-house assembly and testing capabilities. These IDMs may have access to more advanced technologies and greater financial and other resources than we do. We believe, however, that we can offer greater efficiency and lower costs while maintaining an equivalent or higher level of quality for three reasons:

- firstly, we offer a broader and more complex range of services as compared to the IDMs, which tend to focus their resources on improving their front-end operations;
- secondly, we generally have lower unit costs because of our higher utilization rates and thus enabling us to operate at a more cost-effective structure compared to the IDMs; and
- finally, we offer a wider range of services in terms of complexity and technology.

Intellectual Property

As of March 31, 2022, we held 301 patents in Taiwan, 123 patents in the United States, 192 patents in Mainland China and 1 patent in the United Kingdom and 2 patents in Korea and Japan, respectively, relating to various semiconductor assembly and testing technologies. These patents will expire at various dates through to 2041. As of March 31, 2022, we also had a total of 30 pending patent applications in Taiwan, and 51 in Mainland China. In addition, we have registered "ChipMOS" and its logo as trademarks in Taiwan, the United States, Mainland China, Singapore, Hong Kong, Korea, Japan, the United Kingdom and the European Community.

We expect to continue to file patent applications where appropriate to protect our proprietary technologies. We may need to enforce our patents or other intellectual property rights or to defend ourselves against claimed infringement of the rights of others through litigation, which could result in substantial costs and a diversion of our resources. See "Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Disputes over intellectual property rights could be costly, deprive us of technologies necessary for us to stay competitive, render us unable to provide some of our services and reduce our opportunities to generate revenue".

Government Regulations

As discussed above under "—Intellectual Property", governmental regulation of our intellectual property may materially affect our business. The failure to protect our property rights would deprive us of our ability to stay competitive in the semiconductor industry. Our intellectual property rights are protected by the relevant patent and intellectual property agencies of the European Community, the United Kingdom, the United States, Mainland China, Singapore, Hong Kong, Korea, Japan and Taiwan.

Environmental and Climate Change Matters

Semiconductor testing does not generate significant pollutants. The semiconductor assembly and gold bumping process generate stationary acid, alkali and VOC pollutions, principally at the plating and etching stages. Water waste is produced when silicon wafers are ground thinner, diced into chips with the aid of diamond saws and cleaned with running water. In addition, excess materials, either on leadframes or molding process, are removed from assembled semiconductors in the trimming and de-junking processes, respectively. We have various treatment equipment for wastewater and air pollutants at our assembly and bumping facilities. Since 2001, we have adopted certain environmental friendly production management systems, and have implemented certain measures intended to bring our all processes in compliance with the Restriction of Hazardous Substances Directive/EC issued by the European Union and our customers. We believe that we have adequate and effective environmental protection measures that are consistent with semiconductor industry practices in Taiwan. In addition, we believe we are in compliance in all material respects with current environmental laws and regulations applicable to our operations and facilities.

All of our facilities in Taiwan have been certified as meeting the ISO 14001 environmental standards of the International Organization for Standardization, and all of our facilities in Taiwan have been certified as meeting the ISO45001 standards of the International Organization for Standardization. Our facilities at Hsinchu Science Park, Chupei, Hukou, Hsinchu Industrial Park and Southern Taiwan Science Park have won numerous awards including "Green Factory Label" from 2013 to 2020, "Enterprises Environmental Protection Gold Grade Award" in 2018 and 2019, "Occupational Safety and Health Excellent Award" in 2016, 2017 and 2021, "Green Building Label" in 2014 and 2017 up to now. We are also certified the "Health Promotion Awards" from 2012 to 2024. We continue to encourage our employees to participate in community environmental campaigns and better environmental friendly practices.

We will continue to enhance related management to reduce industrial waste, save energy and control pollution. For products in conformity with Green Product Requirement, the Company obtained Green Partner certification from Sony Corporation of Japan. Furthermore, we passed QC 080000 certification and "Greenhouse Gas Verification Statement" ("ISO 14064-1") from 2013 until now. We further confirmed many products' CFP "Carbon Footprint Verification Statement" ("ISO 14067") and WFN "Water Footprint Verification Statement" ("ISO 14046"). At the same time, Tainan and Hsinchu plants passed the certification of energy management system ("ISO 50001") in 2014 and 2017 up to now. For materials management, we passed the "Material Flow Cost Accounting (MFCA, ISO 14051)" to reduce the loss. Our policy is to pay attention to the environment issues by standardizing on green, environmental friendly products, cleaner process and enhance supplier chain management to meet ChipMOS' Corporate Social Responsibilities.

As an enterprise, ChipMOS understands the importance of carrying out environmental protection in action. By referencing the Task Force on Climate-related Financial Disclosures ("TCFD") framework developed by the Financial Stability Board ("FSB") and began in 2021, we have identified the management needed over risks and opportunities associated with climate change, and further attained a comprehensive overview on the effects of climate change.

Besides depleting the Earth of her resources, energy consumption also generates carbon dioxide, leading to greenhouse effects. Hence, effective energy use will help to mitigate impacts on the environment. Due to the nature of the technology industry, ChipMOS is classified as one of the major electricity consumers per regulations from the Bureau of Energy, MOEA. Upholding our principle of treasuring energy consumption, we began to systematically initiate energy conservation actions in 2012. We continue to introduce various energy efficient technologies and facilities, and on top of Tainan fab's voluntary introduction of ISO 50001 Energy Management System in 2014, Hsinchu fab also achieved the ISO 50001 Energy Management System certification in 2017. We actively promoted the use of renewable energy sources in 2020 and built solar power generation facilities to continuously increase the consumption ratio of renewable energies.

Environmental, Social and Governance ("ESG") Initiatives and Sustainable Development Goals ("SDGs") Linkings

Upholding the mission for ethical and integrity, environmental friendliness, and caring for disadvantaged groups, ChipMOS has formulated substantial implementation objectives for economic, environmental and social aspects, and to actively create a sustainable future. ChipMOS's Corporate Social Responsibility Best Practice Principles was approved by the Board of Directors in 2013 (renamed as Sustainability Development Principles since February 2022), and CSR committee was established in 2014.

ChipMOS formulates sustainability vision by integrating sustainability policy, organizational vision, and core missions, and inspects the vision's link to the United Nations' SDGs. Senior executives in the management team are committed to being aligned with the SDGs and adopted the SDGs. Each organization within ChipMOS has set SDGs as important references in setting annual sustainability goals based on their respective management strategies.

We have launched sustainable actions for all aspects during our business management, including: continuing to enhance corporate governance, complying with ethical management and being committed to the R&D and innovation of core technologies to realize our commitment and responsibilities to employees; and actively invest in green production to reduce harmful effects on the environment during production processes and continuing to enhance resource utilization efficiency to protect the environment. Internally, we persist in the protection and care for employees' health and welfare while striving in employee development and assisting in their career development. Externally, we are deeply engaged in environmental sustainability and social welfare.

Green Production and Green Manufacturing

Global warming and climate change have become phenomenon that enterprises around the world need to address. ChipMOS continues to follow the Paris Agreement and strives to increase the use of renewable energy and improve the efficiency of energy use on the basis of strengthening adaptation to climate change, so as to reducing greenhouse gases and controlling global temperature rise, on top of enhancing adaptability to climate change. ChipMOS is committed to building solar power generation system up to 8% of the contracted power generation in 2023, planning various energy saving goals and achieve a company-wide energy saving rate more than 1%, and implementing products' Carbon and Water Footprint and Material Flow Cost Accounting and more. Through reducing consumption and carbon emissions, we hope to reduce the impacts on the environment. At the same time, we also continue to educate employees to enhance their awareness for environmental protection. These efforts have also been extended to our suppliers and stakeholders as we hope to work collectively to become a low-carbon, energy-saving, and green enterprise.

Employee Value and Talent Developing

We are committed to equality and strive to provide equal employment opportunities. We protect the rights of our workers and respect every employee, and we have created a positive and friendly workplace environment. ChipMOS has set up comprehensive talent development framework and system and invested sufficient resources toward the training for Leadership, Technology, General Management, Quality, and for Newcomer Orientation. At the same time, talent development strategies have also been formulated to achieve talent development goals.

Long-Term Customer Partnerships

ChipMOS promises that products and services delivered to customers can meet their needs, are competitive, and are served on a timely basis. Upholding the principle of customer service, we provide comprehensive products and services from a customer oriented perspective with the aim of becoming their trusted, long-term partners.

Social Inclusion and Local Community Partnership

Founded on the visions of environmental sustainability and social care, ChipMOS focuses on the four dimensions of "Environmental Friendliness", "Giving Back to the Community", "Care for the Disadvantaged", and "Talent Development", to spread love to each and every corner of the society along with our colleagues, and to exert greater impacts through ChipMOS's social engagement and actions.

Corporate Governance

ChipMOS has established the corporate governance structure and formulated good governance system, abides by legal regulations and ethical management to ensure the Company's robust operations and growth in line with its Articles of Incorporation, Corporate Governance Best Practice Principles and applicable laws and regulations. We strengthen supervision and management over the Company's operations through the Board of Directors and are committed to protecting the rights and interests of shareholders and all other stakeholders. We actively communicate and interact with stakeholders, continue to enhance information transparency and fulfill sustainable development, which are also the key developments promoted by corporate governance.

We will continue to strengthen corporate governance management, including protecting shareholders' rights and interests, strengthening the Board of Directors' operations, strengthening risk management in internal control, enhancing information transparency, and fulfilling corporate social responsibility. These practices will help us to actively enhance the standard of corporate governance and the stakeholders' understanding of our policy implementations and their results.

For further information on our ESG initiatives and SDGs linking, please see our annual Corporate Social Responsibility Reports (will be renamed as Sustainability Report in 2022), which are available on our website at https://www.chipmos.com/english/csr/ report.aspx. The information contained on our website is not incorporated herein by reference and does not constitute part of this annual report.

Insurance

We maintain insurance policies on our buildings, equipment and inventories. These insurance policies cover property damages due to all risks, including but not limited to, fire, lightning and earthquakes. The maximum coverage of property insurance for the Company is approximately NT$108,681 million.

Insurance coverage on facilities under construction is maintained by us and our contractors, who are obligated to procure necessary insurance policies and bear the relevant expenses of which we are the beneficiary. We also maintain insurance on the wafers delivered to us while these wafers are in our possession and during transportation from suppliers to us and from us to our customers.

Employees

See "Item 6. Directors, Senior Management and Employees—Employees" for certain information relating to our employees.

Taxation

See "Item 5. Operating and Financial Review and Prospects—Taxation" for certain information regarding the effect of ROC tax regulations on our operations.

Facilities

We provide testing services through our facilities in Taiwan at following locations: Chupei, the Hsinchu Industrial Park, the Hsinchu Science Park, and the Southern Taiwan Science Park. We provide assembly services through our facility at the Southern Taiwan Science Park. We own the land for our Hsinchu Industrial Park testing facility and Chupei facility and we lease two parcels of land for our Hsinchu Science Park testing facility with lease expiration in year 2027 and 2034, respectively, and two parcels of land for our Southern Taiwan Science Park facility with lease expiration in year 2024 and 2032.

The following table shows the location, primary use and size of each of our facilities, and the principal equipment installed at each facility, as of March 31, 2022.

Location of Facility	Primary Use	Floor Area (m^2)	Principal Equipment
Chupei, Hsinchu	Testing/Gold Bumping	38,166	10 steppers 19 sputters 324 testers
Hsinchu Industrial Park	Testing	25,864	104 testers 27 burn-in ovens
Hsinchu Science Park	Testing	31,168	186 testers 53 burn-in ovens
Southern Taiwan Science Park	Assembly/Testing	166,833	968 wire bonders 113 inner-lead bonders 630 testers

Equipment

Testing of Memory and Logic/Mixed-Signal Semiconductors

Test equipment is the most capital-intensive component of the memory and logic/mixed-signal semiconductors test business. Upon the acquisition of new test equipment, we install, configure, calibrate and perform burn-in diagnostic tests on the equipment. We also establish parameters for the test equipment based on anticipated requirements of existing and potential customers and considerations relating to market trends. As of March 31, 2022, we operated 614 testers for testing memory and logic/mixed-signal semiconductors. We generally seek to purchase testers with similar functionality that are able to test a variety of different semiconductors. We purchase testers from international manufacturers Advantest Corporation.

In general, particular semiconductors can be tested using a limited number of specially designed testers. As part of the qualification process, customers will specify the machines on which their semiconductors may be tested. We often develop test program conversion tools that enable us to test semiconductors on multiple equipment platforms. This portability among testers enables us to allocate semiconductor testing across our available testing capacity and thereby improve capacity utilization rates. If a customer requires the testing of a semiconductor that is not yet fully developed, the customer consigns its testing software programs to us to test specific functions. If a customer specifies test equipment that is not widely applicable to other semiconductors we test, we require the customer to furnish the equipment on a consignment basis.

We will continue to acquire additional test equipment in the future to the extent market conditions, cash generated from operations, the availability of financing and other factors make it desirable to do so. Some of the equipment and related spare parts that we require have been in short supply in recent years. Moreover, the equipment is only available from a limited number of vendors or is manufactured in relatively limited quantities and may have lead time from order to delivery in excess of six months.

Assembly of Memory and Logic/Mixed-Signal Semiconductors

The number of wire bonders at a given facility is commonly used as a measure of the assembly capacity of the facility. Typically, wire bonders may be used, with minor modifications, for the assembly of different products. We purchase wire bonders principally from Shinkawa Co., Ltd. and Kulicke & Soffa Industries Inc. As of March 31, 2022, we operated 968 wire bonders. In addition to wire bonders, we maintain a variety of other types of assembly equipment, such as wafer grinders, wafer mounters, wafer saws, die bonders, automated molding machines, laser markers, solder platers, pad printers, dejunkers, trimmers, formers, substrate saws and lead scanners.

Gold Bumping, Assembly and Testing of LCD, OLED and Other Display Panel Driver Semiconductors

We acquired TCP-related equipment from Sharp to begin our TCP-related services. We subsequently purchased additional TCP-related testers from Advantest Corporation and assembly equipment from Shibaura Mechatronics Corp. As of March 31, 2022, we operated 10 steppers and 19 sputters for gold bumping, 113 inner-lead bonders for assembly and 630 testers for LCD, OLED and other display panel driver semiconductors. We are currently in the process of purchasing additional test equipment. The test equipment can be used for the COF and COG processes, while the inner-lead bonders are only used in the COF processes. The same types of wafer grinding, auto wafer mount and die saw equipment is used for the COF and COG processes. In addition, auto inspection machines and manual work are used in the COG process, which is more labor-intensive than the COF processes.

Item 4A. Unresolved Staff Comments

Not applicable.

Item 5. Operating and Financial Review and Prospects

This discussion and analysis should be read in conjunction with our consolidated financial statements and related notes contained in this Annual Report on Form 20-F.

Overview

We provide a broad range of back-end assembly and testing services. Testing services include wafer probing and final testing of memory and logic/mixed-signal semiconductors. We also offer a broad selection of leadframe and organic substrate-based package assembly services for memory and logic/mixed-signal semiconductors. Our advanced leadframe-based packages include thin small outline packages, or TSOPs, and our advanced organic substrate-based packages include fine-pitch ball grid array, or fine-pitch BGA, packages. We also offer WLCSP products and turn-key flip chip assembly and testing services using variety of leadframe and organic substrate carries. In addition, we provide gold bumping, reel to reel assembly and testing services for LCD, OLED and other display panel driver semiconductors by employing COF and COG technologies. Our copper bumping technology supports non-driver type of products, such as RDL, copper pillar, WLCSP etc. In 2021, our consolidated revenue was NT$27,400 million (US$988 million) and our profit for the year attributable to equity holders of the Company was NT$4,937 million (US$178 million).

We are a company limited by shares, incorporated in ROC on July 28, 1997 as a joint venture company of Mosel and Siliconware Precision and with the participation of other investors.

The Company listed and commenced trading on the main board of TWSE on April 11, 2014. See “Item 3. Key Information—Risk Factors—Risks Relating to Our Common Shares or ADSs—The Company’s ability to maintain its listing and trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market is dependent on factors outside of the Company’s control and satisfaction of stock exchange requirements. The Company may not be able to overcome such factors that disrupt its trading status of common shares on the Taiwan Stock Exchange or ADSs on the NASDAQ Stock Market or satisfy other eligibility requirements that may be required of it in the future” for additional information.

On January 21, 2016, ChipMOS Bermuda and the Company entered into the Merger Agreement, pursuant to which ChipMOS Bermuda merged with and into the Company, with the latter being the surviving company after the Merger. Pursuant to the Merger Agreement, at the effective time, each ChipMOS Bermuda share issued and outstanding immediately prior to the effective time was cancelled and, in exchange, each former holder of such cancelled ChipMOS Bermuda shares was entitled to receive, with respect to each such ChipMOS Bermuda share, (i) 0.9355 ADS, representing 18.71 the Company share, each ADS representing 20 common shares of the Company, and (ii) US$3.71 in cash, without interest, net of any applicable withholding tax. Upon completion of the Merger, the Company and its subsidiaries owned continued to conduct the business that they conducted in substantially the same manner. For additional information regarding the Merger see “Item 4. Information on the Company”.

On November 30, 2016, the Company and Unigroup Guowei executed the Equity Interest Transfer Agreement. Under the agreement, ChipMOS BVI, a wholly-owned subsidiary of the Company, would sell 54.98% of the equity interests of its wholly-owned subsidiary, Unimos Shanghai, to strategic investors, including Unigroup Guowei, a subsidiary of Tsinghua Unigroup, which will hold 48% equity interests of Unimos Shanghai, and the other strategic investors, including a limited partnership owned by Unimos Shanghai's employees, will own 6.98% equity interest of Unimos Shanghai. In March 2017, ChipMOS BVI completed the sale of 54.98% equity interests of Unimos Shanghai to Unigroup Guowei and other strategic investors. Unimos Shanghai was no longer the subsidiary of ChipMOS BVI. On June 30, 2017, we completed the first stage capital injection of Unimos Shanghai, and on January 19, 2018, completed the second stage capital injection of Unimos Shanghai. On December 16, 2019, Unigroup Guowei and one of the strategic investor sold and transferred all equity interests of Unimos Shanghai to Yangtze Memory, which holds 50% equity interests of Unimos Shanghai after the transaction completed. On May 11, 2020, one of the strategic investor sold and transferred all equity interests of Unimos Shanghai to Yangtze Memory, which holds 50.94% equity interests of Unimos Shanghai after completed transaction. See "Item 4. Information on the Company—Our Structure and History" for more details.

We conduct testing operations in our facilities at the Hsinchu Science Park, the Hsinchu Industrial Park and Chupei, gold bumping and wafer testing in our facility at Chupei, and assembly and testing operations in our facility at the Southern Taiwan Science Park. We also conduct operations in Mainland China through Unimos Shanghai, a 45.02%-owned affiliate of ChipMOS BVI. Unimos Shanghai operates an assembly and testing facility at the Qingpu Industrial Zone in Shanghai.

The following key trends are important to understand our business:

Capital Intensive Nature of Our Business. 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 as a result of our previous acquisitions of assembly and testing equipment and facilities. Our profitability depends on part not only on absolute pricing levels for our services, but also on capacity utilization rates for our assembly and testing equipment. In particular, increases or decreases in our capacity utilization rates could significantly affect our gross margins since the unit cost of assembly and testing services generally decreases as fixed costs are allocated over a larger number of units.

The current generation of advanced testers typically cost between US$0.7 million and US$1.1 million each, while die bonders used in assembly typically cost approximately US$270 thousand each wire bonders in assembly cost approximately US$67 thousand each and package saw in assembly cost approximately US$750 thousand each and WB plating cost approximately US$4.5 million each. We begin depreciating our equipment when it is placed into commercial operation. There may be a time lag between the time when our equipment is placed into commercial operation and when it achieves high levels of utilization. In periods of depressed semiconductor industry conditions, we may experience lower than expected demand from our customers and a sharp decline in the average selling prices of our assembly and testing services, resulting in an increase in depreciation expenses relative to revenue. In particular, the capacity utilization rates for our LCD, OLED and other display panel driver semiconductors assembly and testing equipment may be severely adversely affected during a semiconductor industry downturn as a result of the decrease in outsourcing demand from integrated device manufacturers, or IDMs, which typically maintain larger in-house testing capacity than in-house assembly capacity.

Highly Cyclical Nature of the Semiconductor Industry. The worldwide semiconductor industry has experienced peaks and troughs over the last decade. The overall outsourced assembly and testing services for memory semiconductors increased gradually since third quarter of 2019. And the average market price of large TV panel declined since third quarter of 2019 that also reflect the softer demand of TV panel drivers. COVID-19 outbreak and Tokyo Olympic 2020 postponed are also impacted the TV inventory consumption. That intensify our difficulties to maintain capacity utilization rates. However, the panel demand from the work at home and distance education which are the quarantine actions for preventing COVID-19 spread, recently increases the utilization of our assembly and testing of memory and COF assembly.

Declining Average Selling Prices of Our Assembly and Testing Services. The semiconductor industry is characterized by a general decrease in prices for products and services over the course of their product and technology life cycles. The rate of decline is particularly steep during periods of intense competition and adverse market conditions. The average selling prices of our assembly and testing services experienced sharp declines during such periods as a result of intense price competition from other independent assembly and testing companies that attempt to maintain high capacity utilization levels in the face of reduced demand.

To offset the effects of decreasing average selling prices, we will continue to seek to:

- improve production efficiency and attain high capacity utilization rates;
- concentrate on testing of potentially high-demand, high-growth semiconductors;
- develop new assembly technologies; and

- implement new technologies and platforms to shift into potentially higher margin services.

Market Conditions for the End-User Applications for Semiconductors. Market conditions in the semiconductor industry, to a large degree, track those for their end-user applications. Any deterioration in the market conditions for the end-user applications of semiconductors that we test and assemble may reduce demand for our services and, in turn, materially adversely affect our financial condition and results of operations. Our revenue is largely attributable to fees from testing and assembling semiconductors including DDIC and non-DDIC electronic components, for use in smart mobile devices, automotive and industrial market. Continuous pricing pressure on our assembly and testing services would negatively affect our earnings.

Change in Product Mix. Increased average selling prices of DDIC and memory assembly service in the fourth quarter of 2020 and the first half of 2021 had increased our average selling price and partially offset by a change in our revenue mix. We intend to continue focusing on testing and assembling more semiconductors that have the potential to provide higher margins and developing and offering new technologies in testing and assembly services, in order to mitigate the effects of declining average selling prices for our services on our ability to attain profitability.

Recent Acquisitions

On April 2, 2019, the board of directors of the Company adopted a resolution to dispose of 9,100,000 common shares, or 9.1% equity investment in associate JMC ELECTRONICS CO., LTD. (“JMC”). The disposal was carried out on the public market and completed on April 8, 2019. We continue to own 8.3 million common shares of JMC, representing 10.0% of the total shares outstanding. The Company retains significant influence by holding one seat in JMC’s Board of Directors.

Revenue

We conduct our business according to the following main business segments: (1) testing services for memory and logic/mixed-signal semiconductors; (2) assembly services for memory and logic/mixed-signal semiconductors; (3) LCD, OLED and other display panel driver semiconductor assembly and testing services; and (4) bumping services for memory, logic/mixed-signal and LCD, OLED and other display panel driver semiconductors. The following table sets forth, for the periods indicated, our consolidated revenue for each segment.

	Year ended December 31,			
	2019	2020	2021	2021
	NT$	NT$	NT$	US$
	(in millions)			
Testing	$ 4,257.8	$ 5,002.7	$ 5,899.6	$212.6
Assembly	5,148.9	6,002.0	7,963.7	287.1
LCD, OLED and other display panel driver semiconductor assembly and testing	6,922.2	7,023.0	8,211.1	296.0
Bumping	4,009.0	4,983.7	5,325.6	192.0
Total	$20,337.9	$23,011.4	$27,400.0	$987.7

Our revenue consists primarily of service fees for testing and assembling semiconductors, and to a lesser extent, fees from equipment rentals to semiconductor manufacturers for engineering testing, less allowances for product returns. We offer assembly and testing services for memory and logic/mixed-signal semiconductors, assembly and testing services for LCD, OLED and other display panel driver semiconductors and bumping services.

Most of our customers do not place purchase orders far in advance and our contracts with customers generally do not require minimum purchases of our products or services. Our customers' purchase orders have varied significantly from period to period because demand for their products is often volatile. We have strategically entered into long-term capacity agreements with some of our customers. Under certain of those long-term agreements, we have agreed to reserve capacity for our customers and our customers have agreed to place orders in the amount of the reserved capacity (which is subject in certain cases to reduction by the customers). As part of our strategy, we intend to continue entre into additional long-term capacity agreements as well as focus on our business with smaller customers or customers who do not place orders on a regular basis. We believe that the dual focused strategy would assist us to be better prepared for the current economic volatility and ensure maximum utilization rate of our capacity and help us to develop closer relationships with all types of our customers. Depending on customer demands, market conditions and other considerations, we remain to be focused on expansion of our operations with possible future long-term capacity agreements.

Our financial condition and results of operations have also been, and are likely to continue to be, affected by price pressures on our service fees, which tend to decline in tandem with the declining average selling prices of the products we test and assemble over the course of their product and technology life cycles. In order to maintain our margins, it is necessary to offset the fee erosion by continually improving our production efficiency and maintaining high capacity utilization rates. We also plan to continue to develop and implement new technologies and expand our services into potentially higher-margin segments. These efforts require significant upfront investment in advance of incremental revenue, which could impact our margins.

Pricing

We price our testing fees primarily based on the cost of testing the products to our customers' specifications, including the costs of the required material and components, the depreciation expenses relating to the equipment involved and our overhead expenses, and with reference to prevailing market prices. Accordingly, the testing fee for a particular product would principally depend on the time taken to perform the tests, the complexity of the product and the testing process, and the cost of the equipment used to perform the test. For example, testing fees for memory semiconductors are significantly higher than those for other products because of the longer time required and the need for burn-in testing. In addition, TDDI as a multi-functional product which is DDIC with touch function, its testing process required longer testing time than traditional DDIC, thus the testing cost also will be higher than DDIC product.

We price our assembly services on a per unit basis, taking into account the complexity of the package, our costs, including the costs of the required material and components, the depreciation expenses relating to the equipment involved and our overhead expenses, prevailing market conditions, the order size, the strength and history of our relationship with the customer and our capacity utilization.

We price our assembly and testing services for DDIC/TDDI and other display panel driver semiconductors and bumping services on the basis of our costs, including the costs of the required material and components, the depreciation expenses relating to the equipment involved and our overhead expenses, and the price for comparable services.

Revenue Recognition

We generally recognize our revenue from services for assembly and testing services based on the progress towards completion of performance obligation during the service period. The progress towards completion on assembly services is measured by the actual input costs relative to estimate total expected input costs. The progress towards completion on testing services is measured by the actual incurred testing volume. We provide assembly and testing services based on customer's specification, thus, the input costs incurred to assembly and testing volume completed in testing services are not linear over the duration of these services.

Related Party Revenues

In 2019, 2020 and 2021, all less than 1%, respectively, of our net revenue were derived from related parties. We believe that our transactions with related parties were entered into on an arm's length basis as discussed in the preceding paragraph. See "Item 7. Major Shareholders and Related Party Transactions" for more information concerning our related party transactions.

Geography and Currency

The majority of our revenue is generated from customers headquartered in Taiwan, which represented 78%, 80% and 79% of our revenue in 2019, 2020 and 2021, respectively. We also generate revenue from customers in Singapore, Japan and other countries. As we generate most of our revenue from Taiwanese customers using our Taiwanese operations, and since most of our labor and overhead costs are denominated in NT dollars, we consider the NT dollar to be our functional currency.

See Note 43 to our consolidated financial statements contained in this Annual Report on Form 20-F and "Item 11. Quantitative and Qualitative Disclosure about Market Risk—Market Risks—Foreign Currency Exchange Rate Risks" for certain information on our exchange rate risks.

Cost of Revenue and Gross Profit

Our cost of revenue consists primarily of the following: depreciation expenses, raw material costs, and labor and overhead expenses, which primarily include expendable equipment, utilities expenses and inventory supplies. Our operations, in particular our testing, are characterized by relatively high fixed costs. We expect to continue to incur substantial depreciation and other expenses as a result of our previous and future acquisitions of assembly and testing equipment and facilities. As of March 31, 2022, we had 1,244 testers, 80 burn-in ovens, 968 wire bonders, 113 inner-lead bonders, 10 steppers and 19 sputters. We use inner-lead bonders for the assembly of LCD, OLED and other display panel driver semiconductors using COF technology, and wire bonders for TSOP, BGA, and some other package assembly technologies.

Our profitability depends in part not only on absolute pricing levels for our services, but also on our capacity utilization rates. Our average capacity utilization rate for testing of memory and logic/mixed-signal semiconductors was 71% in 2019, 78% in 2020 and 83% in 2021. Our average capacity utilization rate for assembly of memory and logic/mixed-signal semiconductors was 72% in 2019, 83% in 2020 and 85% in 2021. Our average capacity utilization rate for LCD, OLED and other display panel driver semiconductor assembly and testing was 74% in 2019, 76% in 2020 and 80% in 2021. In addition, our average capacity utilization rate for bumping was 74% in 2019, 82% in 2020 and 85% in 2021.

For each period of time selected, we derived the capacity utilization rate for our testing operations by dividing the total number of hours of actual use of our facilities' testing equipment units by the maximum number of hours that these equipment units were capable of being used. The testing capacity utilization rate generally increases in correlation to increases in the total volume of our customer orders, and generally decreases in correlation to decreases in the total volume of our customer orders.

For each period of time selected, we derived the capacity utilization rate for our assembly operations by dividing the total number of units actually produced by our assembly facilities by the maximum number of units that these facilities are capable of producing. The assembly capacity utilization rate generally increases in correlation to increases in the total volume of our customer orders, and generally decreases in correlation to decreases in the total volume of our customer orders.

Our gross revenue is generally the product of the progress towards completion multiplied by the average selling price per deliverable unit from our assembly or testing services, as the case may be. As a result, in a period where the average selling prices for our services do not fluctuate significantly, increases or decreases in our capacity utilization rates generally correlate to increases or decreases in our gross revenue. Periods with significant increases in the average selling prices for our services reduce the negative impact on our gross revenue from any decreases in our capacity utilization rates. Similarly, periods with significant decreases in the average selling prices for our services reduce the positive impact on our gross revenue from any increases in our capacity utilization rates.

The Company has significant fixed costs in operating our assembly and testing facilities. For this reason, decreases in our cost of goods sold during a period generally occur at a slower rate than decreases, during the same period, in our gross revenue due to lower capacity utilization rates, lower average selling prices for our services, or both. Also, as a result, our gross margin and profitability generally decrease in correlation to decreases in our capacity utilization rates, decreases in our average selling prices for our services, or both. Similarly, our gross margin and profitability generally increase in correlation to increases in our capacity utilization rates, increases in our average selling prices for our services, or both. Due to the cyclical nature of the semiconductor industry, customer orders may change significantly, causing fluctuation in our capacity utilization rate and average selling prices for our service.

Most of our labor and overhead costs are denominated in NT dollars. However, we also incur costs of revenues and operating expenses associated with assembly and testing services in several other currencies, including Japanese yen, US dollars and RMB. In addition, a substantial portion of our capital expenditures, primarily for the purchase of assembly and testing equipment, has been, and is expected to continue to be, denominated in Japanese yen with much of the remainder denominated in US dollars.

The following table sets forth, for the periods indicated, our gross profit and our gross profit margin as a percentage of revenue.

	Year ended December 31,			
	2019	2020	2021	2021
	NT$	NT$	NT$	US$
	(in millions)			
Gross profit:				
Testing	$1,033.9	$1,651.0	$2,188.0	$ 78.9
Assembly	172.0	533.3	1,370.1	49.4
LCD, OLED and other display panel driver semiconductor assembly and testing	2,133.0	1,996.3	2,725.9	98.2
Bumping	587.2	851.6	970.0	35.0
Total	$3,926.1	$5,032.2	$7,254.0	$261.5
Gross profit margin:				
Testing	24.3%	33.0%	37.1%	37.1%
Assembly	3.3	8.9	17.2	17.2
LCD, OLED and other display panel driver semiconductor assembly and testing	30.8	28.4	33.2	33.2
Bumping	14.6	17.1	18.2	18.2
Overall	19.3%	21.9%	26.5%	26.5%

Operating Expenses

Sales and Marketing

Sales and marketing expenses consist primarily of shipping and handling expenses incurred in delivering products to our customers' designated locations and other marketing expenses, salary expenses for sales and marketing personnel, professional service fees and service support expenses.

General and Administrative

General and administrative expenses consist of salaries and related expenses for executive, finance and accounting, and management information systems personnel, professional service fees, depreciation expenses, tax and duty fee, bad debt provision and other corporate expenses. We expect general and administrative expenses to increase in absolute terms as we add personnel and incur additional expenses related to the growth of our business and operations.

Research and Development

Research and development expenses consist primarily of personnel expenses, expenditures to qualify our services for specific customers, depreciation, utilities expenses and other consulting fees and certification fees paid to third parties. Research and development expenses are recognized as they are incurred. We currently expect that research and development expenses will increase in the future as we continue to explore new technologies and service offerings. We also expect to hire additional employees in our research and development department.

Other Income (Expenses), Net

Our other income principally consists of gain on disposal of scrapped materials, royalty income, gain on disposal of items purchased on behalf of others, gain on disposal of property, plant and equipment and gains from lease modifications.

Our other expenses principally consist of impairment loss on property, plant and equipment.

Other Income

Our other income principally consists of rental income, dividend income and grant income.

Other Gains and Losses

Our other gains principally consists of foreign exchange gain, reimbursement of ADSs service charge, gain on valuation of financial assets at fair value through profit or loss and compensation income.

Our other losses principally consist of foreign exchange losses.

Profit for the Year Attributable to Equity Holders of the Company

Our profit for the year attributable to equity holders of the Company were NT$2,509 million, NT$2,379 million and NT$4,937 million (US$178 million) in 2019, 2020 and 2021, respectively. We believe our future results will be dependent upon the overall economic conditions in the markets we serve, the competitive environment in which we operate, and our ability to successfully implement our strategy, among other things. For additional information on factors that will affect our future performance, see "Item 3. Key Information—Risk Factors".

Results of Operations

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

	Year ended December 31,						
	2019		2020		2021		
	NT$	Percentage	NT$	Percentage	NT$	US$	Percentage
	(in millions, except percentage)						
Revenue	$ 20,337.9	100.0%	$ 23,011.4	100.0%	$ 27,400.0	$ 987.7	100.0%
Cost of revenue	(16,411.8)	(80.7)	(17,979.2)	(78.1)	(20,146.0)	(726.2)	(73.5)
Gross profit	3,926.1	19.3	5,032.2	21.9	7,254.0	261.5	26.5
Operating expenses	(1,561.9)	(7.7)	(1,601.3)	(7.0)	(1,817.2)	(65.5)	(6.7)
Other income (expenses), net	92.9	0.5	135.6	0.6	125.6	4.5	0.5
Operating profit	2,457.1	12.1	3,566.5	15.5	5,562.4	200.5	20.3
Non-operating income (expenses), net	565.2	2.7	(593.1)	(2.6)	473.2	17.1	1.7
Profit before income tax	3,022.3	14.8	2,973.4	12.9	6,035.6	217.6	22.0
Income tax expense	(513.7)	(2.5)	(594.4)	(2.6)	(1,098.3)	(39.6)	(4.0)
Profit for the year	$ 2,508.6	12.3%	$ 2,379.0	10.3%	$ 4,937.3	$ 178.0	18.0%
Total comprehensive income for the year	$ 2,381.3	11.7%	$ 2,494.3	10.8%	$ 5,021.5	$ 181.0	18.3%

The following table sets forth, for the periods indicated, earnings per common share and ADS.

	Year ended December 31,			
	2019	2020	2021	2021
	NT$	NT$	NT$	US$
Earnings per share—basic	$ 3.45	$ 3.27	$ 6.79	$ 0.24
Earnings per share—diluted	3.40	3.23	6.65	0.24
Earnings per equivalent ADS—basic	69.00	65.42	135.78	4.89
Earnings per equivalent ADS—diluted	68.06	64.57	132.93	4.79
Weighted average number of shares outstanding (in million shares):				
Basic	727.1	727.2	727.2	727.2
Diluted	737.1	736.9	742.9	742.9

Year Ended December 31, 2021 Compared to Year Ended December 31, 2020

Revenue. Our revenue increased by NT$4,389 million, or 19%, to NT$27,400 million (US$988 million) in 2021 from NT$23,011 million in 2020.

Revenue from testing services increased by NT$896 million, or 18%, to NT$5,899 million (US$213 million) in 2021 from NT$5,003 million in 2020, principally due to the increased customer demand and average selling prices for our service.

Revenue from assembly services increased by NT$1,962 million, or 33%, to NT$7,964 million (US$287 million) in 2021 from NT$6,002 million in 2020, primarily as a result of the increased customer demand and average selling prices for our services.

Revenue from LCD, OLED and other display panel driver semiconductor assembly and testing services increased by NT$1,188 million, or 17%, to NT$8,211 million (US$296 million) in 2021 from NT$7,023 million in 2020. This increase was principally as a result of an increase in average selling price for LCD, OLED and other display panel products and customer demand.

Revenue from bumping services increased by NT$343 million, or 7%, to NT$5,326 million (US$192 million) in 2021 from NT$4,983 million in 2020. This increase was principally due to the increased average selling prices for our services.

See "— Cost of Revenue and Gross Profit" for more information concerning our assembly and testing capacity utilization rates and the impact on our revenue, gross profit and profitability from any increases or decreases in our capacity utilization rate.

Cost of Revenue and Gross Profit. Cost of revenue increased by NT$2,167 million, or 12%, to NT$20,146 million (US$726 million) in 2021 from NT$17,979 million in 2020, primarily due to the increase of direct material expense, depreciation expenses, employee benefit expenses, direct labor expense, utilities expense, expendable equipment, operating supplies expense and inventories supplies of NT$810 million (US$29 million), NT$440 million (US$16 million), NT$317 million (US$11 million), NT$214 million (US$8 million), NT$89 million (US$3 million), NT$82 million (US$3 million), NT$80 million (US$3 million) and NT$53 million (US$2 million), respectively.

Our gross profit increased to NT$7,254 million (US$262 million) in 2021 from NT$5,032 million in 2020. Our gross margin was 26.5% in 2021, compared to 21.9% in 2020.

Our gross profit margin for testing services increased to 37.1% in 2021 from 33.0% in 2020, primarily due to the increase in revenue resulted from the increased customer demand and average selling prices for our service.

Our gross profit margin for assembly services increased to 17.2% in 2021 from 8.9% in 2020, primarily due to the increase in revenue resulted from the increased customer demand and average selling prices for our services.

Our gross profit margin for LCD, OLED and other display panel driver semiconductor assembly and testing services increased to 33.2% in 2021 from 28.4% in 2020, primarily due to the increase in revenue resulted from the increased in average selling price for LCD, OLED and other display panel products and customer demand.

Our gross profit margin for bumping services increased to 18.2% in 2021 from 17.1% in 2020, primarily due to the increase in revenue resulted from the increased average selling prices for our services.

	Year ended December 31,			
	2019	2020	2021	2021
	NT$	NT$	NT$	US$
	(in millions)			
Sales and marketing expenses	$ 56.1	$ 57.0	$ 73.9	$ 2.6
General and administrative expenses	498.2	528.8	604.1	21.8
Research and development expenses	1,007.6	1,015.5	1,139.2	41.1
Total operating expenses	$1,561.9	$1,601.3	$1,817.2	$65.5

Sales and Marketing Expenses. Sales and marketing expenses increased by NT$17 million, or 30%, to NT$74 million (US$3 million) in 2021 from NT$57 million in 2020, primarily due to the increase of employee benefit expenses and freight-out expense.

General and Administrative Expenses. General and administrative expenses increased by NT$75 million, or 14%, to NT$604 million (US$22 million) in 2021 from NT$529 million in 2020, primarily due to the increase of employee benefit expenses, depreciation expense and professional service fee.

Research and Development Expenses. Research and development expenses increased by NT$123 million, or 12%, to NT$1,139 million (US$41 million) in 2021 from NT$1,016 million in 2020, primarily due to the increase of employee benefit expenses and depreciation expense and partially offset by the decrease of R&D material expenses and utilities expenses.

Other Income (Expenses), Net. Other operating income, net decreased by NT$10 million, or 7%, to NT$126 million (US$5 million) in 2021 from NT$136 million in 2020, primarily due to the decrease of gain on disposal of property, plant and equipment, gain on disposal of items purchased on behalf of others and increase of impairment loss on property, plant and equipment and partially offset by the increase of the income from waste recycling and sale of idle assets in 2021.

	Year ended December 31,			
	2019	2020	2021	2021
	NT$	NT$	NT$	US$
	(in millions)			
Interest income	$ 64.4	$ 27.8	$ 10.0	$ 0.4
Other income	10.7	21.2	34.5	1.2
Other gains and losses	(148.4)	(323.3)	(65.8)	(2.4)
Financial costs	(180.2)	(171.5)	(131.2)	(4.7)
Share of (loss) profit of associates and joint ventures accounted for using equity method	(154.9)	(147.3)	625.7	22.6
Gain on disposal of investment accounted for using equity method	973.6	—	—	—
Total non-operating income (expenses), net	$ 565.2	$(593.1)	$ 473.2	$17.1

Non-Operating Income (Expenses), Net Non-operating income, net increased by NT$1,066 million, or 180%, to NT$473 million (US$17 million) in 2021 from non-operating expense, net of NT$593 million in 2020, primarily due to the increase of share of profit of associates and joint ventures accounted for using equity method NT$773 million (US$28 million) and decrease of foreign exchange losses of NT$266 million (US$10 million) and interest expense of NT$41 million (US$1 million).

Profit before Income Tax. As a result of the foregoing, profit before income tax increased by 103% to NT$6,036 million (US$218 million) in 2021 from NT$2,973 million in 2020.

Income Tax Expense. We had an income tax expense of NT$1,098 million (US$40 million) in 2021 compared to income tax expense of NT$594 million for 2020, primarily due to the increased of the profit before income tax and partially offset by the increase of tax benefits caused by investment deductions in 2021.

Profit for the Year Attributable to Equity Holders of the Company. As a result of the foregoing operations, the profit for the year attributable to the Company was NT$4,937 million (US$178 million) in 2021, compared to NT$2,379 million in 2020.

Year Ended December 31, 2020 Compared to Year Ended December 31, 2019

For a detailed description of the comparison of our operating results for the year ended December 31, 2020 to the year ended December 31, 2019, please refer to "Item 5. Operating and Financial Review and Prospects—Results of Operations—Year Ended December 31, 2020 Compared to Year Ended December 31, 2019" of our annual report on Form 20-F filed with the Securities and Exchange Commission on April 20, 2021.

Critical Estimates, Judgements or Assumptions

We prepare our consolidated financial statements in conformity with the IFRSs. Under the IFRSs, we are required to make certain estimates, judgments and assumptions about matters that are highly uncertain at the time those estimates, judgments and assumptions are made, and our financial condition or results of operations may be materially impacted if we use different but nonetheless reasonable estimates, judgments or assumptions about those matters for that particular period or if we change our estimates, judgments or assumptions from period to period.

Under the IFRSs, the significant accounting policies are set forth in Note 4 to our consolidated financial statements contained in this Annual Report on Form 20-F. The significant accounting policies that require us to make estimates and assumptions about the effect of matters that are inherently uncertain are discussed below.

Revenue recognition

We recognize revenue from services based on the progress towards completion of performance obligation during the service period. The progress towards completion on assembly services, services for LCDD and Bumping are measured by the actual input costs relative to estimate total expected input costs. The progress towards completion on testing services is measured by the actual incurred testing volume. We provide assembly and testing services based on customer's specification, thus, the input costs incurred to assembly and testing volume completed in testing services are not linear over the duration of these services. Customer payment on assembly and testing services is based on predetermined payment schedule. A contract asset is recognized when the Group provides services in excess of customer's payment. As of December 31, 2020 and 2021, the amounts of contract assets recognized were NT$389 million and NT$400 million (US$14 million), respectively.

Senior Management's Discussion with the Audit Committee

Our management has discussed the critical accounting estimates, judgements or assumptions described above with the audit committee of our board of directors and the audit committee has reviewed our disclosure relating to the critical accounting estimates, judgements or assumptions in this section.

Impact of Foreign Currency Fluctuations and Governmental or Political Factors

For a discussion of the impact of foreign currency fluctuations and governmental economics, fiscal, monetary or political policies or factors that may directly or indirect impact us, see "Item 3. Key Information—Risks Factors—Risks Relating to Our Business—Fluctuations in exchange rates could result in foreign exchange losses" and "Item 3. Key Information—Risks Factors—Risks Relating to Countries in Which We Conduct Operations".

Liquidity and Capital Resources

Since our inception, we have funded our operations and growth primarily through the issuance of equity, a mixture of short- and long-term bank loans and cash flow from operations. As of December 31, 2021, our primary sources of liquidity were cash and cash equivalents of NT$5,906 million (US$213 million), short-term bank loans of NT$5,277 million (US$190 million) available to us in undrawn facilities, which have expired or will expire from March 2022 to November 2022, and long-term bank loans of NT$8,777 million (US$316 million) available to us in undrawn facilities, which will expire from May 2023 to December 2023. We have taken the following steps to meet our liquidity, capital spending and other capital needs.

In May 2018, the Company obtained a syndicated loan facility from banks in Taiwan in the amount of NT$12 billion for a term of five years, which was used to repay the existing debt of financial institutions and broaden the Company's working capital. See "Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Our significant amount of indebtedness and interest expense will limit our cash flow and could adversely affect our operations" for additional information.

On January 1, 2019, MOEA implemented the "Action Plan for Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan" and companies are subsidized with preferential interest loans for qualified investment projects. The Company has obtained the qualification from the MOEA, and signed loan agreements with financial institutions during January 2020 to November 2021 with the line of credit amounted to NT$14.64 billion (US$528 million) and terms from seven to ten years. As of the issue date of this report, the Company has used NT$9,463 million (US$341 million) of the credit line.

The following table summarizes our contractual obligations and commitments as of December 31, 2021, or the periods indicated:

	Payments Due by Period				
Contractual Obligations	**Total**	**Within 1 year**	**1 to 3 years**	**3 to 5 years**	**Over 5 years**
	NT$	**NT$**	**NT$**	**NT$**	**NT$**
			(in millions)		
Short-term bank loans[(1)]	$ 734	$ 734	$ —	$ —	$ —
Long-term bank loans[(1)]	9,766	115	2,818	4,568	2,265
Lease liabilities[(1)]	1,048	182	120	54	692
Capital commitments	2,629	2,629	—	—	—
Total contractual cash obligations	$14,177	$3,660	$ 2,938	$ 4,622	$2,957

Note:
(1) Includes interest payments. Assumes level of relevant interest rates remains at December 31, 2021, level throughout all relevant periods.

In addition to the commitments set forth in the contractual obligations table above, we have certain outstanding purchase orders relating to the procurement of raw materials for which there are no definite delivery dates or deadlines

Liquidity

The following table sets forth our cash flows with respect to operating activities, investing activities, financing activities and the effect of exchange rate changes on cash for the periods indicated.

	Year ended December 31,			
	2019	2020	2021	2021
	NT$	NT$	NT$	US$
	(in millions)			
Capital expenditures	$ 4,896.7	$ 4,133.6	$ 6,552.7	$ 236.2
Depreciation and amortization	3,731.9	4,175.5	4,634.1	167.1
Net cash generated from (used in):				
Operating activities	$ 5,982.4	$ 5,940.2	$ 7,319.7	$ 263.9
Investing activities	(4,237.8)	(3,799.3)	(6,015.4)	(216.9)
Financing activities	(1,677.3)	(2,720.2)	494.4	17.8
Effect of exchange rate changes	(5.7)	(11.1)	(6.2)	(0.2)
Net increase (decrease) in cash and cash equivalents	$ 61.6	$ (590.4)	$ 1,792.5	$ 64.6

Net Cash Generated from Operating Activities

Net cash generated from operating activities totaled NT$7,320 million (US$264 million) in 2021, compared to NT$5,940 million in 2020. Net cash generated from operating activities was impacted by a profit before income tax of NT$6,036 million (US$218 million) with depreciation expenses of NT$4,634 million (US$167 million) and the share of profit of associates and joint ventures accounted for using equity method of NT$626 million (US$23 million) in 2021 compared to a profit before income tax of NT$2,973 million with depreciation expenses of NT$4,176 million and the share of loss of associates and joint ventures accounted for using equity method of NT$147 million in 2020. The decrease in net cash generated from operating activities was primarily due to an increase of inventory of NT$1,105 million (US$40 million) in 2021 compared to NT$334 million in 2020, an increase of financial assets at fair value through profit or loss of NT$291 million (US$10 million) in 2021 compared to NT$28 million in 2020 and income tax paid which was NT$692 million (US$25 million) in 2021 compared to NT$276 million in 2020.

Net Cash Used in Investing Activities

Net cash used in investing activities totaled NT$6,015 million (US$217 million) in 2021, compared to NT$3,799 million in 2020. The increase in net cash used in investing activities primarily resulted from the acquisition of property, plant and equipment of NT$5,882 million (US$212 million) in 2021, compared to NT$3,961 million in 2020, the increase in other non-current assets of NT$501 million (US$18 million) in 2021, compared to NT$11 million in 2020 and partially offset by the decrease in financial assets at amortized cost of NT$188 million (US$7 million) in 2021, compared to an increase in financial assets at amortized cost of NT$17 million in 2020.

Net Cash Generated from (Used in) Financing Activities

Net cash generated from financing activities totaled NT$494 million (US$18 million) in 2021, compared to net cash used in financing activities NT$2,720 million in 2020. The increase in net cash generated from financing activities was primarily the net proceeds from long-term bank loans of NT$1,652 million (US$60 million) in 2021, compared to the net payment of long-term bank loans of NT$1,327 million in 2020, the net proceeds from short-term bank loans of NT$732 million (US$26 million) in 2021 compared to the nil in 2020 and partially offset by the cash distribution of NT$1,600 million (US$58 million) in 2021, compared to NT$1,309 million in 2020 and the payment on lease liabilities of NT$290 million (US$10 million) in 2021, compared to NT$85 million in 2020.

For a detailed description of the comparison of our cash flows for the year ended December 31, 2020 to the year ended December 31, 2019, please refer to “Item 5. Operating and Financial Review and Prospects —Liquidity and Capital Resources” of our annual report on Form 20-F filed with the Securities and Exchange Commission on April 20, 2021.

Capital Resources

Capital expenditures in 2019 were funded by NT$5,982 million in cash flows from operating activities. Capital expenditures in 2020 were funded by NT$5,940 million in cash flows from operating activities. Capital expenditures in 2021 were funded by NT$7,320 million (US$264 million) in cash flows from operating activities.

Steps taken with respect to generating additional working capital and to saving cash are further discussed under "—Liquidity and Capital Resources".

Loans

As of December 31, 2021, we had long-term bank loans of NT$9,413 million (US$339 million) (including current portions of such long-term bank loans of NT$47 million (US$2 million)). As of December 31, 2021, NT$7,654 million (US$276 million) of our long-term bank loans were collateralized by land, buildings and equipment. Our long-term bank loans were floating rate loans with a rate between 0.45% to 1.7895% as of December 31, 2021. Syndicated bank loan is repayable semi-annually from November 2018 to May 2023, and government granted loan is repayable monthly from March 2023 to November 2031.

We had entered into the following syndicated loan and long-term loans facilities:

- On May 15, 2018, we obtained a syndicated loan from banks in Taiwan in the amount of NT$12 billion with a term of five years. This loan facility is secured by existing land and buildings and equipment. As of the date of this Annual Report on Form 20-F, this loan facility was drawn of NT$8,400 million and fully repaid in March 2022.

Certain of our loan agreements and indentures contain covenants that, if violated, could result in the obligations under these agreements becoming due prior to the originally scheduled maturity dates. These covenants include financial covenants that require us to:

- maintain current assets to current liabilities ratio above 1:1;
- maintain total indebtedness to shareholders' equity (excluding intangible assets) ratio below 1.5:1; and
- maintain the profit before interest, taxes, depreciation and amortization to gross interest expense ratio above 2.5:1.

We were in compliance with these financial covenants ratio requirements for 2015 to 2021.

In addition, a substantial portion of our short-term and long-term borrowings may be subject to repayment upon a material deterioration of our financial condition, results of operations or our ability to perform under the loan agreements.

Set forth below are the maturities of our long-term bank loans outstanding as of December 31, 2021:

	As of December 31, 2021	
	NT$	US$
	(in millions)	
During 2022	$ 47	$ 2
During 2023	1,051	38
During 2024	1,628	59
During 2025	2,231	80
During 2026 and onwards	4,456	160
	$ 9,413	$ 339

As of December 31, 2021, certain of our property, plant and equipment and non-current financial assets at amortized cost with an aggregate net book value of NT$13,042 million (US$470 million) and NT$37 million (US$1 million), respectively, were pledged as collateral mainly for long-term bank loans and leases.

On January 1, 2019, MOEA implemented the "Action Plan for Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan" and companies are subsidized with preferential interest loans for qualified investment projects. The Company has obtained the qualification from the MOEA, and signed loan agreements with financial institutions during January 2020 to November 2021 with the line of credit amounted to NT$14.64 billion (US$528 million) and terms from seven to ten years. As of the issue date of this report, the Company has used the credit line of the aforementioned project loans for amount of NT$9,463 million (US$341 million).

As of December 31, 2021, we had unsecured short-term loans in the total amount of NT$732 million (US$26 million), which was due from January 2022 to May 2022.

We believe our current cash and cash equivalents, cash flows from operations and available credit facilities will be sufficient to meet our capital spending, commitments and other capital needs through the one year after the issuance date of financial statements. There can be no assurance regarding these matters, however, considering prevailing global economic conditions which continue to have a negative impact on our ability to accurately forecast our revenues, results of operations and cash position. See "Item 3. Key Information—Risk Factors—Risks Relating to Our Business—Our significant amount of indebtedness and interest expense will limit our cash flow and could adversely affect our operations".

Research and development, patents and licenses

See the discussion under "Item 4. Information on the Company—Research and Development".

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, 2021 to December 31, 2021 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 be not necessarily indicative of future operating results or financial conditions.

Off-Balance Sheet Arrangements

As of December 31, 2021, we had no off-balance sheet arrangements.

Taxation

The Company is entitled to tax incentives generally available to Taiwan companies under the ROC Statute for Industrial Innovation, a profit-seeking enterprise may deduct up to (i) 15% of its research and development expenditures from its income tax payable for the fiscal year in which these expenditures are incurred; or (ii) 10% of its research and development expenditures from its income tax payable for the fiscal year in which these expenditures are incurred or the following two years. However, the deduction may not exceed 30% of the income tax payable for that fiscal year. In 2019, 2020 and 2021, tax credits resulted in tax savings for the Company of approximately NT$10 million, NT$6 million and NT$9 million (US$324 thousand), respectively.

For the purpose of optimizing industrial structure, the Executive Yuan of the ROC government encourages domestic companies to make multiple innovations along with the applications of the smart technology. Companies may deduct to the income tax payable for the current year up to 5% of the annual spending or the income tax payable for the three years from current year up to 3% of the annual spending. However, the deduction may not exceed 30% of the income tax payable for that fiscal year. Companies are eligible for the investment credit under the preceding paragraph and other types of investment credit in a year, the total amount creditable in that year shall not exceed 50% of the income tax payable for the current year, unless the current year is the final year for using such credit and no cap is imposed on the creditable amount for that year according to other laws. In 2021, tax credits resulted in tax savings for the Company of approximately NT$50 million (US$2 million).

Companies are encouraged to use their earnings to make substantial investment or upgrade production technology or the quality of products or services, if companies use a certain amount of their undistributed earnings to construct or purchase buildings, software or hardware equipment, or technology for use in production or operation as needed for operation of its business or ancillary business within three years from the year after such earnings are derived, such investment amounts may be deducted from the undistributed earnings in calculation of the current year's undistributed earnings.

The ROC government enacted the alternative minimum tax ("AMT") Act that became effective on January 1, 2006. The AMT imposed under the AMT Act is a supplemental tax which is payable if the income tax payable pursuant to the ROC Income Tax Act is below the minimum amount prescribed under the AMT Act. The taxable income for calculating the AMT includes most income that is exempted from income tax under various legislations, such as tax holidays and investment tax credits. The AMT rate for business entities is 12%. However, the AMT Act grandfathered certain tax exemptions and tax credits granted prior to the enactment of the AMT. In 2019, 2020 and 2021, AMT Act had no effects on the tax expenses of the Company since the income tax payable is above the minimum amount prescribed under the AMT Act.

The amendment to the Income Tax Act has been approved and promulgated in February 2018 to raise the profit-seeking enterprise income tax rate from 17% to 20%, decrease the tax rate on unappropriated retained earnings from 10% to 5%, and abandon the imputation tax credit account effective from fiscal year starting January 1, 2018.

Item 6. Directors, Senior Management and Employees

Directors and Senior Management

According to our articles of incorporation, the number of directors must not be less than nine and must not be greater than eleven. Further, among the directors, there shall be three to five independent directors, provided that the number of independent directors shall not be less than one-fifth of the total number of directors. Our board of directors currently comprises of nine directors who were elected by our shareholders. Of our current nine directors, five are independent directors. The chairman of our board is appointed among the members of our board. The term of office for directors is three years.

Pursuant to ROC Securities and Exchange Act, a public company is required to either establish an audit committee or to have supervisors. A public company's audit committee should be composed of all of its independent directors but not less than three, of which at least one member should have accounting or related financial management expertise, and the relevant provisions under the ROC Securities and Exchange Act, the ROC Company Act and other laws applicable to the supervisors are also applicable to the audit committee. We are also required to establish a compensation committee which must be composed of qualified independent members as defined under local law. The Company has established its audit committee and compensation committee.

Pursuant to the ROC Company Act, a person may serve as our director in his or her personal capacity or as the representative of another legal entity. A director who serves as the representative of a legal entity may be removed or replaced at any time at the discretion of that legal entity, and the replacement director may serve the remainder of the term of office of the replaced director. Since July 12, 2021, of our current nine directors, two directors are representatives of Siliconware Precision which is our largest shareholder.

The following table sets out the names of our directors and executive officers, their positions with our company and their ages as of March 31, 2022. The business address for our directors and executive officers is No. 1, R&D Road 1, Hsinchu Science Park, Hsinchu, Taiwan, ROC.

Name	Age	Position	Term Expires
Shih-Jye Cheng	63	Chairman and Director / President	2024
Kun-Yi Chien	66	Director (representative, Siliconware Precision)	2024
Bright Yeh	55	Director (representative, Siliconware Precision)	2024
Silvia Su	51	Director / Vice President, Finance and Accounting Management Center / Corporate Governance Officer	2024
Chin-Shyh Ou	64	Independent Director	2024
Kuei-Ann Wen	61	Independent Director	2024
Hui-Fen Chan	53	Independent Director	2024
Yeong-Her Wang	65	Independent Director	2024
Hong-Tzer Yang	61	Independent Director	2024
Vincent Hsu	53	Executive Vice President	—
D.Y. Tsai	51	Executive Vice President	—

Shih-Jye Cheng has served as a director and president of the Company since July 1997 and the chairman of the Company since June 2003. He is the sibling of president of ChipMOS USA. He also has been the director of ChipMOS USA since its inception. He has been the vice chairman of Unimos Shanghai since February 2017. He has been the representative and director of Hao Hsiang Investment Co., Ltd., Chin Hsiang Investment Co., Ltd. and Hao Yen Investment Co., Ltd. since April 2018, January 2020 and January 2020, respectively. He was the chairman of ThaiLin from December 2002 to June 2013, the chairman of CHANTEK ELECTRONIC CO., LTD. from 2002 to November 2005, the chairman of ChipMOS Logic TECHNOLOGIES INC. from January 2004 to November 2005, the chairman of Unimos Shanghai from 2002 to June 2005 and the chairman of Advanced Micro Chip Technology Co., Ltd. from February 2003 to April 2004. He was a division head of the back-end operation of Mosel from 1992 to 1997. Mr. Cheng has a master's degree in business administration from Saginaw Valley State University.

Kun-Yi Chien has served as one of our directors since July 2021. He serves as the director of Siliconware Precision since April 2018. He also serves as the chief administration officer and the senior vice president of Siliconware Precision. He has been the director of Yann Yuan Investment Co., Ltd. since October 2019. He served as the deputy director of Dah Shan Electric Wire & Cable Corp. from April 1983 to June 1989. He graduated from Tunghai University with an EMBA.

Bright Yeh has served as one of our directors since June 2019. He has served as a vice president in Siliconware Precision since November 2017. Mr. Yeh has been the director of Siliconware Technology (SuZhou) Ltd. since November 2019. He served as the enterprise operation planning division director of United Microelectronics Corp. from June 2004 to February 2009. He graduated from National Tsing Hua University in Taiwan with a master's degree in Industrial Engineering.

Silvia Su has served as one of our directors since July 2021. She has served as the vice president of finance and accounting management center of the Company since July 2018 and as the corporate governance officer since March 2021. She has been the director of ChipMOS BVI since February 2018 and the director of ChipMOS USA since July 2013. She also has been the supervisor of ChipMOS Shanghai since March 2020 and the supervisor of Unimos Shanghai since October 2017. Ms. Su has been the representative and director of Tsai Fu Investment Co., Ltd. since February 2020. She joined the Group from 2000. She was the director of finance division of ThaiLin from June 2013 till ThaiLin was merged with and into the Company in June 2015. She holds a bachelor's degree in Accounting from National Chengchi University and a master's degree in Business Administration from the University of Leeds.

Chin-Shyh Ou has served as one of our directors since June 2007. Mr. Ou has been the independent director, audit committee member and compensation committee member of Tsang Yow Industrial Co., Ltd. since June 2018. In 1998, he joined National Chung Cheng University as a professor of the Department of Accounting and Information Technology. He has been an honorary professor of the Department of Accounting and Information Technology at National Chung Cheng University since February 2018. Mr. Ou earned a Ph.D. degree in Business Administration (Accounting) from the University of Minnesota, USA. Mr. Ou holds several professional licenses and qualifications, including U.S. Certified Public Accountant and Certified Internal Auditor and Taiwan Certified Public Accountant.

Kuei-Ann Wen has served as one of our directors since June 2015. Ms. Wen has been the professor of Institute of Electronics, the chief executive officer of Social Responsibility Development Office and the professor of International College of Semiconductor Technology at National Yang Ming Chiao Tung University since February 2002, August 2012 and August 2016, respectively. She also has served as the independent director, audit committee member and compensation committee member of Xintec Inc. since June 2016. Ms. Wen was the associate dean of Office of Research and Development at National Chiao Tung University from 2011 to 2016 and she also was the associate dean of College of Electrical and Computer Engineering at National Chiao Tung University. She holds a Ph.D. degree from Electrical Engineering at National Cheng Kung University.

Hui-Fen Chan has served as one of our directors since July 2021. She has been the independent director, audit committee member and compensation committee member of ITEQ Corporation since June 2009. She also has been the independent director, audit committee member and compensation committee chairman of STARK Technology Inc. since June 2016. She has been the independent director of FORMOSA I WIND POWER CO., LTD. since February 2020 and the director of Raku Co., Ltd. since June 2020. She was the general counsel of Altek Corporation from April 2010 to July 2018 and the compensation committee member and M&A committee member of MAG.LAYERS Scientific-Technics Co., Ltd. from June 2015 to June 2018. She was the general counsel of Siliconware Precision from March 2006 to March 2010. She was the partner of Hong-Li Attorneys-at-Law from April 1994 to June 2004 and the associate attorney of Lee & Li Attorneys-at-Law from April 1992 to March 1994. Ms. Chan has a LL.B. degree from National Taiwan University and a LL.M. degree from Boston University School of Law. She was admitted to practice law in Taiwan and New York, USA.

Yeong-Her Wang has served as one of our directors since July 2021. He served as the independent director and audit committee member of the Company from June 2007 to June 2013. He was the independent director and audit committee member of ChipMOS Bermuda, since July 2004 and December 2004, respectively, until ChipMOS Bermuda was merged with and into the Company. He has been a professor of the Department of Electrical Engineering and Institute of Microelectronics of National Cheng Kung University since August 1992, the chairman of Foundation of NCKU Tainan Alumni Association since January 2014, and the director of TSMC-NCKU Joint R&D Center since July 2020. He has been the independent director, audit committee member and compensation committee member of Unictron Technologies Corp. since October 2020. He served as the president of National Applied Research Laboratories from October 2016 to May 2020. He was the director of Alumni Association Center, associate dean of the College of Engineering and the chairman of the Department of Electrical Engineering of National Cheng Kung University from February 2005 to January 2007, October 1999 to July 2003 and August 1995 to July 1996, respectively. He was the independent director, audit committee member and compensation committee member of Darfon Electronics Corp. and Giga Solution Tech Co. from May 2006 to June 2015 and September 2007 to November 2016, respectively. Mr. Wang holds Ph.D., master's and bachelor's degrees from National Cheng Kung University.

Hong-Tzer Yang has served as one of our directors since July 2021. He has been the professor of the Department of Electrical Engineering, the deputy director of Research Center for Energy Technology and Strategy, and the director of Research Center for Energy Technology for Sustainability at National Cheng Kung University, since July 2007, February 2013, and August 2014, respectively. He has been the director of Taiwan Electric Research & Testing Center since March 2021. He also has been the independent director, audit committee member, compensation committee member, and corporate governance committee member of Padauk Technology Co., Ltd., since July 2021, July 2021, June 2021, and November 2021, respectively. He has been the director of AeroVision Avionics Inc. since July 2021. He was the professor of the Department of Electrical Engineering at Chung Yuan Christian University from August 2000 to July 2007. He also was the independent director, audit committee member, and compensation committee member of Spirox Corporation from June 2002 to June 2012 and from June 2015 to August 2017, June 2015 to August 2017, and June 2015 to August 2017, respectively. He has a Ph.D. degree from Electrical Engineering at National Tsing Hua University in Taiwan.

Vincent Hsu has served as the executive vice president since July 2020. He has been our vice president of LCDD production group of the Company since March 2012. He has been the director of JMC since October 2014. He served as senior project leader engineer of Philips Electronic Building Elements (Taiwan) Ltd. He served the assistant in National Cheng Kung University. He received a master's degree in Electrical Engineering from National Sun Yat-sen University in Taiwan.

D.Y. Tsai has served as the executive vice president since July 2020. He has been our vice president of Q.R.A. center of the Company from June 2014 to June 2020. He served as the head of Q.R.A. center of the Company since 2009. He has been the chairman and president of ChipMOS Shanghai since March 2020. He also has served as the representative and director of Yung Hsiang Investment Co., Ltd. since February 2020. He served in Gloria Material Technology Corp. and Philips Electronic Building Elements (Taiwan) Ltd. Mr. Tsai holds a master degree from the Resources Engineering of National Cheng Kung University in Taiwan.

Compensation

The aggregate compensation paid in 2021 to our directors and our executive officers, including cash and accrued pension payable upon retirement, was approximately NT$145 million (US$5 million).

Share Ownership

The following table sets forth certain information as of March 31, 2022 with respect to our common shares owned by our directors and executive officers.

Name	Number of Common Shares Held	Percentage of Shares Issued
Shih-Jye Cheng	6,150,161	0.85%
Kun-Yi Chien (representative, Siliconware Precision)	78,910,390	10.85%
Bright Yeh (representative, Siliconware Precision)	78,910,390	10.85%
Silvia Su	340,101	0.05%
Chin-Shyh Ou	—	—
Kuei-Ann Wen	—	—
Hui-Fen Chan	—	—
Yeong-Her Wang	—	—
Hong-Tzer Yang	—	—
Vincent Hsu	220,130	0.03%
D.Y. Tsai	262,572	0.04%

Compensation Committee

We do not provide our directors with any benefits upon termination of employment. Our compensation committee currently consists of Ms. Kuei-Ann Wen, Mr. Yeong-Her Wang and Mr. Chin-Shyh Ou, all of whom are independent directors. This committee reviews and recommends to our board of directors the compensation of all our directors and officers. The compensation committee is required to meet at least semi-annually.

Audit Committee

The audit committee currently consists of Mr. Chin-Shyh Ou, Ms. Kuei-Ann Wen, Ms. Hui-Fen Chan, Mr. Yeong-Her Wang, and Mr. Hong-Tzer Yang, all of whom are independent directors. Mr. Chin-Shyh Ou serves as a financial expert to the audit committee. Our audit committee charter was adopted on June 28, 2007 and amended on November 10, 2020. The audit committee is required to meet at least once every quarter. Our audit committee charter grants the audit committee the authority to conduct any investigation which it deems appropriate to fulfill its responsibilities. It has direct access to all our book, records, facilities, and personnel, as well as our registered public accountants. It has the authority to, among other things, appoint, terminate and approve all fees to be paid to our registered public accountants. The audit committee also has the authority to engage special legal, accounting, or other consultants it deems necessary in the performance of its duties. Beginning on January 1, 2007, the audit committee also assumed the responsibilities of supervisors pursuant to the ROC Securities and Exchange Act.

Employees

The following table sets forth, as of the dates indicated, the number of our full-time employees serving in the functions indicated:

	As of December 31,			As of March 31,
Function	2019	2020	2021	2022
General operations	2,958	2,891	2,995	2,941
Quality control	285	185	55	53
Engineering	1,403	1,352	1,436	1,414
Research and development	645	671	680	661
Sales, administration and finance	133	132	132	140
Others	268	241	230	240
Total	5,692	5,472	5,528	5,449

The following table sets forth, as of the dates indicated, a breakdown of the number of our full-time employees by geographic location:

	As of December 31,			As of March 31,
Location	2019	2020	2021	2022
Hsinchu Production Group	2,139	2,116	2,158	2,126
Southern Taiwan Production Group	3,549	3,349	3,363	3,316
Shanghai	—	3	3	3
United States	4	4	4	4
Total	5,692	5,472	5,528	5,449

Our employees are not covered by any collective bargaining agreements. We have not experienced any strikes or work stoppages by our employees and believe that our relationship with our employees is good.

Item 7. Major Shareholders and Related Party Transactions

Major Shareholders

The following table and information set out certain information known to us concerning the record ownership of our shares as of April 11, 2020, April 2, 2021 and March 28, 2022 (our most recent record date) (1) the largest ten shareholders of the Company as of such record date and (2) our directors and executive officers as a group.

Name of Beneficial Owners	April 11, 2020		April 2, 2021		March 28, 2022[1]	
	Numbers of Shares Owned	Percentage of Shares Owned	Numbers of Shares Owned	Percentage of Shares Owned	Numbers of Shares Owned	Percentage of Shares Owned
Depositary[2]	94,534,754	13.00%	84,417,014	11.61%	88,642,054	12.19%
Siliconware Precision Industries Co., Ltd.	148,910,390	20.48%	78,910,390	10.85%	78,910,390	10.85%
Yann Yuan Investment Co., Ltd.	*	*	55,000,000	7.56%	41,200,000	5.67%
Chunghwa Post Co., Ltd.	*	*	*	*	13,663,000	1.88%
Mitsubishi Ufj Morgan Stanley Securities Co., Ltd.—Equity Trading Division (Proprietary Trading Desk) For Tri—Party Sbl Trading	*	*	*	*	12,218,000	1.68%
Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds	8,330,568	1.15%	8,352,148	1.15%	8,305,148	1.14%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	11,102,348	1.53%	8,685,348	1.19%	7,682,348	1.06%
Ensign Peak Advisors, Inc.	*	*	*	*	6,856,347	0.94%
Norges Bank	12,955,840	1.78%	8,512,840	1.17%	6,765,840	0.93%
Acadian Emerging Markets Small Cap Equity Fund LLC	*	*	*	*	6,579,649	0.90%
Directors and executive officers, as a group[3]	155,519,705[4]	21.39%[4]	86,246,467[5]	11.87%[5]	85,883,354[6]	11.82%[6]

Notes:

* Was not one of the largest ten shareholders of the Company as of the applicable record date.

(1) Our most recent record date.

(2) As record owner of our ADSs. With effect from October 31, 2016, Citibank, N.A. acts as the depositary.

(3) Calculated as the sum of: (a) with respect to directors and executive officers who are serving in their personal capacity, the number of shares held by such directors and executive officers and (b) with respect to directors who are serving in the capacity as legal representatives, the number of shares owned by such institutional or corporate shareholder for which director is a legal representative.

(4) As of March 31, 2020.

(5) As of March 31, 2021.

(6) As of March 31, 2022.

Except for holders of our ADSs, none of our major shareholders have different voting rights from those of other shareholders.

As of March 31, 2022, a total of 727,240,126 common shares were outstanding. With certain limited exceptions, holders of common shares that are not ROC persons are required to hold their common shares through their custodians in the ROC. As of March 31, 2022, 88,642,054 common shares were registered in the name of a nominee of Citibank, N.A., the depositary under our ADSs Deposit Agreement. Citibank, N.A., has advised us that, as of March 31, 2022, 4,432,102 ADSs, representing 88,642,054 common shares, were held of record by Cede & Co. and 43 other registered shareholders domiciled in and outside of the United States. We have no further information as to common shares held, or beneficially owned, by US persons.

Related Party Transactions

Unimos Microelectronics (Shanghai) Co., Ltd.

We conducted our PRC operations through Unimos Shanghai, the 45.02% owned affiliate of ChipMOS BVI. On November 30, 2016, the Company and Tsinghua Unigroup agreed to form a joint-venture. Under the joint-venture, the Equity Interest Transfer Agreements among ChipMOS BVI, a wholly-owned subsidiary of the Company, and some strategic investors which including Unigroup Guowei, a subsidiary of Tsinghua Unigroup, were executed. Pursuant to the agreement, ChipMOS BVI, would sell, for the aggregate purchase price of approximately RMB 484 million, 54.98% equity interests of its wholly-owned subsidiary, Unimos Shanghai, to the strategic investors, and Unigroup Guowei would hold 48% equity interests of Unimos Shanghai, and the other strategic investors, including a limited partnership owned by Unimos Shanghai's employees, would own approximately 6.98% equity interest of Unimos Shanghai. Unimos Shanghai is no longer the subsidiary of the Company following the sale of equity interests, which was completed in March 2017. On December 16, 2019, Unigroup Guowei and one of the strategic investor sold and transferred all the equity interests of Unimos Shanghai to Yangtze Memory, which holds 50% equity interests of Unimos Shanghai after completed transaction. On May 11, 2020, one of the strategic investor sold and transferred all equity interests of Unimos Shanghai to Yangtze Memory, which holds 50.94% equity interests of Unimos Shanghai after completed transaction.

Under a technology transfer agreement dated October 3, 2011 which became effective on August 1, 2012, ChipMOS Bermuda licensed certain technologies and systems, and agreed to provide certain technical support and consulting services to Unimos Shanghai relating to those technologies and systems, and Unimos Shanghai will pay an aggregate of RMB 27 million to ChipMOS Bermuda by forty installments on the last day of each quarter during the term of this agreement. Following the merger of ChipMOS Bermuda and the Company which was effective on October 31, 2016, the Company is the surviving company to provide Unimos Shanghai with technical support and consulting services.

Pursuant to the Technology Transfer and License Agreement and Addendums dated May 27, 2016, August 5, 2016 and January 19, 2017 entered between the Company and Unimos Shanghai, the Company agreed to transferred certain technologies for LCD driver IC assembly and testing and wafer bumping and provide certain technical assistance and consulting services to Unimos Shanghai, and Unimos Shanghai agreed to pay the Company the license fee in the amount of US$1 million and a running royalty for the foregoing license equivalent to 0.5% of the total earnings of the sales (excluding rebate, refund and rework) of the licensed technologies with a cap of US$15 million.

On April 1, 2020, the Company and Unimos Shanghai mutually agreed to terminate the technology transfer agreement.

Item 8. Financial Information

Consolidated Financial Statements and Other Financial Information

Please see "Item 18. Financial Statements" and pages F-1 through F-69.

Legal Proceedings

We were not involved in any material litigation in 2021 and are not currently involved in any material litigation.

For certain information regarding legal proceedings relating to certain of our current and former directors, see "Item 6. Directors, Senior Management and Employees—Directors and Senior Management".

Dividends and Dividend Policy

The following table sets forth the distribution per share paid during each of the years indicated in respect of common shares outstanding on the record date eligible to the payment of those distributions. During 2019, 2020 and 2021, we paid cash distributions in the amounts of NT$1.20, NT$1.80 and NT$2.20 (US$0.08), respectively.

	Cash Distributions per Share (NT$)	Stock Dividends per Share (NT$)	Total Shares Issued as Stock Dividends	Outstanding Common Shares at Year End
2019	1.20	—	—	727,240,126
2020	1.80	—	—	727,240,126
2021	2.20	—	—	727,240,126

Under the Company's articles of incorporation, a proposal on the dividend distribution shall be submitted by the broad of directors annually to the shareholders' general meeting, and be determined based on factors including the past years' profit, current and future investment environment, capital needs, market competition, and budgets, with an aim to pursuing shareholders' interests and balancing the dividend distribution and the long-term financial plan. The distribution of profits can be made in the form of cash or stock dividends, provided that the cash dividend shall account for at least 10% of the total profit distributed as dividends in the given year.

Item 9. The Offer and Listing

Listing

The principal trading market for our common shares is the TWSE. Our common shares have been listed on the TWSE under the symbol "8150" since April 11, 2014, and the ADSs have been listed on the NASDAQ under the symbol "IMOS" since November 1, 2016. The outstanding ADSs are identified by the CUSIP number 16965P202.

Item 10. Additional Information

The following information relates to our shares, including summaries of certain provisions of the Company's articles of incorporation, the ROC Company Act, and Securities and Exchange Act.

General

The authorized share capital of the Company will be as provided in its articles of incorporation, of which such number of shares as to be determined will be issued.

Dividends

Except under limited circumstances, the Company will not permitted to distribute dividends or make other distributions to shareholders in any given year in which it did not record net income or retained earnings (excluding reserves). The ROC Company Act also requires that 10% of annual net income (less prior years' losses, if any, and applicable income taxes) be set aside as a legal reserve until the accumulated legal reserve equals the paid-in capital of the Company. In addition, the articles of incorporation of the Company provides that before a dividend is paid out of the Company's annual net income:

- up to 0.5% of the Company's annual profits (less prior years' accumulated losses, if any) should be paid to the directors of the Company as compensation; and
- 10% of the annual profits (less prior years' accumulated losses, if any) should be paid to the employees of the Company. The employee compensation may be paid in shares or in cash as determined by a majority of directors in attendance at a meeting attended by over two-thirds of the board of directors and such resolution shall be reported to the shareholders' meeting. Such employees include those of the Company's subsidiaries.

At the annual general meeting of shareholders, the board of the Company will submit to the shareholders for their approval any proposal for the distribution of dividends or the making of any other distribution to shareholders from the Company's net income (less prior years' losses and legal and special reserves plus the accumulated undistributed profit at the beginning of the preceding fiscal year and the adjusted undistributed profit of the given fiscal year) for the preceding fiscal year. All the outstanding and fully paid shares of the Company 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. The articles of incorporation of the Company provides that cash dividend distribution should not be lower than 10% of the total dividend amount.

The Company will also be permitted to make distributions to its shareholders in cash or in the form of common shares from reserves if it has no accumulated loss. However, the distribution payable out of the Company's legal reserve can only come from the amount exceeding 25% of the total paid-in capital.

Changes in Share Capital

Under the ROC Company Act, any change in the authorized share capital of a company limited by shares requires an amendment to its articles of incorporation, which in turn requires approvals each at the meeting of the board of directors and shareholders' meeting. In the case of a public company such as the Company, it must also make an effective registration with the FSC and an amendment to the corporate registration with the Hsinchu Science Park Bureau of the Ministry of Science and Technology. Authorized but unissued common shares may be issued, subject to the applicable ROC law, upon terms as the board of the Company may determine. See "Item 5. Operating and Financial Review and Prospects—Liquidity and Capital Resources" for additional information.

Preemptive Rights

Under the ROC Company Act, when an ROC 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 the applicable ROC law.

In addition, in accordance with the ROC 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.

Meeting of Shareholders

The Company will be required to hold an annual general meeting of shareholders within six months following the end of each fiscal year. These meetings are generally held in Hsinchu, Taiwan. Any shareholder who holds 1% or more of the Company's issued and outstanding shares may submit one proposal, in writing or by electronic means designated by the Company, for discussion at the annual general meeting. Extraordinary 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 issued and outstanding shares for a period of one year or longer. Any one or more shareholders who have held in aggregate more than half of the issued and outstanding shares for at least three consecutive months may convene an extraordinary shareholders' meeting. Shareholders' meetings may also be convened by the audit committee. Notice in writing of shareholders' meetings, 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. If a company adopts a nomination procedure for election of directors in its articles of incorporation, shareholders representing 1% or more of the total issued shares of such company may submit a candidate list in writing to the Company along with relevant information and supporting documents in accordance with the requirements under the ROC Company Act. Under the Company's articles of incorporation, the Company adopted such nomination procedures for election of all directors.

Voting Rights

Under the ROC Company Act, except under limited circumstances, shareholders have one vote for each common share held. Under the ROC Company Act, the directors are elected at a shareholders' meeting through cumulative voting.

In general, a resolution can be approved by the holders of at least a majority of our shares represented at a shareholders' meeting at which the holders of a majority of all issued and outstanding common shares are present. Under the ROC Company Act, the approval by at least a majority of our 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 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 shares to employees; and
- removal of the directors.

However, in the case of a public company such as the Company, there is one exception if the total number of shares represented by the shareholders present at a shareholders' meeting is not sufficient to meet the above criteria (referred to the holders of at least two-thirds of all issued and outstanding common shares presented at the meeting), the resolution may be adopted by the holders of at least two-thirds of the 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 the Company five days before the commencement of the annual general or extraordinary 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 shareholders' meeting.

Any shareholder who has a personal interest in a matter to be discussed at shareholders' meeting of the Company, the outcome of which may impair interests of the Company, shall not vote or exercise voting rights on behalf of another shareholder on such matter.

Holders of the Company's ADSs do not have the same voting rights as holders of our common shares. Instead, the voting rights of holders of the Company's ADSs are governed by and described in the Deposit Agreement.

Other Rights of Shareholders

Under the ROC Company Act, 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 approved 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 an independent director 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.

One or more shareholders who have held 3% or more of the issued and outstanding shares may institute an action with a court to remove a director who has materially violated the applicable laws or the articles of incorporation of the Company or has materially damaged the interests of the Company if a resolution for removal on such grounds has first been voted on and rejected by the shareholders and such suit is filed within thirty days of such shareholders' vote.

One or more shareholders who have held 1% or more of the issued and outstanding shares for six months or longer may request a court to appoint an inspector to examine the books, accounts and financial conditions of the Company. The court may, if it deems necessary based on the inspector's report, order the independent director to convene the shareholders' meeting.

Rights of Holders of Deposited Securities

The voting rights of a holder of the Company ADSs as to the Company shares represented by those the Company ADSs are governed by the Deposit Agreement. Holders of ADSs will be able to exercise voting rights on an individual basis as follows: if a holder of the Company ADSs outstanding at the relevant record date instructs the depositary to vote in a particular manner for or against a resolution, including the election of directors, the depositary will cause all the Company shares represented by such holder's ADSs to be voted in that manner. If the depositary does not receive timely instructions from a holder of the Company ADSs outstanding at the relevant record date to vote in a particular manner for or against any resolution, including the election of directors, such holders of the Company ADSs will be deemed to have instructed the depositary or its nominee to give a discretionary proxy to a person designated by the Company to vote all the Company shares represented by such holder's ADSs at the discretion of such person, which may not be in the interest of holders of the Company ADSs.

Register of Shareholders and Record Dates

The Company's share registrar, KGI Securities Co., Ltd., maintains the Company's register of shareholders. Under the ROC Company Act and the articles of incorporation of the Company, the Company may, by giving advance public notice, set a record date and close the register of shareholders for a specified period in order for it to determine the shareholders or pledgees that are entitled to rights pertaining to the Company shares. The specified period required is as follows:

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

Annual Financial Statements

At least ten days before the annual general meeting, the Company's annual financial statements, which are prepared in conformity with Taiwan IFRS, must be available at the Company's principal executive office in Hsinchu, 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 ROC Securities and Exchange Act requests a public company, such as us, publicly announces its audited annual financial report within three months after the close of each fiscal year.

Transfer of the Shares

The transfer of the shares in registered form is effected by endorsement and delivery of the related share certificates but, in order to assert shareholders' rights against the Company, the transferee must have his name and address registered on the Company's register of shareholders. Shareholders are required to file their respective specimen seals, also known as chops, with the Company. 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 the shares is normally carried out on the book-entry system maintained by the Taiwan Depository & Clearing Corporation.

Acquisition of the Shares by us

Under the ROC Securities and Exchange Act, the Company may purchase the shares as treasury stock under limited circumstances, including:

- to transfer shares to the Company's 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 the Company; or
- to maintain the Company's credit and its shareholders' equity, provided that the shares so purchased shall be cancelled.

The Company may purchase the shares on the TWSE or by means of a public tender offer. These transactions require the approval of a majority of the board of the Company at a meeting in which at least two-thirds of the directors are in attendance. The total amount of the Company shares purchased for treasury stock may not exceed 10% of the total issued shares. In addition, the total cost of the purchased shares shall not exceed the aggregate amount of the retained earnings, any premium from share issuances and the realized portion of the Company's capital reserve. The shares purchased by the Company pursuant to the first two items above will be transferred to the intended transferees within five years of the purchase; otherwise the shares will be cancelled. For the shares to be cancelled under the third item above, the Company is required to complete an amendment registration for the cancellation within six months of the purchase.

The Company may not pledge or hypothecate any of its shares purchased by it. In addition, it may not exercise any shareholders' right attaching to such shares. In the event that the Company purchases its shares on the TWSE, its affiliates, directors, managers, shareholders holding more than 10% of the total issued shares and their respective spouses and minor children and/or nominees are prohibited from selling any shares of the Company during the period in which the Company is purchasing its shares.

Pursuant to the ROC Company Act, an entity in which the Company directly or indirectly owns more than 50% of the voting shares or paid-in capital, which is referred to as a controlled entity, may not purchase the shares of the Company. Also, if the Company and a controlled entity jointly own, directly or indirectly, more than 50% 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 the Company or a controlled entity.

Liquidation Rights

In the event of the liquidation of the Company, 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 ROC Company Act.

Transfer Restriction

Substantial Shareholders

The ROC Securities and Exchange Act currently requires:

- each director, manager, or substantial shareholder (that is, a shareholder who holds more than 10% of shares of a company), and their respective spouses, minor children or nominees, to report any change in that person's shareholding to the issuer of the shares and the FSC; and

- each director, manager, or substantial shareholder, and 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 on the TWSE 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 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% of the average trading volume (number of shares) on the TWSE for the ten 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 the Company's ADSs.

Material Contracts

We have entered into the following contracts that are effective or within the two years preceding the date of this Annual Report on Form 20-F that are or may be material:

- On November 30, 2016, ChipMOS BVI, Unigroup Guowei and the Company entered into the Equity Interest Transfer Agreement, pursuant to which Unigroup Guowei will purchase 48% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI and Gongqingcheng Changhou Investment Management Ltd. ("Gongqingcheng Changhou") entered into the Equity Interest Transfer Agreement, pursuant to which Gongqingcheng Changhou will purchase 2% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI and Accretech (China) Co., Ltd. ("Accretech (China)") entered into the Equity Interest Transfer Agreement, pursuant to which Accretech (China) will purchase 1.4162% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI and Chao-Jung Tsai entered into the Equity Interest Transfer Agreement, pursuant to which Chao-Jung Tsai will purchase 1.3443% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI and Shanghai Zuzhu Business Consulting Partnership (Limited Partnership) ("Shanghai Zuzhu") entered into the Equity Interest Transfer Agreement, pursuant to which Shanghai Zuzhu will purchase 0.9401% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI and Shih-Jye Cheng entered into the Equity Interest Transfer Agreement, pursuant to which Shih-Jye Cheng will purchase 1.1202% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI and Shou-Kang Chen entered into the Equity Interest Transfer Agreement, pursuant to which Shou-Kang Chen will purchase 0.1240% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI and David W. Wang entered into the Equity Interest Transfer Agreement, pursuant to which David W. Wang will purchase 0.0310% equity interests of Unimos Shanghai.
- On November 30, 2016, ChipMOS BVI, Unigroup Guowei, Gongqingcheng Changhou, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Agreement for Sino-Foreign Equity Joint Venture, pursuant to which the parties agreed to operate Unimos Shanghai's business together.
- On April 10, 2017, ChipMOS BVI, Unigroup Guowei, Gongqingcheng Changhou Hong Xin Investment Management Partnership (Limited Partnership) ("Gongqingcheng Changhou Hongsin"), Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amendment of Agreement for Sino-Foreign Equity Joint Venture, pursuant to which the Gongqingcheng Changhou transfer the interest to Gongqingcheng Changhou Hong Xin.
- On November 28, 2017, ChipMOS BVI, Unigroup Guowei, Gongqingcheng Changhou Hong Xin, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amendment of Agreement for Sino-Foreign Equity Joint Venture, pursuant to which the extension of the paid in capital.
- On May 15, 2018, the Company entered into Syndicated Loan Agreement with Taiwan Cooperative Bank Co., Ltd., Bank of Taiwan Co., Ltd., Land Bank of Taiwan Co., Ltd., Taishin International Bank Co., Ltd., Hun Nan Commercial Bank Co., Ltd., Chang Hwa Commercial Bank Co., Ltd. and Yuanta Commercial Bank Co., Ltd. to obtain a syndicated loan facility in the amount of NT$12.0 billion separated into two parts with term of five years. This loan facility was used to refinance the existing bank debts and for general corporate purposes.

- On August 1, 2018, ChipMOS BVI, Unigroup Guowei, Gongqingcheng Changhou Hong Xin, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amendment of Agreement for Sino-Foreign Equity Joint Venture, pursuant to which ChipMOS TECHNOLOGIES (Shanghai) LTD., was renamed to Unimos Shanghai.
- On December 29, 2018, ChipMOS BVI, Beijing Unis Memory Technology Co., Ltd. ("Beijing Ziguang Storage") Gongqingcheng Changhou Hong Xin, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amendment of Agreement for Sino-Foreign Equity Joint Venture, pursuant to which the Unigroup Guowei will transfer the 48.0% equity interests of Unimos Shanghai to Beijing Ziguang Storage.
- On February 1, 2019, ChipMOS BVI, Beijing Ziguang Storage, Gongqingcheng Changhou Hong Xin, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amendment of Agreement for Sino-Foreign Equity Joint Venture, pursuant to which the Gongqingcheng Changhou Hong Xin will transfer the 2% equity interests of Unimos Shanghai to Beijing Ziguang Storage.
- On June 18, 2019, ChipMOS BVI, Beijing Ziguang Storage, Unigroup Guowei, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amendment of Agreement for Sino-Foreign Equity Joint Venture, pursuant to which Beijing Ziguang Storage cancelled the signed "Equity Interest Transfer Agreement" between Unigroup Guowei. Unigroup Guowei thus has restored to hold 48% of the equity of Unimos Shanghai.
- On August 8, 2019, ChipMOS BVI, Beijing Ziguang Storage, Unigroup Guowei, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amendment of Agreement for Sino-Foreign Equity Joint Venture, pursuant to which Unimos Shanghai was required consolidate the 4th, 5th, and 6th amendments to file the transfer.
- On December 16, 2019, ChipMOS BVI, Yangtze Memory, Accretech (China), Chao-Jung Tsai, Shanghai Zuzhu, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amended And Restated Agreement for Sino-Foreign Equity Joint Venture, pursuant to which Beijing Ziguang Storage and Unigroup Guowei sold and transferred all of the equity interests in Unimos Shanghai to Yangtze Memory.
- On December 23, 2019, the Company entered into a Supplement Agreement to 2018 Syndicated Loan Agreement with Taiwan Cooperative Bank Co., Ltd., Bank of Taiwan Co., Ltd., Land Bank of Taiwan Co., Ltd., Taishin International Bank Co., Ltd., Hun Nan Commercial Bank Co., Ltd., Chang Hwa Commercial Bank Co., Ltd. and Yuanta Commercial Bank Co., Ltd. The clauses regarding the creation of encumbrance over the Collateral was amended to apply for other facilities in accordance with the Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan – Guidelines for Policy Oriented Special Loans stipulated by the National Development Fund of the Executive Yuan.
- On May 11, 2020, ChipMOS BVI, Yangtze Memory, Accretech (China), Chao-Jung Tsai, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang entered into the Amended And Restated Agreement for Sino-Foreign Equity Joint Venture, pursuant to which Shanghai Zuzhu sold and transferred all of the equity interests in Unimos Shanghai to Yangtze Memory.

For additional information regarding the Merger see "Item 4. Information on the Company—Our Structure and History".

Please see also "Item 7. Major Shareholders and Related Party Transactions" for further summary information regarding the contracts listed under "—Material Contracts" that are with certain of our related parties.

Foreign Investment in the ROC

Since 1983, the ROC government has periodically enacted legislation and adopted regulations to permit foreign investment in the ROC securities market.

On September 30, 2003, the ROC Executive Yuan approved an amendment to Regulations Governing Investment in Securities by Overseas Chinese and Foreign Nationals, or the Regulations, which took effect on October 2, 2003. According to the Regulations, the ROC Financial Supervisory Commission (the "ROC FSC") abolished the mechanism of the so-called "qualified foreign institutional investors" and "general foreign investors" as stipulated in the Regulations before the amendment.

Under the Regulations, foreign investors 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 ROC securities after they register with the TWSE. 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 ROC (i.e., offshore foreign institutional investors) or their branches set up within the ROC (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 ROC FSC after consultation with the Central Bank of the Republic of China (Taiwan). Currently, there is no maximum investment ceiling for offshore overseas investment in the ROC securities market.

Except for certain specified industries, such as telecommunications, investments in ROC-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 ROC under these guidelines may be remitted out of the ROC at any time after the date the capital is remitted to the ROC. Capital gains and income on investments may be remitted out of the ROC at any time.

Foreign investors (other than foreign investors who have registered with the TWSE for making investments in the ROC securities market) who wish to make direct investments in the shares of ROC companies are required to submit a foreign investment approval application to the MOEAIC or other applicable government authority. The MOEAIC 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 Banks of the Republic of China (Taiwan)) and the ROC FSC.

Under the current ROC law, any non-ROC person possessing a foreign investment approval may repatriate annual net profits, interest and cash dividends attributable to the approved investment. Stock dividend attributable to this investment, investment capital and capital gains attributable to this investment may be repatriated by the non-ROC person possessing a foreign investment approval after approvals of the MOEAIC or other government authorities have been obtained.

In addition to the general restriction against direct investment by non-ROC persons in securities of ROC companies, non-ROC persons (except in certain limited cases) are currently prohibited from investing in certain industries in the ROC pursuant to a "negative list", as amended by the ROC 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 non-ROC person (except in limited cases) may invest in these industries only up to a specified level and with the specific approval of the relevant competent authority that is responsible for enhancing the relevant legislation that the negative list is intended to implement.

The ROC FSC announced on April 30, 2009 the Regulations Governing Securities Investment and Futures Trading in Taiwan by Mainland Area Investors ("PRC Regulations") and amended the same on October 6, 2010. According to the PRC Regulations, a PRC QDII is allowed to invest in ROC securities (including less than 10% shareholding of a ROC company listed in TWSE or Taipei Exchange). Nevertheless, the total investment amount of QDIIs cannot exceed US$500 million. For each QDII, the custodians of such QDII must apply with the TWSE for the remittance amount for each QDII, which cannot exceed US$100 million, and QDII can only invest in the ROC securities market with the amount approved by the TWSE. In addition, QDIIs are currently prohibited from investing in certain industries, and their investment of certain other industries in a given company is restricted to certain percentage pursuant to a list promulgated by the FSC and amended from time to time. PRC investors other than QDII, however, are prohibited from making investments in a ROC company listed on the TWSE or the Taipei Exchange, unless with approval from the MOEAIC for its investment of 10% or more (or other percentage applicable to certain restricted industries) of the equity interest of such ROC company.

In addition to investments permitted under the PRC Regulations, PRC investors who wish to make (i) direct investment in the shares of ROC private companies or (ii) investments, individually or aggregately, in 10% or more (or other percentage applicable to certain restricted industries) of the equity interest of a ROC company listed on the TWSE or Taipei Exchange are required to submit an investment approval application to the MOEAIC or other government authority. The MOEAIC or such other government authority reviews investment approval application and approved or disapproves each application after consultation with other governmental agencies. Furthermore, PRC investor who wishes to be elected as a ROC company's director or supervisor shall also submit an investment approval application to the MOEAIC or other government authority for approval.

Depositary Receipts

In April 1992, the ROC FSC began allowing ROC companies listed on the TWSE, with the prior approval of the FSC, to sponsor the issuance and sale of depositary receipts. The depositary receipts represent depositary shares. In December 1994, the ROC Ministry of Finance began allowing companies whose shares are listed on the Taipei Exchange also to sponsor the issuance and sale of depositary receipts.

After the issuance of a depositary share, a holder of depositary receipts (other than citizens of the PRC and entities organized under the laws of the PRC save for QDII or those which otherwise obtain the approval of MOEAIC) may request the depositary to either cause the underlying shares to be sold in the ROC and to distribute the sale proceeds to the holder or to withdraw from the depositary receipt facility the shares represented by the depositary receipts to the extent permitted under the deposit agreement and transfer the shares to the holder.

Under the current ROC law, if you are a non-ROC holder of our ADSs, you must register with the TWSE as a foreign investor before you will be permitted to withdraw and hold the shares represented by the depositary receipts. In addition to obtaining registration with the TWSE, you must also (i) appoint a qualified local agent to, among other things, open a securities trading account with a local securities brokerage firm and a bank account to remit funds, exercise shareholder's rights and perform other functions as holders of ADSs may designate, (ii) appoint a custodian to hold the securities and cash proceeds, confirm transactions, settle trades and report and declare other relevant information and; (iii) appoint a tax guarantor as guarantor for the full compliance of the withdrawing depositary receipt holders' tax filing and payment obligations in the ROC. A depositary receipt holder not registered as a foreign investor with the TWSE, or not has made the necessary appointments as outlined above, will be unable to hold or subsequently transfer the shares withdrawn from the depositary receipt facility.

No deposits of shares may be made in a depositary receipt facility and no depositary shares may be issued against deposits without specific FSC approval, unless they are:

(i) stock dividends;

(ii) free distributions of shares;

(iii) due to the exercise by the depositary receipt holder preemptive rights in the event of capital increases for cash; or

(iv) if permitted under the deposit agreement and custody agreement and within the amount of depositary receipts which have been withdrawn, due to the direct purchase by investors or purchase through the depositary on the TWSE or Taipei Exchange or delivery by investors of the shares for deposit in the depositary receipt facility. In this event, the total number of depositary receipts outstanding after an issuance cannot exceed the number of issued depositary receipts previously approved by the FSC in connection with the offering plus and ADSs issued pursuant to the events described in (i), (ii) and (iii) above.

The depositary may, without obtaining further approvals from the Central Bank of the Republic of China (Taiwan) or any other governmental authority or agency of the ROC, convert NT dollars into other currencies, including US dollars, in respect of:

- the proceeds of the sale of common shares represented by ADSs or received as share dividends with respect to the common shares and deposited into the depositary receipt facility; and
- any cash dividend or cash distributions received.

In addition, the depositary may also convert into NT dollars incoming payments for purchase of common shares for deposit in the depositary receipts facility against the creation of additional ADSs. If you withdraw the common shares underlying your ADSs and become a holder of the Company's common shares, you may convert into NT dollars subscription payment for rights offerings. The depositary may be required to obtain foreign exchange payment 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 of new common shares. Such approvals may not be obtained in a timely manner, or at all.

Exchange Controls

The ROC Foreign Exchange Control Law 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 the designated foreign exchange banks.

Apart from trade-related or service-related foreign exchange transactions, ROC companies and individual residents of the ROC reaching the age of 20 may, without foreign exchange approval, remit foreign currency of up to US$50 million (or its equivalent) and US$5 million (or its equivalent) to and from the ROC (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 Taiwan's economic and financial conditions or the needs to maintain the order of foreign exchange market in Taiwan), 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 to register medium- and long-term foreign debt 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 ROC foreign currencies of up to US$100,000 (or its equivalent) per remittance if the required documentation is provided to the ROC 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 depositary receipt facility.

ROC Taxation

The following summary constitutes the material ROC tax consequences of the ownership and disposition of our shares or ADSs by and to a non-resident individual or non-resident entity (referred to here as a "non-ROC holder"). As used in the preceding sentence, a "non-resident individual" is a non-ROC national who owns our shares or ADSs and is not physically present in the ROC for 183 days or more during any calendar year, and a "non-resident entity" is a corporation or a non-corporate body that owns our shares or ADSs, is organized under the laws of a jurisdiction other than the ROC and has no fixed place of business or business agent in the ROC. Holders of our ADSs and shares should consult their own tax advisers concerning the tax consequences of owning our ADSs or shares and any other relevant taxing jurisdiction to which they are subject.

Dividends

Dividends (whether in the form of cash or common shares) declared by the Company out of retained earnings and distributed to a non-ROC holder are subject to ROC withholding tax, currently at the rate of 21% (unless a preferable tax rate is provided under a tax treaty between the ROC and the jurisdiction where the non-ROC holder is a resident) on the amount of the distribution (in the case of cash dividends) or on the par value of the distributed shares (in the case of stock dividends). The United States does not have an income tax treaty with the ROC. A 10% undistributed earnings tax was imposed on an ROC company for its after-tax earnings generated after January 1, 1998 which were not distributed in the following year. The undistributed earnings tax was reduced to 5% on January 1, 2018. The undistributed earnings tax so paid will further reduce the retained earnings available for future distribution. Furthermore, if and when the Company distributes any dividends in year 2018, for the portion of dividends out of those retained earnings on which the Company had paid the 10% ROC undistributed earnings tax, a credit of up to 5% of such portion of dividends may be offset against the 21% withholding tax imposed on the non-ROC holders. Starting from year 2019, no undistributed earnings tax paid can be offset as a credit against the 21% withholding tax.

Distributions of our shares or cash out of capital reserves are not subject to ROC withholding tax, except under limited circumstances.

Capital Gains

Starting from January 1, 2016, capital gains realized from the sale or disposal of our shares are exempt from ROC income tax under Article 4-1 of the ROC Income Tax Act.

Sales of our ADSs are not regarded as sales of ROC securities and thus any gains derived from transfers of our ADSs are not regarded as ROC-sourced income. Accordingly, any gains derived from transfers of our ADSs by non- ROC holders are not currently subject to ROC 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 our shares. Transfers of our ADSs are not subject to ROC securities transaction tax.

Subscription Rights

Distributions of statutory subscription rights for our shares in compliance with the ROC Company Act are currently not subject to ROC tax. Proceeds derived from 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. Non-ROC 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-ROC holder. Subject to compliance with the ROC law, the Company, in its sole discretion, may determine whether statutory subscription rights are evidenced by securities.

Estate and Gift Tax

ROC estate tax is payable on any property within the ROC left by a deceased, and ROC gift tax is payable on any property within the ROC donated by an individual. Estate tax and gift tax are currently payable at the progressive rates of 10%, 15% and 20%. Under the ROC Estate and Gift Tax Act, common shares issued by ROC companies are deemed located in the ROC 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 ROC has income tax treaties with Indonesia, Singapore, New Zealand, Australia, the United Kingdom, South Africa, Gambia, Eswatini, 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 and Czech Republic. These tax treaties may limit the rate of ROC withholding tax on dividends paid with respect to common shares issued by ROC companies. A non-ROC holder of our ADSs may or may not be considered as the beneficial owner of our shares for the purposes of such treaties. Accordingly, holders of our 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 United States does not have an income tax treaty with the ROC.

Material U.S. Federal Income Tax Consequences

The discussion below is for general information only and is not, and should not be interpreted to be, tax advice to any holder of our ADSs. Each holder or prospective holder of our ADSs is urged to consult his, her or its own tax advisor.

General

This discussion is a general summary of the material U.S. federal income tax consequences to U.S. Holders and Non-U.S. Holders, both as defined below, of the ownership and disposition of our ADSs as of the date of this report. This summary is based on the provisions of the Internal Revenue Code of 1986, as amended, or the "Code," the applicable U.S. Treasury regulations promulgated and proposed thereunder, judicial decisions and current administrative rulings and guidance, all of which are subject to change, possibly on a retroactive basis. This summary applies to you only if you hold our ADSs as a capital asset within the meaning of Section 1221 of the Code (generally, held for investment). The U.S. Internal Revenue Service, or the "IRS," may challenge the tax consequences described below, and we have not requested, nor will we request, a ruling from the IRS or an opinion of counsel with respect to the U.S. federal income tax consequences of acquiring, holding or disposing of our ADSs. This summary does not purport to deal with all aspects of U.S. federal income taxation that may be relevant to the ownership of our ADSs. In particular, the discussion does not address tax consequences that depend upon an investor's particular tax circumstances nor does it cover any state, local or foreign law, or the possible application of the U.S. federal estate or gift tax laws. You are urged to consult your own tax advisor regarding the application of the U.S. federal income tax laws to your particular situation as well as any state, local, foreign and U.S. federal estate and gift tax consequences resulting from the ownership and disposition of our ADSs. In addition, this summary does not take into account special U.S. federal income tax rules that apply to particular categories of holders of our ADSs, including, without limitation, the following:

- dealers, brokers or traders in securities electing to use a mark-to-market method of accounting;
- banks, thrifts or other financial institutions;
- individual retirement or tax-deferred accounts;
- insurance companies;
- tax-exempt organizations;
- regulated investment companies or real estate investment trusts;
- persons holding our ADSs as part of a hedging, straddle or conversion transaction for U.S. federal income tax purposes;
- persons required for U.S. federal income tax purposes to conform the timing of income accruals to their financial statements under Section 451 of the Code;
- persons whose functional currency for U. S. federal income tax purposes is not the U.S. dollar;

- persons subject to the alternative minimum tax;
- persons that own, or are treated as owning, 10% or more, by voting power or value, of our outstanding common stock (including common stock represented by ADSs);
- certain former U.S. citizens and residents who have expatriated; or
- persons receiving our ADSs pursuant to the exercise of employee stock options or otherwise as compensation.

U.S. Holders

For purposes of the discussion below, you are a "U.S. Holder" if you are a beneficial owner of our ADSs that is:

- an individual U.S. citizen or resident alien of the United States (as specifically defined for U.S. federal income tax purposes);
- a corporation, or other entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate whose income is subject to U.S. federal income tax regardless of its source; or
- a trust (x) if a U.S. court can exercise primary supervision over the trust's administration and one or more U.S. persons are authorized to control all substantial decisions of the trust or (y) that has a valid election in effect under applicable U.S. Treasury regulations to be treated as a U.S. person.

If a partnership (including any entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds our ADSs, the tax treatment of a partner in such partnership will generally depend upon the status of the partner and upon the activities of the partnership. If you are a partnership holding our ADSs or a partner in such partnership, you should consult your tax advisor with respect to the U.S. federal income tax consequences of the ownership and disposition of our ADSs by the partnership.

General

In general, a U.S. Holder of our ADSs will be treated as owning the underlying shares represented by those ADSs for U.S. federal income tax purposes. Accordingly, no gain or loss will be recognized if a U.S. Holder exchanges ADSs for the underlying shares represented by those ADSs. The U.S. Department of the Treasury has expressed concern that parties to whom ADSs are released before shares are delivered to the Depositary ("pre-release"), or intermediaries in the chain of ownership between holders and the issuer of the security underlying the ADSs, may be taking actions that are inconsistent with the claiming of foreign tax credits by holders of ADSs. These actions would also be inconsistent with the claiming of the preferential rate of tax, described below, applicable to dividends received by certain non-corporate U.S. Holders. Accordingly, the creditability of ROC taxes, and the availability of the preferential tax rate for dividends received by certain non-corporate U.S. Holders, each as described below, could be affected by actions taken by such parties or intermediaries.

Distributions

Subject to the "passive foreign investment company" (or "PFIC") rules discussed below, the amount of any cash distribution (other than in liquidation) that you receive with respect to our ADSs including the amount of any ROC taxes actually withheld therefrom (described above in "—ROC Taxation") generally will be taxed to a U.S. Holder as dividend income to the extent such distribution does not exceed ChipMOS Taiwan's current or accumulated earnings and profits (or "E&P"), as calculated for U.S. federal income tax purposes. Such income will be includable in your gross income as ordinary income on the date of receipt by the Depositary. Dividends received by individuals and certain other non-corporate U.S. Holders from "qualified foreign corporations" are taxed at the rate of either 0 percent, 15 percent or 20 percent, depending upon the particular taxpayer's U.S. federal income tax bracket; provided that the recipient-shareholder has held his or her shares as a beneficial owner for more than 60 days during the 121-day period beginning on the date which is 60 days before the shares' ex-dividend date. A foreign corporation is a "qualified foreign corporation" if the stock with respect to which it pays dividends is traded on an established securities market in the United States, provided that the foreign corporation is not a PFIC. ChipMOS Taiwan ADSs are traded on an established securities market in the United States, although ChipMOS Taiwan cannot guarantee that its ADSs will be so traded in the future. ChipMOS Taiwan does not expect to be treated as a PFIC for U.S. federal income tax purposes for the current taxable year or the foreseeable future. If we are treated as a qualified foreign corporation, dividends we pay with respect to our ADSs would be eligible for the reduced rates of taxation described in this paragraph. No assurance can be given, however, that the IRS will not disagree and seek to treat ChipMOS Taiwan as a PFIC. If ChipMOS Taiwan were a PFIC with respect to a particular U.S. Holder, dividends received from ChipMOS Taiwan would be taxed at regular ordinary income tax rates and certain other rules will apply. See "Passive Foreign Investment Company (PFIC)," below. Holders of ChipMOS Taiwan ADSs should consult their own tax advisors regarding the availability of a reduced dividend tax rate in light of their own particular circumstances. To the extent any distribution exceeds ChipMOS Taiwan's E&P, the distribution will first be treated as a tax-free return of capital to the extent of your adjusted tax basis in ChipMOS Taiwan ADSs and will be applied against and reduce such basis on a dollar-for-dollar basis (thereby increasing the amount of gain and decreasing the amount of loss recognized on a subsequent disposition of such ChipMOS Taiwan ADSs). To the extent that such distribution exceeds your adjusted tax basis, the distribution will be taxed as gain recognized on a sale or exchange of ChipMOS Taiwan ADSs. However, because ChipMOS Taiwan does not maintain calculations of its E&P under U.S. federal income tax principles, it is expected that distributions will generally be reported to U.S. Holders as dividends. Because ChipMOS Taiwan is not a U.S. corporation, no dividends-received deduction will be allowed to corporations with respect to dividends paid by it.

For U.S. foreign tax credit limitation purposes, dividends received on ChipMOS Taiwan ADSs will be treated as foreign source income and will generally constitute "passive category income," or in the case of certain holders, "general category income." You may be eligible, subject to a number of complex limitations, to claim a foreign tax credit in respect of ROC taxes actually withheld on dividends paid on ChipMOS Taiwan ADSs. A U.S. Holder who does not elect to claim a foreign tax credit for foreign tax withheld may instead claim a deduction, for U.S. federal income tax purposes, in respect of such withholding, but only for a year in which such U.S. Holder elects to do so for all creditable foreign income taxes. The rules governing U.S. foreign tax credits are complex, and we recommend that you consult your tax advisor regarding the applicability of such rules to you.

Sale, Exchange or Other Disposition of ChipMOS Taiwan ADSs

Subject to the PFIC rules discussed below, generally, in connection with the sale, exchange or other disposition of ChipMOS Taiwan ADSs:

- you will recognize capital gain or loss equal to the difference (if any) between the amount realized on such sale, exchange or other disposition and your adjusted tax basis in such ChipMOS Taiwan ADSs;
- such gain or loss will be long-term capital gain or loss if your holding period for such ChipMOS Taiwan ADSs is more than one year at the time of the sale or other disposition;
- such gain or loss will generally be treated as U.S. source for U.S. foreign tax credit purposes; and
- your ability to deduct capital losses is subject to limitations.

Long-term capital gains recognized by individuals and certain other non-corporate taxpayers are taxed at preferential rates.

Passive Foreign Investment Company (PFIC)

A non-U.S. corporation will be classified as a PFIC for U.S. federal income tax purposes for any taxable year, if either (i) 75% or more of its gross income for such year consists of certain types of passive income or (ii) 50% or more of the value of its assets (determined on the basis of a quarterly average) during such year produce or are held for the production of passive income. For this purpose, cash and cash equivalents are categorized as passive assets and the company's goodwill and other unbooked intangibles are taken into account as non-passive assets. Passive income generally includes, among other things, dividends, interest, rents, royalties, and gains from the disposition of passive assets. We will be treated as owning a proportionate share of the assets and earning a proportionate share of the income of any other corporation in which we own, directly or indirectly, more than 25% (by value) of the stock. ChipMOS Taiwan does not expect to be a PFIC for its current taxable year or the foreseeable future. However, a company's PFIC status is a legal and factual determination that must be made annually and thus may be subject to change. If ChipMOS Taiwan were treated as a PFIC, gain realized on the sale, exchange or other disposition of your ChipMOS Taiwan ADSs would in general not be treated as capital gain. Instead, such gain would be allocated ratably over your holding period for the ChipMOS Taiwan ADSs. The amounts allocated to the taxable year of the sale, exchange or other disposition and to any year before ChipMOS Taiwan became a PFIC would be taxed as ordinary income. The amount allocated to each other taxable year would be subject to tax at the highest rate in effect for such year, together with an interest charge on the tax attributable to each such year. If ChipMOS Taiwan were a PFIC for any year during a U.S. Holder's holding period for ChipMOS Taiwan ADSs, it generally will continue to be treated as a PFIC with respect to the U.S. Holder for all succeeding years during which the U.S. Holder owns the ADSs. Dividends received from ChipMOS Taiwan ADSs will not be eligible for the special tax rates applicable to qualified dividend income for certain non-corporate U.S. Holders if ChipMOS Taiwan is treated as a PFIC with respect to the U.S. Holder, either in the taxable year of the distribution or the preceding taxable year, but instead will be taxable at rates applicable to ordinary income. Further, any distribution in respect of ChipMOS Taiwan ADSs in excess of 125 percent of the average annual distributions on ChipMOS Taiwan ADSs received by the U.S. Holder during the preceding three years or the U.S. Holder's holding period, whichever is shorter, would be allocated ratably over the U.S. Holder's holding period for ChipMOS Taiwan ADSs and subject to taxation as described with respect to sales, exchanges or other dispositions above. Certain elections may be available that would result in alternative treatments such as mark-to-market treatment of the ADSs.

3.8% Medicare Tax on "Net Investment Income"

Certain U.S. Holders that are individuals, estates, and certain trusts are subject to a 3.8% tax on all or a portion of their "net investment income," which may include any gain realized or amounts received with respect to their ChipMOS Taiwan ADSs, to the extent of their net investment income that, when added to other modified adjusted gross income, exceeds $200,000 for a single taxpayer (or a qualifying head of household), $250,000 for married taxpayers filing a joint return (or a qualifying widower), or $125,000 for a married taxpayer filing a separate return. U.S. Holders should consult their own tax advisors with respect to the applicability of the net investment income tax.

Information Reporting and Backup Withholding

Except in the case of corporations or other exempt holders, amounts received by a U.S. Holder in connection with distributions, if any, paid by ChipMOS Taiwan with respect to ChipMOS Taiwan ADSs and proceeds from the sale, exchange or other disposition of ChipMOS Taiwan ADSs may be subject to U.S. information reporting requirements and backup withholding unless the U.S. Holder provides an accurate taxpayer identification number and complies with certain certification procedures or otherwise establishes an exemption from backup withholding. Backup withholding is not an additional tax and amounts withheld may be allowed as a credit against the U.S. Holder's U.S. federal income tax liability and may entitle the U.S. Holder to a refund, provided that certain required information is timely furnished to the IRS.

U.S. Holders who are individuals (and certain entities) and who own "specified foreign financial assets" with an aggregate value in excess of $50,000 on the last day of the tax year (or more than $75,000 at any time during the tax year) are generally required to file an information statement along with their tax returns, currently on IRS Form 8938, with respect to such assets, subject to certain exceptions (including an exception for shares held in custodial accounts maintained with a U.S. financial institution). "Specified foreign financial assets" include securities issued by a non-U.S. issuer (which would include ChipMOS Taiwan ADSs) that are not held in accounts maintained by financial institutions. Higher reporting thresholds apply to certain individuals living abroad and to certain married individuals. Individuals who fail to report the required information could be subject to substantial penalties, and such individuals should consult their own tax advisors concerning the application of these rules to their investment in ChipMOS Taiwan ADSs.

TAX MATTERS CAN BE COMPLICATED. THE FOREGOING SUMMARY OF MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES IS NOT INTENDED TO BE A COMPLETE ANALYSIS OR DESCRIPTION OF ALL U.S. FEDERAL INCOME TAX CONSEQUENCES OF THE OWNERSHIP AND DISPOSITION OF CHIPMOS TAIWAN ADSs. IN ADDITION, THE SUMMARY DOES NOT ADDRESS TAX CONSEQUENCES THAT DEPEND UPON INDIVIDUAL CIRCUMSTANCES. THIS SUMMARY DOES NOT ADDRESS ANY U.S. FEDERAL TAX CONSEQUENCES OTHER THAN INCOME TAX OR ANY FOREIGN, STATE OR LOCAL TAX CONSIDERATIONS, NOR ANY TAX CONSEQUENCES OF ANY TRANSACTION OTHER THAN THE OWNERSHIP AND DISPOSITION OF CHIPMOS TAIWAN ADSs. ACCORDINGLY, YOU ARE STRONGLY URGED TO CONSULT YOUR OWN TAX ADVISOR TO DETERMINE THE PARTICULAR U.S. FEDERAL, STATE, LOCAL, OR FOREIGN INCOME OR OTHER TAX CONSEQUENCES OF THE OWNERSHIP AND DISPOSITION OF CHIPMOS TAIWAN ADSs TO YOU.

Non-U.S. Holders

For purposes of this discussion, if you are not a U.S. Holder (as defined above), you are a "Non-U.S. Holder".

Distributions on Our ADSs

You generally will not be subject to U.S. federal income tax or withholding on distributions made on our ADSs unless:

- you conduct a trade or business in the United States, and
- the distributions are effectively connected with the conduct of that trade or business (and, if an applicable income tax treaty so requires as a condition for you to be subject to U.S. federal income tax on a profit-for-the-year basis in respect of income from our ADSs, such distributions are attributable to a permanent establishment that you maintain in the United States).

If you meet the two tests above, you generally will be subject to tax in respect of such distributions in the same manner as a U.S. Holder, as described above. In addition, any effectively connected distributions received by a non-U.S. corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a 30-percent rate or such lower rate as may be specified by an applicable income tax treaty.

Sale, Exchange or Other Disposition of Our ADSs

Generally, you will not be subject to U.S. federal income tax or withholding in respect of gain recognized on a sale, exchange or other disposition of our ADSs unless:

- your gain is effectively connected with a trade or business that you conduct in the United States (and, if an applicable income tax treaty so requires as a condition for you to be subject to U.S. federal income tax on a profit-for-the-year basis in respect of gain from the sale, exchange or other disposition of our ADSs, such gain is attributable to a permanent establishment that you maintain in the United States), or
- you are an individual Non-U.S. Holder and are present in the United States for at least 183 days in the taxable year of the sale, exchange or other disposition, and certain other conditions exist.

If you meet either of the two tests above, you will be subject to tax in respect of any gain effectively connected with your conduct of a trade or business in the United States generally in the same manner as a U.S. Holder, as described above. Effectively connected gains realized by a non-U.S. corporation may also, under certain circumstances, be subject to an additional "branch profits tax" at a rate of 30-percent or such lower rate as may be specified by an applicable income tax treaty.

Backup Withholding and Information Reporting

Payments, including distributions and proceeds from sales, exchanges or other dispositions in respect of our ADSs that are made in the United States or by a U.S.-related financial intermediary will be subject to U.S. information reporting rules. In addition, such payments may be subject to U.S. federal backup withholding. You will not be subject to backup withholding provided that:

- you are a corporation or other exempt recipient, or
- you provide your correct U.S. federal taxpayer identification number and certify, under penalties of perjury, that you are not subject to backup withholding.

Amounts withheld under the backup withholding rules may be credited against your U.S. federal income tax, and you may obtain a refund of any excess amounts withheld under the backup withholding rules by filing the appropriate claim for refund with the IRS in a timely manner.

Documents on Display

We are subject to the information requirements of the Securities Exchange Act of 1934, as amended. In accordance with these requirements, we file reports and other information with the SEC. These materials may be inspected and copied at the Commission's Public Reference Room at 100 F Street, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Commission's Public Reference Room by calling the Commission in the United States at 1-800-SEC-0330. The Commission also maintains a web site at http://www.sec.gov that contains reports, proxy statements and other information regarding registrants that file electronically with the Commission.

Item 11. Quantitative and Qualitative Disclosure about Market Risk

Market Risks

Our exposure to financial market risks relates primarily to changes in interest rates and foreign exchange rates. To mitigate these risks, we utilize derivative financial instruments, the application of which is primarily for hedging, and not for speculative purposes.

Interest Rate Risks

As of December 31, 2021, we had aggregate debts outstanding of NT$10,145 million (US$366 million), which was incurred for capital expenditure and general operating expenses. Of our outstanding debts as of December 31, 2021, 100% bear interest at variable rates. The interest rate for the majority of our variable rate debts varies based on a fixed percentage spread over the prime rate established by our lenders. Our variable rate debts had an annual interest rate between 0.45% to 1.7895% as of December 31, 2021. Accordingly, we have cash flows and earnings exposure due to market interest rate changes for our variable rate debts. An increase in interest rates of 1% would increase our annual interest charge by NT$102 million (US$4 million) based on our outstanding floating rate indebtedness as of December 31, 2021.

As of December 31, 2020 and 2021, we had no interest rate swap agreements outstanding.

Foreign Currency Exchange Rate Risks

Our foreign currency exposure gives rise to market risks associated with exchange rate movements against the NT dollar, the RMB, the Japanese yen and the US dollar. As of December 31, 2021, 40.0% of our monetary financial assets and 10.5% of our monetary financial liabilities are denominated in the RMB, US dollar and Japanese yen, respectively. We do not hold or issue any derivative for trading purposes or to hedge against fluctuations in foreign exchange rates. We mitigate this risk by conducting sales and purchases transactions in the same currency. These hedging transactions help to reduce, but do not eliminate, the impact of foreign currency exchange rate movements. An average appreciation of the NT dollar against all other relevant foreign currencies of 5% would decrease our exchange gain by NT$177 million (US$6 million) based on our outstanding assets and liabilities denominated in foreign currencies as of December 31, 2021. As of December 31, 2020 and 2021, we had no outstanding forward exchange or foreign currency option contracts.

See Note 43 of our audited consolidated financial statements for additional information on financial risk management.

Item 12. Description of Securities Other Than Equity Securities

American Depositary Shares

Depositary Fees

Under the terms of the Deposit Agreement for our ADSs, an ADS holder is required to pay the following service fees to the depositary bank:

Service	Fees
(1) Issuance of ADSs (i.e., an issuance upon a deposit of Shares or upon a change in the ADS(s)-to-Share(s) ratio), excluding issuances as a result of distributions described in paragraph (4) below.	Up to US$5.00 per 100 ADS (or fraction thereof) issued.
(2) Cancellation of ADSs (i.e., a cancellation of ADSs for delivery of deposited Shares or upon a change in the ADS(s)-to-Share(s) ratio).	Up to US$5.00 per 100 ADS (or fraction thereof) cancelled.
(3) Distribution of cash dividends or other cash distributions (i.e., upon a sale of rights and other entitlements).	Up to US$5.00 per 100 ADS (or fraction thereof) held.
(4) Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions, or (ii) an exercise of rights to purchase additional ADSs.	Up to US$5.00 per 100 ADS (or fraction thereof) held.
(5) Distribution of securities other than ADSs or rights to purchase additional ADSs (i.e., spin-off shares).	Up to US$5.00 per 100 ADS (or fraction thereof) held.
(6) ADS Services.	Up to US$5.00 per 100 ADS (or fraction thereof) held on the applicable record date(s) established by the Depositary.

Depositary Charges

A holder of our ADSs is responsible to pay certain charges such as:

(i) taxes (including applicable interest and penalties) and other governmental charges;

(ii) such registration fees as may from time to time be in effect for the registration of Shares or other Deposited Securities on the share register and applicable to transfers of Shares or other Deposited Securities to or from the name of the Custodian, the Depositary or any nominees upon the making of deposits and withdrawals, respectively;

(iii) such cable, telex and facsimile transmission and delivery expenses as are expressly provided in the Deposit Agreement to be at the expense of the person depositing Shares or withdrawing Deposited Securities or of the Holders and Beneficial Owners of ADSs;

(iv) the expenses and charges incurred by the Depositary in the conversion of foreign currency;

(v) such fees and expenses as are incurred by the Depositary in connection with compliance with exchange control regulations and other regulatory requirements applicable to Shares, Deposited Securities, ADSs and ADRs; and

(vi) the fees and expenses incurred by the Depositary, the Custodian, or any nominee in connection with the servicing or delivery of Deposited Property.

All ADS fees and charges so payable may be deducted from distributions or must be remitted to the Depositary, or its designee, and may, at any time and from time to time, be changed by agreement between the Depositary and the Company, but, in the case of ADS fees and charges payable by Holders and Beneficial Owners, only in the manner contemplated in the Deposit Agreement. The Depositary shall provide, without charge, a copy of its latest ADS fee schedule to anyone upon request.

ADS fees and charges payable upon (i) the issuance of ADSs and (ii) the cancellation of ADSs will be payable by the person to whom the ADSs are so issued by the Depositary (in the case of ADS issuances) and by the person who ADSs are being cancelled (in the case of ADS cancellations). In the case of ADSs issued by the Depositary into DTC or presented to the Depositary via DTC, the ADS issuance and cancellation fees and charges will be payable by the DTC Participant(s) receiving the ADSs from the Depositary or the DTC Participant(s) holding the ADSs 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 payable by Holders as of the applicable ADS Record Date established by the Depositary. 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, the applicable Holders as of the ADS Record Date established by the Depositary will be invoiced for the amount of the ADS fees and charges and such ADS fees may be deducted from distributions made to Holders. 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 from time to time and the DTC Participants in turn charge the amount of such ADS fees and charges to the Beneficial Owners for whom they hold ADSs.

The Depositary may reimburse the Company for certain expenses incurred by the Company in respect of the ADR program established pursuant to the Deposit Agreement, by making available a portion of the ADS fees charged in respect of the ADR program or otherwise, upon such terms and conditions as the Company and the Depositary agree from time to time. The Company shall pay to the Depositary such fees and charges, and reimburse the Depositary for such out-of-pocket expenses, as the Depositary and the Company may agree from time to time. Responsibility for payment of such fees, charges and reimbursements may from time to time be changed by agreement between the Company and the Depositary. Unless otherwise agreed, the Depositary shall present its statement for such fees, charges and reimbursements to the Company once every three months. The charges and expenses of the Custodian are for the sole account of the Depositary.

The obligations of Holders and Beneficial Owners to pay ADS fees and charges shall survive the termination of the Deposit Agreement. As to any Depositary, upon the resignation or removal of such Depositary as described in the Deposit Agreement, the right to collect ADS fees and charges shall extend for those ADS fees and charges incurred prior to the effectiveness of such resignation or removal.

Depositary Payment

In 2021, we received US$39.3 thousand from Citi Bank N.A., the Depositary for our ADR program. The table below sets forth details of the amount we received from Citi Bank N.A.

Item	US$ (in thousand)
Reimbursement of Proxy Process Expenses	9.8
Reimbursement of ADR holders identification expenses	8.5
Direct reimbursement to issuer	39.3
Total Payments [(1)]	57.6

Note:

(1) Net of U.S. withholding tax.

PART II

Item 13. Defaults, Dividend, Arrearages and Delinquencies

None.

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.

Our management, including our President, the principal executive officer and Vice president of the Finance and Accounting Management Center, the principal financial officers, conducted an evaluation of the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934, as amended). Based upon that evaluation, our management concluded that, our disclosure controls and procedures were effective as of December 31, 2021.

Management's Annual Report on Internal Control over Financial Reporting.

Management of ChipMOS TECHNOLOGIES INC. (together with its consolidated subsidiaries, the "Company") is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rule 13a-15(f) of the Securities Exchange Act of 1934, as amended). The Company's internal control over financial reporting is a process designed under the supervision of the Company's President, the principal executive officer, and Vice President of the Finance and Accounting Management Center, the principal financial officer, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the Company's financial statements for external reporting purposes in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board. Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect our transactions and dispositions of our assets;
- provide reasonable assurance that our transactions are recorded as necessary to permit preparation of our financial statements in accordance with IFRSs, and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our 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. Projections of any evaluation of internal control 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, 2021 based on the criteria set forth in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on the assessment, our management concludes that our internal control over financial reporting was effective as of December 31, 2021.

The effectiveness of our internal control over financial reporting as of December 31, 2021 has been audited by PricewaterhouseCoopers, Taiwan, an independent registered public accounting firm, as stated in their report included in this Annual Report on Form 20-F.

Attestation Report of the Independent Registered Public Accounting Firm.

Our independent registered public accounting firm, PricewaterhouseCoopers, Taiwan has audited the effectiveness of our internal control over financial reporting, as stated in its report, which appears on page F-2 of this annual report.

Changes in Internal Control over Financial Reporting.

During the year ended December 31, 2021, there have been no changes in our internal control over financial reporting that may materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 16A. Audit Committee Financial Expert

Our Board of Directors have determined that Chin-Shyh Ou, one of our independent directors, qualified as audit committee financial expert and meets the independence requirement as defined in Item 16A to Form 20-F.

Item 16B. Code of Ethics

We have adopted a Code of Ethics and Business Conduct, which applies to our employees and contract workers. A copy of our Code of Ethics and Business Conduct is filed as Exhibit 11.1 to this Annual Report on Form 20-F.

Item 16C. Principal Accountant Fees and Services

The table below summarizes the aggregate fees that we paid or accrued for services provided by PricewaterhouseCoopers, Taiwan ("PwC Taiwan") (PCAOB ID Number: 1345) for the years ended December 31, 2020 and 2021.

	2020	2021
	NT$	NT$
	(In thousands)	
Audit Fees	$16,400	$16,400
Audit Related Fees	200	200
Tax Fees	2,900	2,900
Total	$19,500	$19,500

Audit Fees. This category includes the audit of our annual financial statements and services that are provided by the independent auditors in connection with our annual financial statements, internal control over financial reporting, quarterly financial statements, and related statutory and regulatory filings.

Audit-Related Fees. This category includes fees reasonably related to the performance of the audit or review of our financial statements and not included in the category of Audit Fees (described above).

Tax Fees. This category includes aggregate fees for respective years for services relating to tax compliance and review.

All non-audit services are pre-approved by our Audit Committee on a case-by-case basis. Accordingly, we have not established any pre-approval policies and procedures.

All audit services performed by PwC Taiwan were pre-approved by the Audit Committee.

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

Not applicable.

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

Not applicable.

Item 16F. Change in Registrant's Certifying Accountant

Not applicable.

Item 16G. Corporate Governance

Our corporate governance practices are governed by the applicable ROC law, specifically, the ROC Company Act and Securities and Exchange Act, and our articles of incorporation. Also, because our securities are listed on the NASDAQ, we are subject to corporate governance requirements applicable to NASDAQ-listed foreign private issuers under NASDAQ listing rules.

Under NASDAQ Rule 5615(a)(3), NASDAQ-listed foreign private issuers may, in general, follow their home country corporate governance practices instead of most NASDAQ corporate governance requirements. However, all NASDAQ-listed, foreign private issuers must comply with NASDAQ Rules 5605(c)(2)(A)(ii), 5605(c)(3), 5625 and 5640.

Item 16G requires a foreign private issuer to provide in its annual report filed with the SEC a brief, general summary of any significant ways its corporate governance practices differ from those followed by NASDAQ-listed domestic companies. The table below provides this summary information as required by Item 16G and by NASDAQ Rule 5615(a) (3):

NASDAQ Listing Rule	Corporate Governance Practice To Be Followed by Domestic Companies	Our Corporate Governance Practice
5250(b)(3)	Disclosure of third party director and nominee compensation requirements.	We follow governance practices under the ROC law. NASDAQ Rule 5250(b)(3) generally requires a NASDAQ-listed company to disclose at least annually material terms of agreements and arrangements with third parties (other than the company) relating to compensation of or payment to the company's directors in connection with candidacy or service as a company director, subject to certain limited exceptions. There is no similar regulation requiring disclosure of third party compensation of directors and nominees for director under the ROC law. However, certain laws and regulations are designed to enhance transparency by making investors aware of the relationship between independent directors or nominees for independent director of a TWSE-listed company and third party. For instance, the ROC Corporate Governance Best Practice Principles for TWSE/TPEx Listed Companies requires that, in the event that both of a TWSE-listed company and its group enterprises, and another company and its group enterprises, nominate any director, supervisor or managerial officer from the other company or its group enterprises as an independent director candidate, the TWSE-listed company shall disclose the information when receiving the nomination of an independent director candidate, and explain the competence of the independent director candidate. It further requires that, if the candidate becomes the TWSE-listed company's independent director through election, such company shall disclose the number of votes cast in favor of such independent director-elect. In addition, if an independent director of a TWSE-listed company concurrently serves as a director, supervisor or other position of other company, such concurrently held position shall be disclosed in the Market Observation Post System of the TWSE.
5605(b)	Requires a majority independent board and an independent director executive session.	We follow governance practices under the ROC law. We have five independent directors out of a total of nine directors on our board. Our standards in determining director independence substantially comply with the NASDAQ requirement, which include detailed tests for determining director independence.
5605(c)(1)	Audit committee charter requirements.	We follow governance practices under the ROC law.
5605(c)(2)(A)(ii)	Audit committee composition and independence requirements.	We follow the same NASDAQ listing rule governance practice as followed by domestic companies.

NASDAQ Listing Rule	Corporate Governance Practice To Be Followed by Domestic Companies	Our Corporate Governance Practice
5605(c)(2)(A)(i), (iii), (iv)	Audit committee financial sophistication requirements.	We follow the same NASDAQ listing rule governance practice as followed by domestic companies.
5605(c)(3)	Audit committee responsibilities and authority requirements.	We follow the same NASDAQ listing rule governance practice as followed by domestic companies.
5605(d), (e)	Requires independent director oversight of executive officer compensation and director nominations.	We follow the same NASDAQ listing rule governance practice regarding the compensation committee as followed by domestic companies. As for the director nominations, we follow governance practices under the ROC law. Under the ROC Company Act and the interpretations thereof, candidates to serve as directors are nominated either by the board of directors or by the shareholders.
5610	Requires a code of conduct for directors, officers and employees.	We follow governance practices under the ROC law. We have adopted the Code of Ethics and Business Conduct that satisfies the requirements promulgated by the TWSE, and applies to all employees, managerial officers and directors of our company. The details of the waiver of such Code for our directors and managerial officers will be disclosed in the Market Observation Post System of the TWSE.
5620	Annual shareholder meeting requirements.	We follow governance practices under the ROC law. We are required by the ROC Company Act and our articles of incorporation to hold a general meeting of our shareholders within six months following the end of each fiscal year, unless for specific legitimate reasons or approved otherwise by the relevant authorities. Further, a majority of the holders of all issued and outstanding common shares present at a shareholders' meeting constitutes a quorum for meetings of our shareholders.
5625	Requires an issuer to notify NASDAQ of any material noncompliance with the Rule 5600 series.	We follow the same NASDAQ listing rule governance practice as followed by domestic companies.
5630	Requires oversight of related party transactions.	We follow governance practices under the ROC law. According to NASDAQ Rule 5630(a), each company that is not a limited partnership shall conduct an appropriate review and oversight of all related party transactions for potential conflict of interest situations on an ongoing basis by the company's audit committee or another independent body of the board of directors. According to our Procedures for Acquisition or Disposal of Assets that satisfies the requirements promulgated by the FSC, any related party transaction exceeding a specified threshold shall be required to have an independent expert issue a fairness opinion, and be submitted to our audit committee for its review and approval.

NASDAQ Listing Rule	Corporate Governance Practice To Be Followed by Domestic Companies	Our Corporate Governance Practice
5635	Circumstances that require shareholder approval.	We follow governance practices under the ROC law. According to NASDAQ Rule 5635(c), each issuer shall require shareholder approval when a stock option or purchase plan is to be established or materially amended or other equity compensation arrangement made or materially amended, pursuant to which stock may be acquired by officers, directors, employees, or consultants. However, under the corresponding domestic requirements under the ROC Company Act and the Securities and Exchange Act, the board of directors has authority, subject to the approval of the Securities and Futures Bureau of the FSC, to approve employee stock option plans and to grant options to employees pursuant to such plans.
5640	Shareholder voting rights requirements.	We follow the same NASDAQ listing rule governance practice as followed by domestic companies.

Item 16H. Mine Safety Disclosure

Not applicable.

Item 16I. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 17. Financial Statements

The Company has elected to provide the financial statements and related information specified in Item 18 in lieu of Item 17.

Item 18. Financial Statements

The financial statements and related information of the Company are located at pages F-1 to F-69.

Item 19. Exhibits

Exhibits	Description
1.1	Articles of Incorporation of ChipMOS TECHNOLOGIES INC. as amended on July 12, 2021. (English Translation)
2.1	Form of the Deposit Agreement among ChipMOS TECHNOLOGIES INC., Citibank, N.A. and The Holders and Beneficial Owners of American Depositary Shares issued hereunder.(2)
4.1	Agreement and Plan of Merger, dated January 21, 2016, between ChipMOS TECHNOLOGIES (Bermuda) LTD. and ChipMOS TECHNOLOGIES INC.(1)
4.2	Equity Interest Transfer Agreement, dated November 30, 2016, among ChipMOS TECHNOLOGIES (BVI) LTD., Tibet Unigroup Guowei Investment Co., Ltd. and ChipMOS TECHNOLOGIES INC. (English Translation)(3)
4.3	Equity Interest Transfer Agreement, dated November 30, 2016, between ChipMOS TECHNOLOGIES (BVI) LTD. and Gongqingcheng Changhou Investment Management Ltd. (English Translation)(3)
4.4	Equity Interest Transfer Agreement, dated November 30, 2016, between ChipMOS TECHNOLOGIES (BVI) LTD. and Accretech (China) Co., Ltd. (English Translation)(3)
4.5	Equity Interest Transfer Agreement, dated November 30, 2016, between ChipMOS TECHNOLOGIES (BVI) LTD. and Chao-Jung Tsai (English Translation)(3)
4.6	Equity Interest Transfer Agreement, dated November 30, 2016, between ChipMOS TECHNOLOGIES (BVI) LTD. and Shanghai Zuzhu Business Consulting Partnership (Limited Partnership) (English Translation)(3)

Exhibits	Description
4.7	Equity Interest Transfer Agreement, dated November 30, 2016, between ChipMOS TECHNOLOGIES (BVI) LTD. and Shih-Jye Cheng (English Translation)[3]
4.8	Equity Interest Transfer Agreement, dated November 30, 2016, between ChipMOS TECHNOLOGIES (BVI) LTD. and Shou-Kang Chen (English Translation)[3]
4.9	Equity Interest Transfer Agreement, dated November 30, 2016, between ChipMOS TECHNOLOGIES (BVI) LTD. and David W. Wang (English Translation)[3]
4.10	Agreement for Sino-Foreign Equity Joint Venture, dated November 30, 2016, among ChipMOS TECHNOLOGIES (BVI) LTD., Tibet Unigroup Guowei Investment Co., Ltd., Gongqingcheng Changhou Investment Management Ltd., Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[3]
4.11	Amendment of Agreement for Sino-Foreign Equity Joint Venture dated April 10, 2017, among ChipMOS TECHNOLOGIES (BVI) LTD., Tibet Unigroup Guowei Investment Co., Ltd., Gongqingcheng Changhou Hong Xin Investment Management Partnership (Limited Partnership), Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[5]
4.12	Amendment of Agreement for Sino-Foreign Equity Joint Venture dated November 28, 2017, among ChipMOS TECHNOLOGIES (BVI) LTD., Tibet Unigroup Guowei Investment Co., Ltd., Gongqingcheng Changhou Hong Xin Investment Management Partnership (Limited Partnership), Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[5]
4.13	Amendment of Agreement for Sino-Foreign Equity Joint Venture dated August 1, 2018, among ChipMOS TECHNOLOGIES (BVI) LTD., Tibet Unigroup Guowei Investment Co., Ltd., Gongqingcheng Changhou Hong Xin Investment Management Partnership (Limited Partnership), Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[5]
4.14	Amendment of Agreement for Sino-Foreign Equity Joint Venture dated December 29, 2018, among ChipMOS TECHNOLOGIES (BVI) LTD., Beijing Unis Memory Technology Co., Ltd., Gongqingcheng Changhou Hong Xin Investment Management Partnership (Limited Partnership), Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[5]
4.15	Amendment of Agreement for Sino-Foreign Equity Joint Venture dated February 1, 2019, among ChipMOS TECHNOLOGIES (BVI) LTD., Beijing Unis Memory Technology Co., Ltd., Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[5]
4.16	Syndicated Loan Agreement, dated May 15, 2018, between ChipMOS TECHNOLOGIES INC. and, Taiwan Cooperative Bank Co., Ltd., Bank of Taiwan Co., Ltd., Land Bank of Taiwan Co., Ltd., Taishin International Bank Co., Ltd., Hun Nan Commercial Bank Co., Ltd., Chang Hwa Commercial Bank Co., Ltd. and Yuanta Commercial Bank Co., Ltd. (English Translation)[5]
4.17	Amendment of Agreement for Sino-Foreign Equity Joint Venture dated June 18, 2019, among ChipMOS TECHNOLOGIES (BVI) LTD., Beijing Unis Memory Technology Co., Ltd., Tibet Unigroup Guowei Investment Co., Ltd., Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[6]
4.18	Amendment of Agreement for Sino-Foreign Equity Joint Venture dated August 8, 2019, among ChipMOS TECHNOLOGIES (BVI) LTD., Beijing Unis Memory Technology Co., Ltd., Tibet Unigroup Guowei Investment Co., Ltd., Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[6]
4.19	Amendment and Restatement of Agreement for Sino-Foreign Equity Joint Venture dated December 16, 2019, among ChipMOS TECHNOLOGIES (BVI) LTD., Yangtze Memory Technologies Co., Ltd., Accretech (China) Co., Ltd., Chao-Jung Tsai, Shanghai Zuzhu Business Consulting Partnership (Limited Partnership), Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation)[6]

Exhibits	Description
4.20	Supplement Agreement to Syndicated Loan Agreement, dated December 23, 2019, between ChipMOS TECHNOLOGIES INC. and, Taiwan Cooperative Bank Co., Ltd., Bank of Taiwan Co., Ltd., Land Bank of Taiwan Co., Ltd., Taishin International Bank Co., Ltd., Hun Nan Commercial Bank Co., Ltd., Chang Hwa Commercial Bank Co., Ltd. and Yuanta Commercial Bank Co., Ltd. (English Translation) [6]
4.21	Amendment and Restatement of Agreement for Sino-Foreign Equity Joint Venture dated May 11, 2020, among ChipMOS TECHNOLOGIES (BVI) LTD., Yangtze Memory Technologies Co., Ltd., Accretech (China) Co., Ltd., Chao-Jung Tsai, Shih-Jye Cheng, Shou-Kang Chen and David W. Wang. (English Translation) [7]
8.1	List of principal subsidiaries of ChipMOS TECHNOLOGIES INC.
11.1	Code of Ethics and Business Conduct. (English Translation) [3]
12.1	Certification of Principal Executive Officer required by Rule 13a-14(a) under the Exchange Act.
12.2	Certification of Principal Financial Officer required by Rule 13a-14(a) under the Exchange Act.
13.1	Certification of Principal Executive Officer required by Rule 13a-14(b) under the Exchange Act.
13.2	Certification of Principal Financial Officer required by Rule 13a-14(b) under the Exchange Act.
101.INS	Inline XBRL Instance Document—the instance document does not appear in the Interactive Data File because its XBRL tags are 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 (formatted as inline XBRL and contained in Exhibit 101)

(1) Incorporated by reference to our Registration Statement on Form F-4 (File No. 333-209733), filed on February 26, 2016.
(2) Incorporated by reference to our Registration Statement on Form F-6/Amendment No. 1 (File No. 333-209736), filed on June 21, 2016.
(3) Incorporated by reference to the Annual Report on Form 20-F (File No. 001-37928) of ChipMOS TECHNOLOGIES INC., filed on April 20, 2017.
(4) Incorporated by reference to the Annual Report on Form 20-F (File No. 001-37928) of ChipMOS TECHNOLOGIES INC., filed on April 19, 2018.
(5) Incorporated by reference to the Annual Report on Form 20-F (File No. 001-37928) of ChipMOS TECHNOLOGIES INC., filed on April 25, 2019.
(6) Incorporated by reference to the Annual Report on Form 20-F (File No. 001-37928) of ChipMOS TECHNOLOGIES INC., filed on April 23, 2020.
(7) Incorporated by reference to the Annual Report on Form 20-F (File No. 001-37928) of ChipMOS TECHNOLOGIES INC., filed on April 20, 2021.

We have not included as exhibits certain instruments with respect to our debt, the amount of debt authorized under each of which does not exceed 10% of our total assets, and we agree to furnish a copy of any such instrument to the Commission upon request.

SIGNATURES

Pursuant to the requirements of Section 12 of the Securities Exchange Act of 1934, the Registrant certifies that it meets all the requirements for filing on Form 20-F and it has duly caused this Annual Report on Form 20-F to be signed on its behalf by the undersigned, thereunto duly authorized, in Hsinchu, Taiwan, Republic of China, on April 14, 2022.

ChipMOS TECHNOLOGIES INC.

By: **/s/ Shih-Jye Cheng**
Name: **Shih-Jye Cheng**
Title: **Chairman and President**

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of ChipMOS TECHNOLOGIES INC.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial position of ChipMOS TECHNOLOGIES INC. and its subsidiaries (the "Company") as of December 31, 2021 and 2020, and the related consolidated statements of comprehensive income, of changes in equity and of cash flows for each of the three years in the period ended December 31, 2021, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2021, 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021 in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control over Financial Reporting appearing under Item 15. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company 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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements 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. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

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 (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) 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.

Revenue recognition – estimating progress relating to assembly services, services for Liquid Crystal Display and other Flat-Panel Display Driver Semiconductors and Bumping

As described in Notes 4 aa), dd), 25 and 44 e) to the consolidated financial statements, the Company earns revenue from assembly services, services for Liquid Crystal Display and other Flat-Panel Display Driver Semiconductors and Bumping. The Company recognized revenue associated with aforementioned services totalling NT$21,500,435 thousand for the year ended December 31, 2021. Such revenue is recognized over a period of time, during which the Company satisfied its performance obligations to the customer. The Company used an input method (input costs incurred as a percentage of total expected input costs) to measure the progress towards completion of performance obligation and determine the amount of related revenue. Due to the nature of the work performed, management's estimation of the progress towards completion of performance obligation is complex and requires significant judgment.

The principal considerations for our determination that performing procedures relating to revenue recognition – estimating progress relating to assembly services, services for Liquid Crystal Display and other Flat-Panel Display Driver Semiconductors and Bumping is a critical audit matter are there was significant judgment made by management in estimating the progress towards completion of performance obligation. This in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures and in evaluating audit evidence relating to revenue generated from assembly services, services for Liquid Crystal Display and other Flat-Panel Display Driver Semiconductors and Bumping.

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Report of Independent Registered Public Accounting Firm

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to accounting for revenue generated from aforementioned services, including the controls addressing the completeness and accuracy of the data utilized and the management's process to recognize and measure such revenue. These procedures also included, among others, (i) validating the reasonableness of total expected input costs incurred on a testing basis relating to aforementioned services, (ii) recalculating management's estimate of the progress towards completion of performance obligation and (iii) testing the reasonableness of management's key assumptions to estimate the progress towards completion of performance obligation (including utilizing data from recently completed services to estimate the progress towards completion of performance obligation for in-progress services).

/s/ PricewaterhouseCoopers, Taiwan
Taipei, Taiwan
Republic of China
April 14, 2022

We have served as the Company's auditor since 2015.

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Financial Position
December 31, 2020 and 2021

	Notes	December 31, 2020 NT$000	December 31, 2021 NT$000	December 31, 2021 US$000
Assets				
Current assets				
Cash and cash equivalents	6	4,113,651	5,906,176	212,912
Current financial assets at fair value through profit or loss	7	53,120	359,960	12,976
Current financial assets at amortized cost	8	206,482	29,239	1,054
Current contract assets	25	389,016	400,255	14,429
Notes receivable, net		599	1,035	37
Accounts receivable, net	9	5,364,156	6,344,246	228,704
Other receivables		51,436	86,879	3,132
Current tax assets		—	389	14
Inventories	10	2,102,075	3,207,177	115,616
Prepayments		75,568	149,947	5,405
		12,356,103	16,485,303	594,279
Non-current assets				
Non-current financial assets at fair value through profit or loss	7	10,368	—	—
Non-current financial assets at fair value through other comprehensive income	11	262,007	384,521	13,862
Non-current financial assets at amortized cost	8,38	48,319	37,539	1,353
Investments accounted for using equity method	12	3,271,677	3,900,449	140,608
Property, plant and equipment, net	13,38	17,994,686	20,111,121	724,986
Right-of-use assets	14	859,069	835,805	30,130
Deferred tax assets	33	185,691	180,598	6,510
Refundable deposits		21,186	21,278	767
Other non-current assets		71,708	565,970	20,403
		22,724,711	26,037,281	938,619
Total assets		**35,080,814**	**42,522,584**	**1,532,898**

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Financial Position (Continued)
December 31, 2020 and 2021

	Notes	December 31, 2020 NT$000	December 31, 2021 NT$000	December 31, 2021 US$000
Liabilities				
Current liabilities				
Short-term bank Loans	15,36	—	731,751	26,379
Notes payable		2,899	23	1
Accounts payable	16	966,821	1,012,391	36,496
Other payables	17	3,249,403	4,378,439	157,838
Current tax liabilities		580,430	1,041,520	37,546
Current provisions	45	3,463	4,281	154
Current lease liabilities	36	132,549	169,782	6,121
Receipts in advance		10,790	—	—
Long-term bank loans, current portion	18,36,38	748,353	46,826	1,688
Current refund liabilities	45	9,864	9,849	355
Other current liabilities		21,059	14,221	513
		5,725,631	7,409,083	267,091
Non-current liabilities				
Long-term bank loans	18,36,38	6,985,212	9,366,539	337,655
Deferred tax liabilities	33	310,427	278,177	10,028
Non-current lease liabilities	36	737,946	681,469	24,566
Long-term deferred revenue		72,438	120,188	4,333
Net defined benefit liability, non-current	19	511,651	503,288	18,143
Guarantee deposits	36	21,670	21,625	779
		8,639,344	10,971,286	395,504
Total liabilities		**14,364,975**	**18,380,369**	**662,595**
Equity				
Equity attributable to equity holders of the Company				
Capital stock	21	7,272,401	7,272,401	262,163
Capital surplus	22	6,050,787	6,055,621	218,299
Retained earnings	23			
Legal reserve		1,837,894	2,070,505	74,640
Special reserve		19,802	—	—
Unappropriated retained earnings		5,401,569	8,521,848	307,204
Other equity interest	24	133,386	221,840	7,997
Total equity		**20,715,839**	**24,142,215**	**870,303**
Total liabilities and equity		**35,080,814**	**42,522,584**	**1,532,898**

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

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income
Years Ended December 31, 2019, 2020 and 2021

	Notes	2019	2020	2021	2021
		NT$000	NT$000	NT$000	US$000
Revenue	25,44	20,337,881	23,011,381	27,400,035	987,745
Cost of revenue	10,31,32	(16,411,742)	(17,979,208)	(20,146,057)	(726,246)
Gross profit		**3,926,139**	**5,032,173**	**7,253,978**	**261,499**
Sales and marketing expenses	31,32	(56,076)	(56,978)	(73,928)	(2,665)
General and administrative expenses	31,32	(498,241)	(528,759)	(604,029)	(21,774)
Research and development expenses	31,32	(1,007,631)	(1,015,512)	(1,139,219)	(41,068)
Other income (expenses), net	26	92,928	135,578	125,587	4,527
Operating profit	**44**	**2,457,119**	**3,566,502**	**5,562,389**	**200,519**
Interest income	27,44	64,368	27,778	9,980	360
Other income	28	10,759	21,157	34,496	1,243
Other gains and losses	29	(148,414)	(323,267)	(65,829)	(2,373)
Finance costs	30	(180,262)	(171,482)	(131,184)	(4,729)
Share of (loss) profit of associates and joint ventures accounted for using equity method	12,44	(154,926)	(147,329)	625,733	22,557
Gain on disposal of investment accounted for using equity method	12	973,609	—	—	—
Profit before income tax		**3,022,253**	**2,973,359**	**6,035,585**	**217,577**
Income tax expense	33	(513,679)	(594,381)	(1,098,318)	(39,593)
Profit for the year		**2,508,574**	**2,378,978**	**4,937,267**	**177,984**
Other comprehensive income (loss):					
Profit (loss) on remeasurements of defined benefit plans	19	20,916	(51,990)	(14,999)	(541)
Unrealized (loss) gain on valuation of equity instruments at fair value through other comprehensive income	11	(52,549)	140,199	122,514	4,416
Share of other comprehensive income of associates and joint ventures accounted for using equity method that will not be reclassified to profit or loss	12	5,732	23,143	28,843	1,040
Income tax effect on components that will not be reclassified to profit or loss	33	2,833	(24,396)	(27,460)	(990)
Components of other comprehensive (loss) income that will not be reclassified to profit or loss		**(23,068)**	**86,956**	**108,898**	**3,925**
Exchange differences on translation of foreign operations	**24**	(104,198)	28,352	(24,695)	(890)
Components of other comprehensive (loss) income that will be reclassified to profit or loss		**(104,198)**	**28,352**	**(24,695)**	**(890)**
Other comprehensive (loss) income, net of income tax		**(127,266)**	**115,308**	**84,203**	**3,035**
Total comprehensive income for the year		**2,381,308**	**2,494,286**	**5,021,470**	**181,019**

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Comprehensive Income (Continued)
Years Ended December 31, 2019, 2020 and 2021

	Notes	2019 NT$000	2020 NT$000	2021 NT$000	2021 US$000
Earnings per share – basic	34	**NT$ 3.45**	**NT$ 3.27**	**NT$ 6.79**	**US$0.24**
Earnings per share – diluted	34	**NT$ 3.40**	**NT$ 3.23**	**NT$ 6.65**	**US$0.24**
Earnings per equivalent ADS – basic		**NT$69.00**	**NT$65.42**	**NT$135.78**	**US$4.89**
Earnings per equivalent ADS – diluted		**NT$68.06**	**NT$64.57**	**NT$132.93**	**US$4.79**

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

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Changes in Equity
Years Ended December 31, 2019, 2020 and 2021

	Equity attributable to equity holders of the Company								
			Retained earnings		Other equity interest				
	Capital Stock	Capital surplus	Legal reserve	Unappropriated retained earnings	Financial statements translation differences of foreign operations	Unrealized gain (loss) on valuation of financial assets at fair value through other comprehensive income	Unearned employee awards	Treasury stock	Total equity
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
Balance at January 1, 2019	**7,528,577**	**6,263,553**	**1,469,170**	**3,602,663**	**14,516**	**106,898**	**(1,701)**	**(962,503)**	**18,021,173**
Profit for the year	—	—	—	2,508,574	—	—	—	—	2,508,574
Other comprehensive income (loss)	—	—	—	17,372	(104,198)	(40,440)	—	—	(127,266)
Total comprehensive income (loss) for the year (Note 24)	—	—	—	2,525,946	(104,198)	(40,440)	—	—	2,381,308
Appropriation of prior year's earnings:									
Legal reserve (Note 23)	—	—	110,308	(110,308)	—	—	—	—	—
Cash dividends (Note 23)	—	—	—	(872,718)	—	—	—	—	(872,718)
Restricted shares (Note 20)	(477)	(412)	—	10	—	—	1,701	—	822
Cancellation of treasury stock (Note 21)	(255,699)	(212,354)	—	(494,450)	—	—	—	962,503	—
Disposal of investment accounted for using equity method (Note 24)	—	—	—	72	—	(72)	—	—	—
Balance at December 31, 2019	**7,272,401**	**6,050,787**	**1,579,478**	**4,651,215**	**(89,682)**	**66,386**	**—**	**—**	**19,530,585**

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Changes in Equity (Continued)
Years Ended December 31, 2019, 2020 and 2021

	Equity attributable to equity holders of the Company							
			Retained earnings			Other equity interest		
	Capital stock	Capital surplus	Legal reserve	Special reserve	Unappropriated retained earnings	Financial statements translation differences of foreign operations	Unrealized gain on valuation of financial assets at fair value through other comprehensive income	Total equity
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
Balance at January 1, 2020	**7,272,401**	**6,050,787**	**1,579,478**	**—**	**4,651,215**	**(89,682)**	**66,386**	**19,530,585**
Profit for the year	—	—	—	—	2,378,978	—	—	2,378,978
Other comprehensive (loss) income	—	—	—	—	(41,374)	28,352	128,330	115,308
Total comprehensive income for the year (Note 24)	—	—	—	—	2,337,604	28,352	128,330	2,494,286
Appropriation of prior year's earnings:								
Legal reserve (Note 23)	—	—	258,416	—	(258,416)	—	—	—
Special reserve (Note 23)	—	—	—	19,802	(19,802)	—	—	—
Cash dividends (Note 23)	—	—	—	—	(1,309,032)	—	—	(1,309,032)
Balance at December 31, 2020	**7,272,401**	**6,050,787**	**1,837,894**	**19,802**	**5,401,569**	**(61,330)**	**194,716**	**20,715,839**

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Changes in Equity (Continued)
Years Ended December 31, 2019, 2020 and 2021

	Equity attributable to equity holders of the Company							
			Retained earnings			Other equity interest		
	Capital stock	Capital surplus	Legal reserve	Special reserve	Unappropriated retained earnings	Financial statements translation differences of foreign operations	Unrealized gain on valuation of financial assets at fair value through other comprehensive income	Total equity
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
Balance at January 1, 2021	**7,272,401**	**6,050,787**	**1,837,894**	**19,802**	**5,401,569**	**(61,330)**	**194,716**	**20,715,839**
Profit for the year	—	—	—	—	4,937,267	—	—	4,937,267
Other comprehensive (loss) income	—	—	—	—	(4,251)	(24,695)	113,149	84,203
Total comprehensive income (loss) for the year (Note 24)	—	—	—	—	4,933,016	(24,695)	113,149	5,021,470
Appropriation of prior year's earnings:								
Legal reserve (Note 23)	—	—	232,611	—	(232,611)	—	—	—
Special reserve (Note 23)	—	—	—	(19,802)	19,802	—	—	—
Cash dividends (Note 23)	—	—	—	—	(1,599,928)	—	—	(1,599,928)
Changes in associates accounted for using equity method (Note 22)	—	4,834	—	—	—	—	—	4,834
Balance at December 31, 2021	**7,272,401**	**6,055,621**	**2,070,505**	**—**	**8,521,848**	**(86,025)**	**307,865**	**24,142,215**

The accompanying note consolidated financial statements.

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows
Years Ended December 31, 2019, 2020 and 2021

	Notes	2019 NT$000	2020 NT$000	2021 NT$000	2021 US$000
Cash flows from operating activities					
Profit before income tax		3,022,253	2,973,359	6,035,585	217,577
Adjustments to reconcile profit (loss)					
Depreciation expenses	13,14,31,44	3,731,914	4,175,519	4,634,112	167,055
(Reversal of) expected credit losses		(806)	264	299	11
Interest expense	30,44	171,075	162,400	120,998	4,362
Interest income	27,44	(64,368)	(27,778)	(9,980)	(360)
Dividend income	28	(585)	(3,229)	(4,690)	(169)
Share-based payments	20,32	822	—	—	—
Share of loss (profit) of associates and joint ventures accounted for using equity method		154,926	147,329	(625,733)	(22,557)
Gain on valuation of financial assets at fair value through profit or loss	7,29	(1,317)	(24,015)	(15,262)	(550)
Gain on disposal of property, plant and equipment, net	26	(20,271)	(48,070)	(33,935)	(1,223)
Insurance compensation income	26	(10,435)	—	—	—
Gain from lease modification		—	—	(891)	(32)
Impairment loss on property, plant and equipment	13,26	9,938	—	4,843	174
Gain on disposal of investment accounted for using equity method	12	(973,609)	—	—	—
Deferred revenue		(12,279)	(10,143)	(12,389)	(447)
Changes in operating assets and liabilities					
Financial assets at fair value through profit or loss		1,750	(28,435)	(290,637)	(10,477)
Current contract assets		(78,013)	(11,150)	(11,242)	(405)
Accounts and notes receivable		294,409	(911,355)	(980,816)	(35,357)
Accounts receivable – related parties		(905)	1,045	—	—
Other receivables		(8,082)	13,529	(46,089)	(1,661)
Other receivables – related parties		12,437	4,923	—	—
Inventories		11,193	(334,433)	(1,105,102)	(39,838)
Prepayments		(4,333)	(10,485)	(67,401)	(2,430)
Other non-current assets		6,914	6,337	6,915	249
Current contract liabilities		(201)	(1,231)	—	—
Accounts and notes payable		182,277	170,172	42,694	1,539
Accounts payable – related parties		(347)	—	—	—
Other payables		331,207	112,151	471,766	17,007
Other payables – related parties		(218)	—	—	—
Current provisions		(27,354)	1,465	818	29
Current refund liabilities		(6,627)	(16,136)	(15)	(1)
Other current liabilities		1,442	(11,183)	(6,838)	(247)
Net defined benefit liability, non-current		(19,742)	(20,446)	(23,362)	(842)
Cash generated from operations		6,703,065	6,310,404	8,083,648	291,407
Interest received		67,105	32,817	10,344	373
Dividends received		20,585	23,229	17,140	618
Interest paid		(171,149)	(150,135)	(99,857)	(3,600)
Income tax paid		(637,169)	(276,079)	(691,566)	(24,930)
Net cash generated from operating activities		**5,982,437**	**5,940,236**	**7,319,709**	**263,868**

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Consolidated Statements of Cash Flows (Continued)
Years Ended December 31, 2019, 2020 and 2021

	Notes	2019 NT$000	2020 NT$000	2021 NT$000	2021 US$000
Cash flows from investing activities					
Decrease (increase) in financial assets at amortized cost		30,851	(17,381)	188,023	6,778
Proceeds from insurance compensation		10,435	—	—	—
Proceeds from disposal of investment accounted for using equity method	12	1,180,179	—	—	—
Proceeds from disposal of financial assets at fair value through profit or loss		—	—	9,427	340
Acquisition of property, plant and equipment	35	(5,440,621)	(3,961,026)	(5,881,506)	(212,023)
Proceeds from disposal of property, plant and equipment		21,434	87,107	120,586	4,347
Decrease (increase) in refundable deposits		861	(41)	(92)	(3)
Increase in other non-current assets		(45,480)	(10,919)	(501,177)	(18,066)
Increase in long-term deferred revenue		4,500	85,909	49,349	1,779
Proceeds from capital reduction of investment in associate		—	17,000	—	—
Net cash used in investing activities		**(4,237,841)**	**(3,799,351)**	**(6,015,390)**	**(216,848)**
Cash flows from financing activities	36				
Proceeds from short-term bank loans		834,955	151,071	2,195,726	79,154
Payments on short-term bank loans		(834,955)	(151,071)	(1,463,975)	(52,775)
Payment on lease liabilities		(48,161)	(84,928)	(289,668)	(10,442)
Proceeds from long-term bank loans		—	4,429,593	4,908,782	176,957
Payments on long-term bank loans		(756,450)	(5,756,450)	(3,256,450)	(117,392)
Increase (decrease) in guarantee deposits		3	575	(45)	(2)
Cash dividend paid	23	(872,718)	(1,309,032)	(1,599,928)	(57,676)
Net cash (used in) generated from financing activities		**(1,677,326)**	**(2,720,242)**	**494,442**	**17,824**
Net increase (decrease) in cash and cash equivalents		67,270	(579,357)	1,798,761	64,844
Effect of foreign exchange rate changes		(5,708)	(11,076)	(6,236)	(225)
Cash and cash equivalents at beginning of year	6	4,642,522	4,704,084	4,113,651	148,293
Cash and cash equivalents at end of year	6	**4,704,084**	**4,113,651**	**5,906,176**	**212,912**

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

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements
December 31, 2019, 2020 and 2021

1. Corporate and group information

ChipMOS TECHNOLOGIES INC. (the "Company" or "ChipMOS Taiwan") was incorporated in the Republic of China ("ROC") on July 28, 1997. The Company and its subsidiaries (collectively referred herein as the "Group") are primarily engaged in the research, development, manufacturing and sale of high-integration and high-precision integrated circuits and related assembly and testing services. On April 11, 2014, the Company's shares were listed on the Taiwan Stock Exchange ("TWSE"). On November 1, 2016, the Company's American Depositary Shares ("ADSs") were listed on the NASDAQ Global Select Market and traded under the ticker symbol "IMOS".

2. The authorization of the consolidated financial statements

The accompanying consolidated financial statements were authorized for issuance by the Board of Directors on April 14, 2022.

3. Application of new and revised International Financial Reporting Standards ("IFRS"), International Accounting Standards ("IAS"), International Financial Reporting Interpretations Committee ("IFRIC") Interpretations and Standing Interpretations Committee ("SIC") Interpretations issued by the International Accounting Standards Board ("IASB"), (collectively, "IFRSs")

a) Amendments to IFRSs and the new interpretation that are mandatorily effective for the current year

New Standards, Interpretations and Amendments	Effective date issued by IASB
Amendments to IFRS 4, "Extension of the Temporary Exemption from Applying IFRS 9"	January 1, 2021
Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16, "Interest Rate Benchmark Reform – Phase 2"	January 1, 2021
Amendments to IFRS 16, "Covid-19-Related Rent Concessions beyond 30 June 2021"	April 1, 2021

Based on the Group's assessment, the above standards and interpretations have no significant impact on the Group's financial position and financial performance.

b) New standards, interpretations and amendments in issue but not yet effective

New Standards, Interpretations and Amendments	Effective date issued by IASB
Amendments to IFRS 3, "Reference to the Conceptual Framework"	January 1, 2022
Amendments to IAS 16, "Property, Plant and Equipment: Proceeds before Intended Use"	January 1, 2022
Amendments to IAS 37, "Onerous Contracts – Cost of Fulfilling a Contract"	January 1, 2022
Annual Improvements to IFRS Standards 2018-2020"	January 1, 2022
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 17, "Insurance Contracts"	January 1, 2023
Amendments to IFRS 17, "Insurance Contracts"	January 1, 2023
Amendment to IFRS 17, "Initial Application of IFRS 17 and IFRS 9 – Comparative Information"	January 1, 2023
Amendments to IAS 1, "Classification of Liabilities as Current or Non-current"	January 1, 2023
Amendments to IAS 1, "Disclosure of Accounting Policies"	January 1, 2023
Amendments to IAS 8, "Definition of Accounting Estimates"	January 1, 2023
Amendments to IAS 12, "Deferred Tax related to Assets and Liabilities arising from a Single Transaction"	January 1, 2023

Based on the Group's assessment, the above standards and interpretations have no significant impact on the Group's financial position and financial performance.

4. Summary of significant accounting policies

The significant accounting policies applied in the preparation of these accompanying consolidated financial statements are set out below. These policies have been consistently applied during the reported periods, unless otherwise stated.

a) Statement of compliance

The consolidated financial statements of the Group have been prepared in accordance with IFRSs as issued by the IASB.

b) Basis of preparation

(a) Except for the following items, the consolidated financial statements have been prepared under the historical cost convention:

i) Financial assets at fair value through profit or loss (including derivative instruments).

ii) Financial assets at fair value through other comprehensive income.

iii) Defined benefit liabilities were recognized based on the net amount of pension fund assets less the present value of benefit obligation.

(b) The preparation of the consolidated financial statements in conformity with IFRSs requires the use of certain critical accounting estimates. It also requires management to exercise its judgment in the process of applying the Group's accounting policies. The areas involving a higher degree of judgment or complexity, or areas where assumptions and estimates are significant to the consolidated financial statements are disclosed in Note 4 dd).

(c) These consolidated financial statements are presented in New Taiwan dollars ("NT$"), which is the Company's functional currency.

c) Basis of consolidation

(a) Basis for preparation of consolidated financial statements:

i) All subsidiaries are included in the Group's consolidated financial statements. Subsidiaries are all entities controlled by the Group. The Group controls an entity when the Group is exposed, or has rights, to variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Consolidation of subsidiaries begins from the date the Group obtains control of the subsidiaries and ceases when the Group loses control of the subsidiaries.

ii) Transactions, balances and unrealized gains or losses on transactions between companies within the Group are eliminated. Accounting policies of subsidiaries have been adjusted where necessary to ensure consistency with the policies adopted by the Group.

iii) Profit or loss and each component of other comprehensive income are attributed to the owners of the parent and to the non-controlling interests. Total comprehensive income is attributed to the owners of the parent and to the non-controlling interests even if this results in a deficit balance in the non-controlling interests.

iv) Changes in a parent's ownership interest in a subsidiary that do not result in the parent losing control of the subsidiary (transactions with non-controlling interests) are accounted for as equity transactions, i.e. transactions with owners in their capacity as owners. 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.

v) When the Group loses control of a subsidiary, the Group remeasures any investment retained in the former subsidiary at its fair value. That fair value is regarded as the fair value on initial recognition of a financial asset or the cost on initial recognition of the associate or joint venture. Any difference between fair value and carrying amount is recognized in profit or loss. All amounts previously recognized in other comprehensive income in relation to the subsidiary are reclassified to profit or loss on the same basis as would be required if the related assets or liabilities were disposed of. That is, when the Group loses control of a subsidiary, all gains or losses previously recognized in other comprehensive income in relation to the subsidiary should be reclassified from equity to profit or loss, if such gains or losses would be reclassified to profit or loss when the related assets or liabilities are disposed of.

(b) Subsidiaries included in the consolidated financial statements:

Name of investor	Name of investee	Main business	Location	Percentage of Ownership (%) December 31, 2020	Percentage of Ownership (%) December 31, 2021	Note
The Company	ChipMOS U.S.A., Inc. ("ChipMOS USA")	Marketing of semiconductors and electronic related products	San Jose, USA	100	100	
The Company	ChipMOS TECHNOLOGIES (BVI) LTD. ("ChipMOS BVI")	Holding company	British Virgin Islands	100	100	
ChipMOS BVI	ChipMOS SEMICONDUCTORS (Shanghai) LTD. ("ChipMOS Shanghai")	Marketing of semiconductors and electronic related products	Shanghai, People's Republic of China ("PRC")	100	100	

(c) Subsidiaries not included in the consolidated financial statements: None.

(d) Adjustments for subsidiaries with different statements of financial position dates: Not applicable.

(e) No significant restrictions on the ability of subsidiaries to transfer funds to parent company.

(f) Subsidiaries that have non-controlling interests that are material to the Group: None.

d) Foreign currency translation

Items included in the financial statements of each of the Group's entities are measured using the currency of the primary economic environment in which the entity operates (the "functional currency"). The consolidated financial statements are presented in NT$, which is the Company's functional currency and the Group's presentation currency.

(a) Foreign currency transactions and balances

i) Foreign currency transactions are translated into the functional currency using the exchange rates on the trade date or measurement date. Therefore, foreign exchange differences resulting from the settlement of such transactions are recognized in profit or loss in the period in which they arise.

ii) Monetary assets and liabilities denominated in foreign currencies at the period end are re-translated at the exchange rates prevailing at the statements of financial position date. Exchange differences arising upon re-translation are recognized in profit or loss on the statements of financial position date.

iii) Non-monetary assets and liabilities denominated in foreign currencies held at fair value through profit or loss are re-translated at the exchange rates prevailing at the statements of financial position date; their exchange differences are recognized in profit or loss. Non-monetary assets and liabilities denominated in foreign currencies held at fair value through other comprehensive income are re-translated at the exchange rates prevailing at the statements of financial position date; their exchange differences are recognized in other comprehensive income. However, non-monetary assets and liabilities denominated in foreign currencies that are not measured at fair value are translated using the historical exchange rates at the initial dates of the transactions.

iv) All foreign exchange differences are presented in the statement of comprehensive income under “Other gains and losses” by the nature of transactions.

(b) Translation of foreign operations

The operating results and financial position of all the group entities, associates that have different functional currency and presentation currency are translated into the presentation currency as follows:

i) Assets and liabilities for each statements of financial position are translated at the exchange rates prevailing at the statements of financial position date;

ii) Income and expenses for each statement of comprehensive income are translated at average exchange rates of that period; and

iii) All exchange differences are recognized in other comprehensive income.

e) Classification of current and non-current assets and liabilities

(a) Assets that meet one of the following criteria are classified as current assets:

i) Assets arising from operating activities that are expected to be realized, or are intended to be sold or consumed within the normal operating cycle;

ii) Assets held mainly for trading purposes;

iii) Assets that are expected to be realized within 12 months from the statements of financial position date;

iv) Cash and cash equivalents, excluding restricted cash and cash equivalents and those that are to be exchanged or used to pay off liabilities more than 12 months after the statements of financial position date.

All assets that do not meet the above criteria are classified as non-current assets.

(b) Liabilities that meet one of the following criteria are classified as current liabilities:

i) Liabilities that are expected to be settled within the normal operating cycle;

ii) Liabilities arising mainly from trading activities;

iii) Liabilities that are to be settled within 12 months from the statements of financial position date;

iv) Liabilities for which the repayment date cannot be unconditionally extended to more than 12 months after the statements of financial position date. Liabilities bearing terms that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.

All liabilities that do not meet the above criteria are classified as non-current liabilities.

f) Cash equivalents

Cash equivalents refer to short-term, highly liquid investments that are readily convertible to known amounts of cash and are subject to an insignificant risk of changes in value (including time deposits with less than 3 months contract period). Time deposits that meet the above definition and are held for the purpose of meeting short-term cash commitments in operations are classified as cash equivalents.

g) Financial assets at fair value through profit or loss

(a) Financial assets at fair value through profit or loss are financial assets that are not measured at amortized cost or fair value through other comprehensive income.

(b) On a regular way purchase or sale basis, financial assets at fair value through profit or loss are recognized and derecognized using settlement date accounting.

(c) At initial recognition, the Group measures the financial assets at fair value and recognizes the transaction costs in profit or loss. The Group subsequently measures the financial assets at fair value, and recognizes the gain or loss in profit or loss.

(d) The Group recognizes the dividend income when the right to receive such payment is confirmed, inflow of the future economic benefits associated with the dividend is probable to the Group and the amount of the dividend can be measured reliably.

h) Financial assets at fair value through other comprehensive income

(a) Financial assets at fair value through other comprehensive income comprise equity instruments which are not held for trading, and for which the Group has made an irrevocable election at initial recognition to recognize changes in fair value in other comprehensive income.

(b) On a regular way purchase or sale basis, financial assets at fair value through other comprehensive income are recognized and derecognized using settlement date accounting.

(c) At initial recognition, the Group measures the financial assets at fair value plus transaction costs. The Group subsequently measures the financial assets at fair value.

The changes in fair value of equity instruments that were recognized in other comprehensive income are reclassified to retained earnings and are not reclassified to profit or loss following the derecognition of the investment. Dividends are recognized as income when the right to receive such payment is confirmed, inflow of the future economic benefits associated with the dividend is probable to the Group and the amount of the dividend can be measured reliably.

i) Financial assets at amortized cost

(a) Financial assets at amortized cost are those that meet all of the following criteria:

i) The objective of the Group's business model is achieved by collecting contractual cash flows.

ii) The financial assets' contractual cash flows represent solely payments of principal and interest.

(b) The Group's time deposits which do not fall under cash equivalents are those with a short maturity period and are measured at initial investment amount as the effect of discounting is immaterial.

j) Accounts and notes receivable

(a) Accounts and notes receivable entitle the Group a legal right to receive consideration in exchange for transferred goods or rendered services.

(b) The short-term accounts and notes receivable without bearing interest are subsequently measured at initial invoice amount as the effect of discounting is immaterial.

k) Impairment of financial assets

For financial assets at amortized cost, at each reporting date, the Group recognizes the impairment provision for 12 months expected credit losses if there has not been a significant increase in credit risk since initial recognition or recognizes the impairment provision for the lifetime expected credit losses if such credit risk has increased since initial recognition after taking into consideration all reasonable and verifiable information that includes forecasts. On the other hand, for accounts receivable or contract assets that do not contain a significant financing component, the Group recognizes the impairment provision for lifetime expected credit losses.

l) Derecognition of financial assets

The Group derecognizes a financial asset when the contractual rights to receive the cash flows from the financial asset have expired.

m) Inventories

Inventories are initially recorded at standard costs. Cost is determined on a weighted-average cost basis. At the end of reporting period, the differences between actual costs and standard costs were allocated to inventories and cost of revenue based on an appropriate rate. Allocation of fixed production overheads is based on the normal operating capacity of the production facilities. Costs associated with underutilized capacity are expensed in the period that the cost occurs.

Inventories are valued at the lower of cost and net realizable value. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale. The item by item approach is used in raw materials. The amount of any write-down of inventories to net realizable value and all losses of inventories are recognized as an expense in the period the write-down or loss occurs.

n) Investments accounted for using equity method – associates

(a) Associates are all entities over which the Group has significant influence but not control. In general, it is presumed that the investor has significant influence, if an investor holds, directly or indirectly 20 percent or more of the voting power of the investee. Investments in associates are accounted for using the equity method and are initially recognized at cost.

(b) The Group's share of its associates' post-acquisition profits or losses is recognized in profit or loss, and its share of post-acquisition movements in other comprehensive income is recognized in other comprehensive income. When the Group's share of losses in an associate equals or exceeds its interests in the associate, including any other unsecured receivables, the Group does not recognize further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the associate.

(c) When changes in an associate's equity that are not recognized in profit or loss or other comprehensive income of the associate and such changes not affecting the Group's ownership percentage of the associate, the Group recognizes the Group's share of change in equity of the associate in "Capital surplus" in proportion to its ownership.

(d) Unrealized gains on transactions between the Group and its associates are eliminated to the extent of the Group's interests in the associates. Unrealized losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been adjusted where necessary to ensure consistency with the policies adopted by the Group.

(e) In the case where an associate issues new shares and the Group does not subscribe or proportionately acquire the new shares, which results in a change in the Group's ownership percentage of the associate while maintaining significant influence on the associate, then the Group will treat the transaction as deemed disposal and reclassify to profit or loss the proportion of the gain or loss previously recognized in other comprehensive income relating to that reduction in ownership interest where appropriate.

(f) When the Group disposes of its investment in an associate, if it loses significant influence on this associate, the amounts previously recognized in other comprehensive income in relation to the associate are reclassified to profit or loss, on the same basis as would be required if the relevant assets or liabilities were disposed of. If it still retains significant influence on this associate, then the amounts previously recognized in other comprehensive income in relation to the associate are reclassified to profit or loss proportionately in accordance with the aforementioned approach.

o) Property, plant and equipment

(a) Property, plant and equipment are initially recorded at cost. Borrowing costs incurred during the construction period are capitalized.

(b) Subsequent costs are included in the asset's carrying amount or recognized as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the Group and the cost of the item can be measured reliably. The carrying amount of the replaced part is derecognized. All other repairs and maintenance are charged to profit or loss during the financial period in which they are incurred.

(c) Land is not depreciated. Other property, plant and equipment apply cost model and are depreciated using the straight-line method to allocate their cost over their estimated useful lives. Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item must be depreciated separately.

(d) The assets' residual values, useful lives and depreciation methods are reviewed, and adjusted if appropriate, at each financial year-end. If expectations for the assets' residual values and useful lives differ from previous estimates or the patterns of consumption of the assets' future economic benefits embodied in the assets have changed significantly, any change is accounted for as a change in estimate under IAS 8 "Accounting Policies, Change in Accounting Estimates and Errors", from the date of the change. The estimated useful lives of property, plant and equipment are as follows:

Buildings	5 to 51 years
Machinery and equipment	2 to 8 years
Tools	2 to 4 years
Others	2 to 6 years

p) Leasing arrangements (lessee)–right-of-use assets / lease liabilities

(a) Leases are recognized as a right-of-use asset and a corresponding lease liability at the date at which the leased asset is available for use by the Group. For short-term leases or leases of low value assets, lease payments are recognized as an expense on a straight-line basis over the lease term.

(b) Lease liabilities include the net present value of the remaining lease payments at the commencement date, discounted using the incremental borrowing interest rate.

Lease payments are comprised of the following:

i) Fixed payments, less any lease incentives receivable;

ii) The exercise price of a purchase option, if the lessee is reasonably certain to exercise that option.

The Group subsequently measures the lease liability at amortized cost using the interest method and recognizes interest expense over the lease term. The lease liability is remeasured and the amount of remeasurement is recognized as an adjustment to the right-of-use asset when there are changes in the lease term or lease payments and such changes do not arise from contract modifications.

(c) At the commencement date, the right-of-use asset is stated at the amount of the initial measurement of lease liability. The right-of-use asset is measured subsequently using the cost model and is depreciated from the commencement date to the earlier of the end of the asset's useful life or the end of the lease term. When the lease liability is remeasured, the amount of remeasurement is recognized as an adjustment to the right-of-use asset.

q) Impairment of non-financial assets

The Group assesses at each statements of financial position date the recoverable amounts of those assets where there is an indication that they are impaired. An impairment loss is recognized for the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is the higher of an asset's fair value less costs to sell or value in use. When the circumstances or reasons for recognizing impairment loss for an asset in prior years no longer exist or diminish, the impairment loss is reversed. The increased carrying amount due to reversal should not be more than what the depreciated or amortized historical cost would have been if the impairment had not been recognized.

r) Loans

Loans comprise long-term and short-term bank loans. Loans are recognized initially at fair value, net of transaction costs incurred. Loans are subsequently stated at amortized cost; any difference between the proceeds (net of transaction costs) and the redemption value is recognized as interest expense in profit or loss over the period of the loans using the effective interest method.

s) Accounts and notes payable

(a) Accounts payable are liabilities for purchases of raw materials, goods or services and notes payable are those resulting from operating and non-operating activities.

(b) The short-term accounts and notes payable without bearing interest are subsequently measured at initial invoice amount as the effect of discounting is immaterial.

t) Derecognition of financial liabilities

A financial liability is derecognized when the obligation specified in the contract is either discharged or cancelled or expires.

u) Provisions for deficiency compensation

Provisions are recognized when the Group has a present legal or constructive obligation as a result of past events, and it is probable that an outflow of economic resources will be required to settle the obligation and the amount of the obligation can be reliably estimated. Provisions are measured at the present value of the expenditures expected to be required to settle the obligation on the statements of financial position date, which is discounted using a pre-tax discount rate that reflects the current market assessments of the time value of money and the risks specific to the obligation. When discounting is used, the increase in the provision arising from the passage of time is recognized as interest expense. Provisions are not recognized for future operating losses.

v) Employee benefits

(a) Short-term employee benefits

Short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in respect of service rendered by employees and should be recognized as expenses when the employees render service.

(b) Pensions

i) Defined contribution plans

For defined contribution plans, the contributions are recognized as pension expenses when they are due on an accrual basis. Prepaid contributions are recognized as an asset to the extent of a cash refund or a reduction in future payments.

ii) Defined benefit plans

1. Net obligation under a defined benefit plan is defined as the present value of an amount of pension benefits that employees will receive on retirement for their services with the Group in the current period or prior periods. The liability recognized in the statements of financial position in respect of defined benefit pension plans is the present value of the defined benefit obligation at the statements of financial position date less the fair value of plan assets. The net defined benefit obligation is calculated annually by independent actuaries using the projected unit credit method. The discount rate is determined by using the interest rates of government bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating to the terms of the related pension liability.

2. Remeasurements arising on defined benefit plans are recognized in other comprehensive income in the period in which they arise and are recorded as retained earnings.

3. Past service costs are recognized immediately in profit or loss.

(c) Termination benefits

Termination benefits are employee benefits provided in exchange for the termination of employment as a result from either the Group's decision to terminate an employee's employment before the normal retirement date, or an employee's decision to accept an offer of redundancy benefits in exchange for the termination of employment. The Group recognizes an expense as it can no longer withdraw an offer of termination benefits, or it recognizes related restructuring costs, whichever is earlier. Benefits that are expected to be due more than 12 months after statements of financial position date shall be discounted to their present value.

(d) Employees' compensation and directors' remuneration

Employees' compensation and directors' remuneration are recognized as expenses and liabilities, provided that such recognition is required under legal obligation or constructive obligation and those amounts can be reliably estimated. Any difference between the resolved amounts and the subsequently actual distributed amounts is accounted for as changes in estimates. If employee compensation is paid by shares, the Company calculates the number of shares based on the closing price at the previous day of the board meeting resolution.

w) Employee share-based payments

Restricted shares

(a) Restricted shares issued to employees are measured at the fair value of the equity instruments granted at the grant date, and are recognized as compensation cost over the vesting period.

(b) For restricted shares where those shares do not restrict distribution of dividends to employees and employees are not required to return the dividends received if they resign during the vesting period, the Group recognizes the fair value of the dividends received by employees who are expected to resign during the vesting period as a compensation cost at the date the dividends were declared.

(c) For restricted shares where employees do not need to pay to acquire those shares, if an employee resigns during the vesting period, the Group will recover and retire those shares at no cost.

x) Income tax

(a) The income tax expense for the period comprises current and deferred tax. Income tax is recognized in profit or loss, except to the extent that it relates to items recognized in other comprehensive income or items recognized directly in equity, in which cases the income tax is recognized in other comprehensive income or equity.

(b) The current income tax expense is calculated on the basis of the tax laws enacted or substantively enacted at the statements of financial position date in the countries where the Group and its subsidiaries operate and generate taxable income. Management periodically evaluates positions taken in tax returns with respect to situations in accordance with applicable tax regulations. It establishes provisions where appropriate based on the amounts expected to be paid to the tax authorities. An additional income tax is levied on the unappropriated retained earnings and is recorded as income tax expense in the year the profit generated.

(c) Deferred tax is recognized, using the balance sheet liability method, on temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the consolidated statements of financial position. However, the deferred tax is not accounted for if it arises from initial recognition of an asset or liability in a transaction other than a business combination that at the time of the transaction affects neither accounting nor taxable profit or loss. Deferred tax is provided on temporary differences arising on investments in subsidiaries and associates, except where the timing of the reversal of the temporary difference is controlled by the Group and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax is determined using tax rates (and laws) that have been enacted or substantially enacted at the statements of financial position date and are expected to apply when the related deferred tax asset is realized or the deferred tax liability is settled.

(d) Deferred tax assets are recognized only to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilized. At each statements of financial position date, unrecognized and recognized deferred tax assets are reassessed.

(e) A deferred tax asset shall be recognized for the carryforward of unused tax credits resulting from equity investments to the extent that it is possible that future taxable profit will be available against which the unused tax credits can be utilized.

(f) If a change in tax rate is enacted or substantively enacted, the Group recognizes the effect of the change immediately in the period in which the change occurs. The effect of the change on items recognized outside profit or loss is recognized in other comprehensive income or equity while the effect of the change on items recognized in profit or loss is recognized in profit or loss.

y) Capital stock

(a) Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new shares in net proceeds of tax are shown in equity as a deduction.

(b) Where the Company repurchases the Company's shares that have been issued, the consideration paid, including any directly attributable incremental costs (net of income taxes) is deducted from equity attributable to the Company's equity holders. Where such shares are subsequently reissued, the difference between their book value and any consideration received, net of any directly attributable incremental transaction costs and the related income tax effects, is included in equity attributable to the Company's equity holders.

z) Dividends

Dividends are recorded in the Company's financial statements in the period in which they are resolved by the Company's shareholders. Cash dividends are recorded as liabilities; stock dividends are recorded as stock dividends to be distributed and are reclassified to ordinary shares on the effective date of new shares issuance.

aa) Revenue recognition

(a) The Group is primarily engaged in the customized assembly and testing services of high-integration and high-precision integrated circuits based on customer's specification demand to create or enhance the product. When providing assembly and testing services, the Group considers:

i) Customer controls the provided raw materials and the Group receives the instruction from the customer on providing assembly and testing services and subsequent treatments.

ii) The Group provides assembly and testing services to create or enhance an asset which is solely provided and controlled by the customer. The Group has no right to transfer the asset for another use.

As the asset ownership belongs to the customer, who bears the significant risk and rewards and rights on the use of the asset, the Group recognizes assembly and testing service revenue based on the progress towards completion of performance obligation during the service period.

(b) The progress towards completion on assembly services, services for Liquid Crystal Display and other Flat-Panel Display Driver Semiconductors ("LCDD") and Bumping are measured by the actual input costs relative to estimate total expected input costs. The progress towards completion on testing services is measured by the actual incurred testing volume. The Group provides assembly and testing services based on customer's specification, thus, the input costs incurred to assembly and testing volume completed in testing services are not linear over the duration of these services. Customer payment on assembly and testing services is based on predetermined payment schedule. A contract asset is recognized when the Group provides services in excess of customer's payment.

bb) Government grants

Government grants are recognized at their fair value only when there is reasonable assurance that the Group will comply with any conditions attached to the grants will be received. Government grants are recognized in profit or loss on a systematic basis over the periods in which the Group recognizes expenses for the related costs for which the grants are intended to compensate. Government grants related to property, plant and equipment are recognized as non-current liabilities and are amortized to profit or loss over the estimated useful lives of the related assets using straight-line method.

cc) Operating segments

Operating segments are reported in a manner consistent with the internal reporting provided to the chief operating decision maker. The Group's chief operating decision maker, who is responsible for allocating resources and assessing performance of the operating segments, has been identified as the Chairman of the Board of Directors that makes strategic decisions.

dd) Critical accounting judgments, estimates and key sources of assumption uncertainty

The preparation of the accompanying consolidated financial statements requires management to make critical judgments in applying the Group's accounting policies and make critical assumptions and estimates concerning future events. Assumptions and estimates may differ from the actual results and are continually evaluated and adjusted based on historical experience and other factors. Such assumptions and estimates have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year; and the related information is addressed below:

Critical accounting estimates and assumptions - Revenue recognition

The Group recognizes revenue from services for assembly, LCDD and Bumping based on the progress towards completion of performance obligation during the service period. The Group estimates total expected input costs based on historical experience and measures the progress towards completion by the actual input costs relative to the total expected input costs.

5. Translation into U.S. dollar amounts

The Company maintains its accounts and expresses its consolidated financial statements in New Taiwan dollars. For convenience purposes, U.S. dollar amounts presented in the accompanying consolidated financial statements have been translated from New Taiwan dollars to U.S. dollars at the noon buying rate in the City of New York for cable transfers as certified for customs purposes by the Federal Reserve Bank of New York as of December 30, 2021, which was NT$27.74 to US$1.00. These convenience translations should not be construed as representations that the New Taiwan dollar amounts have been, or could in the future be, converted into U.S. dollars at this or any other rate of exchange.

6. *Cash and cash equivalents*

	December 31, 2020 NT$000	December 31, 2021 NT$000
Cash on hand and petty cash	470	450
Checking accounts and demand deposits	2,609,421	2,683,977
Time deposits	1,503,760	3,221,749
	4,113,651	**5,906,176**

a) The Group transacts with a variety of financial institutions all with high credit quality to disperse credit risk, so it expects that the probability of counterparty default is remote.

b) No cash and cash equivalents of the Group were pledged to others.

7. *Financial assets at fair value through profit or loss*

	December 31, 2020 NT$000	December 31, 2021 NT$000
Current:		
Financial assets mandatorily measured at fair value through profit or loss		
Listed stocks	46,512	339,679
Valuation adjustment	6,608	20,281
	53,120	**359,960**
Non-current:		
Financial assets mandatorily measured at fair value through profit or loss		
Foreign partnership interests	10,940	—
Valuation adjustment	(572)	—
	10,368	**—**

a) Amounts recognized in profit or loss in relation to the financial assets at fair value through profit or loss are listed below:

	Year ended December 31,		
	2019 NT$000	2020 NT$000	2021 NT$000
Financial assets mandatorily measured at fair value through profit or loss			
Beneficiary certificates*	1,750	18,077	2,530
Listed stocks	—	6,608	13,673
Foreign partnership interests	(433)	(670)	(941)
	1,317	**24,015**	**15,262**

* Beneficiary certificates represent money market funds the Company held during the reporting period. As of December 31, 2019, 2020 and 2021, there were no beneficiary certificates classified as current financial assets at fair value through profit or loss ("FVTPL").

b) No financial assets at FVTPL were pledged to others.

c) Information relating to price risk of financial assets at FVTPL is provided in Note 43.

8. *Financial assets at amortized cost*

	December 31, 2020 NT$000	December 31, 2021 NT$000
Current:		
Time deposits	**206,482**	**29,239**
Non-current:		
Restricted bank deposits	**48,319**	**37,539**

a) Amounts recognized in profit or loss in relation to financial assets at amortized cost are listed below:

	Year ended December 31,		
	2019 NT$000	2020 NT$000	2021 NT$000
Interest income	**4,467**	**2,206**	**1,187**

b) Without taking into account any collateral held or other credit enhancements, the maximum exposure to credit risk in respect of the amount that best represents the financial assets at amortized cost held by the Group is the carrying amount at the end of each reporting period.

c) Information about the financial assets at amortized cost that were pledged to others as collateral is provided in Note 38.

d) Information relating to credit risk of financial assets at amortized cost is provided in Note 43.

9. *Accounts receivable*

	December 31, 2020 NT$000	December 31, 2021 NT$000
Accounts receivable	5,365,776	6,346,156
Less: Loss allowance	(1,620)	(1,910)
	5,364,156	**6,344,246**

a) The Group's credit term granted to customers is 30~90 days. Receivables do not bear interest. The loss allowance is determined based on the credit quality of customers. Information relating to credit risk is provided in Note 43.

b) The aging analysis of accounts receivable based on past due date are as follows:

	December 31, 2020 NT$000	December 31, 2021 NT$000
Current	5,272,208	6,327,791
Within 1 month	93,568	18,365
	5,365,776	**6,346,156**

c) As of December 31, 2020 and 2021, accounts receivable were all from contracts with customers. And as of January 1, 2020, the balance of accounts receivable from contracts with customers was NT$4,452,904 thousand.

d) Without taking into account of any collateral held or other credit enhancements, the amount that best reflects the Group's maximum exposure to credit risk in respect of the accounts receivable is the carrying amount at the end of each reporting period.

e) No accounts receivable of the Group were pledged to others.

10. Inventories

	December 31, 2020		
	Cost	Allowance for impairment losses	Carrying amount
	NT$000	NT$000	NT$000
Raw materials	**2,181,890**	**(79,815)**	**2,102,075**

	December 31, 2021		
	Cost	Allowance for impairment losses	Carrying amount
	NT$000	NT$000	NT$000
Raw materials	**3,328,763**	**(121,586)**	**3,207,177**

The cost of inventories recognized as an expense for the year:

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Cost of revenue	16,372,032	17,957,568	20,103,735
Loss on abandonment	12,369	5,323	552
Allowance for inventory valuation and obsolescence loss	27,341	16,317	41,770
	16,411,742	**17,979,208**	**20,146,057**

a) Allowance for inventory valuation and obsolescence loss was recognized due to the change in net realizable value.

b) No inventories of the Group were pledged to others.

11. Non-current financial assets at fair value through other comprehensive income

	December 31, 2020	December 31, 2021
	NT$000	NT$000
Designation of equity instruments		
Foreign unlisted stocks	38,534	38,534
Valuation adjustment	223,473	345,987
	262,007	**384,521**

a) Based on the Group's business model, the foreign unlisted stocks held for strategic investments were elected to classify as "Financial assets at fair value through other comprehensive income". As of December 31, 2020 and 2021, the fair value of aforementioned investments is the carrying amount at the end of each reporting period.

b) Amounts recognized in other comprehensive income in relation to the financial assets at fair value through other comprehensive income are listed below:

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Financial assets at fair value through other comprehensive income			
Foreign unlisted stocks	(52,549)	140,199	122,514

c) No financial assets at fair value through other comprehensive income were pledged to others.

d) Information about fair value measurement is provided in Note 43 b).

12. Investments accounted for using equity method

Associates	December 31, 2020 NT$000	December 31, 2021 NT$000
JMC ELECTRONICS CO., LTD. ("JMC")	250,769	304,437
Unimos Microelectronics (Shanghai) Co., Ltd. ("Unimos Shanghai")	3,020,908	3,596,012
	3,271,677	**3,900,449**

a) The carrying amount of the Group's interests in all individually immaterial associates and the Group's share of the operating results are summarized below:

As of December 31, 2020 and 2021, the carrying amount of the Group's individually immaterial associates amounted to $3,271,677 thousand and $3,900,449 thousand, respectively.

	Year ended December 31,		
	2019 NT$000	2020 NT$000	2021 NT$000
(Loss) profit for the year from continuing operations	(154,926)	(147,329)	625,733
Other comprehensive income, net of income tax	5,732	23,143	28,843
Total comprehensive (loss) income	**(149,194)**	**(124,186)**	**654,576**

b) JMC has quoted market prices. As of December 31, 2020 and 2021, the fair value was NT$454,010 thousand and NT$468,950 thousand, respectively.

c) To further strengthen financial structure, increase balance of working capital and reduce debt ratio, the Company's Board of Directors adopted a resolution on April 2, 2019 to dispose of 9,100,000 common shares of JMC, which reduced the shareholding of equity investment in JMC to 10%. The disposal of shares was completed on April 8, 2019 for cash consideration of NT$1,180,179 thousand, and the Company recognized gain on disposal of investment in associates amounted to NT$973,609 thousand. JMC is still recognized as investment accounted for using equity method given that the Company retains significant influence by holding one seat in JMC's Board of Directors.

13. Property, plant and equipment, net

	2019						
	Land	Buildings	Machinery and equipment	Tools	Others	Construction in progress and equipment to be inspected	Total
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
January 1							
Cost	452,738	10,254,531	48,274,171	4,402,711	2,610,893	1,069,892	67,064,936
Accumulated depreciation and impairment	—	(6,345,800)	(38,042,078)	(3,660,532)	(2,196,905)	—	(50,245,315)
	452,738	**3,908,731**	**10,232,093**	**742,179**	**413,988**	**1,069,892**	**16,819,621**
January 1	452,738	3,908,731	10,232,093	742,179	413,988	1,069,892	16,819,621
Effects on initial application of IFRS 16	—	—	—	—	(31,904)	—	(31,904)
Adjusted balance at January 1	452,738	3,908,731	10,232,093	742,179	382,084	1,069,892	16,787,717
Additions	—	116,238	2,334,358	781,465	224,287	1,440,308	4,896,656
Disposals	—	—	(16,033)	(9,336)	(416)	—	(25,785)
Reclassifications	—	455,792	1,111,715	7,880	25,042	(1,573,811)	26,618
Depreciation expenses	—	(384,832)	(2,489,070)	(625,712)	(196,201)	—	(3,695,815)
Impairment losses	—	—	(9,938)	—	—	—	(9,938)
Exchange adjustment	—	—	(4)	—	(5)	—	(9)
December 31	**452,738**	**4,095,929**	**11,163,121**	**896,476**	**434,791**	**936,389**	**17,979,444**
December 31							
Cost	452,738	10,821,972	51,244,512	5,008,321	1,937,755	936,389	70,401,687
Accumulated depreciation and impairment	—	(6,726,043)	(40,081,391)	(4,111,845)	(1,502,964)	—	(52,422,243)
	452,738	**4,095,929**	**11,163,121**	**896,476**	**434,791**	**936,389**	**17,979,444**

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements (Continued)
December 31, 2019, 2020 and 2021

	2020						
	Land	Buildings	Machinery and equipment	Tools	Others	Construction in progress and equipment to be inspected	Total
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
January 1							
Cost	452,738	10,821,972	51,244,512	5,008,321	1,937,755	936,389	70,401,687
Accumulated depreciation and impairment	—	(6,726,043)	(40,081,391)	(4,111,845)	(1,502,964)	—	(52,422,243)
	452,738	**4,095,929**	**11,163,121**	**896,476**	**434,791**	**936,389**	**17,979,444**
January 1	452,738	4,095,929	11,163,121	896,476	434,791	936,389	17,979,444
Additions	—	132,572	592,565	409,832	142,776	2,855,870	4,133,615
Disposals	—	—	(8,940)	(3,121)	(7,297)	—	(19,358)
Reclassifications	—	258,421	2,336,238	398,798	159,195	(3,152,652)	—
Depreciation expenses	—	(394,636)	(2,734,667)	(749,624)	(220,066)	—	(4,098,993)
Exchange adjustment	—	—	(20)	—	(2)	—	(22)
December 31	**452,738**	**4,092,286**	**11,348,297**	**952,361**	**509,397**	**639,607**	**17,994,686**
December 31							
Cost	452,738	11,212,129	53,246,474	5,451,547	2,185,299	639,607	73,187,794
Accumulated depreciation and impairment	—	(7,119,843)	(41,898,177)	(4,499,186)	(1,675,902)	—	(55,193,108)
	452,738	**4,092,286**	**11,348,297**	**952,361**	**509,397**	**639,607**	**17,994,686**

	2021						
	Land	Buildings	Machinery and equipment	Tools	Others	Construction in progress and equipment to be inspected	Total
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
January 1							
Cost	452,738	11,212,129	53,246,474	5,451,547	2,185,299	639,607	73,187,794
Accumulated depreciation and impairment	—	(7,119,843)	(41,898,177)	(4,499,186)	(1,675,902)	—	(55,193,108)
	452,738	**4,092,286**	**11,348,297**	**952,361**	**509,397**	**639,607**	**17,994,686**
January 1	452,738	4,092,286	11,348,297	952,361	509,397	639,607	17,994,686
Additions	—	1,345	11,829	407	189	6,538,932	6,552,702
Disposals	—	—	(66,873)	(9,502)	—	—	(76,375)
Reclassifications	—	673,208	4,890,400	690,346	241,656	(6,495,610)	—
Depreciation expenses	—	(423,283)	(2,896,612)	(795,622)	(239,515)	—	(4,355,032)
Impairment losses	—	—	(4,843)	—	—	—	(4,843)
Exchange adjustment	—	—	(13)	—	(4)	—	(17)
December 31	**452,738**	**4,343,556**	**13,282,185**	**837,990**	**511,723**	**682,929**	**20,111,121**
December 31							
Cost	452,738	11,877,419	57,176,339	5,574,316	2,345,204	682,929	78,108,945
Accumulated depreciation and impairment	—	(7,533,863)	(43,894,154)	(4,736,326)	(1,833,481)	—	(57,997,824)
	452,738	**4,343,556**	**13,282,185**	**837,990**	**511,723**	**682,929**	**20,111,121**

a) Amount of borrowing costs capitalized as part of property, plant and equipment and the range of the interest rates for such capitalization are as follows:

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Amount of interest capitalized	15,114	9,762	11,193
Range of the interest rates for capitalization	1.7822%	1.4909%	1.1358%

b) Information about the property, plant and equipment that were pledged to others as collaterals is provided in Note 38.

14. Leasing arrangements - lessee

a) The Group leases various assets, including land, buildings, machinery and equipment, and others. Lease agreements are typically made for periods of 1 to 30 years. Lease terms are negotiated on an individual basis and contain a wide range of different terms and conditions. The lease agreements do not impose covenants, but leased assets may not be used as security for borrowing purposes.

b) The carrying amount of right-of-use assets and the depreciation expenses are as follows:

	December 31, 2020	December 31, 2021
	Carrying amount	Carrying amount
	NT$000	NT$000
Land	636,261	616,458
Buildings	19,044	10,946
Machinery and equipment	203,249	204,484
Others	515	3,917
	859,069	**835,805**

	Year ended December 31,		
	2019	2020	2021
	Depreciation expenses	Depreciation expenses	Depreciation expenses
	NT$000	NT$000	NT$000
Land	22,657	20,938	20,486
Buildings	7,113	7,819	9,870
Machinery and equipment	4,520	46,225	247,090
Others	1,809	1,544	1,634
	36,099	**76,526**	**279,080**

c) For the years ended December 31, 2020 and 2021, additions to right-of-use assets were NT$261,798 thousand and NT$433,768 thousand, respectively.

d) The information on profit or loss accounts relating to lease contracts is as follows:

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Items affecting profit or loss			
Interest expense on lease liabilities	14,349	13,442	15,245
Expense on short-term lease contracts	230,589	202,782	143,791

e) For the years ended December 31, 2019, 2020 and 2021, the Group's total cash outflow for leases were NT$273,709 thousand, NT$274,727 thousand and NT$448,290 thousand, respectively.

15. *Short-term bank loans*

Type of loans	December 31, 2020 NT$000	December 31, 2021 NT$000
Bank loans		
Unsecured bank loans	—	**731,751**
Interest rate range	—	**0.6604%~0.7394%**
Unused credit lines of short-term bank loans		
NT$000	**3,251,000**	**2,918,249**
US$000	**90,000**	**85,025**

16. *Accounts payable*

	December 31, 2020 NT$000	December 31, 2021 NT$000
Accounts payable	766,805	765,403
Estimated accounts payable	200,016	246,988
	966,821	**1,012,391**

17. *Other payables*

	December 31, 2020 NT$000	December 31, 2021 NT$000
Payables to contractors and equipment suppliers	1,145,359	1,816,555
Salaries and bonuses payable	788,720	829,762
Employees' compensation payable	332,080	673,387
Directors' remuneration payable	16,604	25,690
Pension payable	15,159	16,600
Interest payable	1,958	3,277
Other expense payable	949,523	1,013,168
	3,249,403	**4,378,439**

18. Long-term bank loans

Type of loans	Period and payment term	December 31, 2020 NT$000	December 31, 2021 NT$000
Syndicated bank loan	Borrowing period is from May 30, 2018 to May 30, 2023; interest is repayable monthly; principal is repayable semi-annually from November 30, 2018	3,310,000	54,000
Government granted bank loans	Borrowing period is from March 11, 2020 to November 15, 2031; interest is repayable monthly; principal is repayable monthly from March 15, 2023	4,505,000	9,463,131
Less: Fee on syndicated bank loan		(17,223)	(10,026)
Less: Unamortized interest on government granted bank loans		(64,212)	(93,740)
Less: Current portion (fee included)		(748,353)	(46,826)
		6,985,212	**9,366,539**
Interest rate range		**0.65%~1.7895%**	**0.45%~1.7895%**
Unused credit lines of long-term bank loan NT$000		**11,239,000**	**8,776,868**

a) On January 1, 2019, Ministry of Economic Affairs, ROC ("MOEA") implemented the "Action Plan for Welcoming Overseas Taiwanese Businesses to Return to Invest in Taiwan" and companies are subsidized with preferential interest loans for qualified investment projects. The Company has obtained the qualification from the MOEA, and signed loan agreements with financial institutions during January 2020 and November 2021 with the line of credit amounted to NT$14.64 billion and terms from seven to ten years. Funding from these loans was used to invest in machineries, equipment and plant expansions and broaden the Company's working capital.

b) On May 15, 2018, the Company entered into a syndicated loan with eleven banks in Taiwan, including Taiwan Cooperative Bank, in the amount of NT$12 billion with a term of five years. Funding from this syndicated loan was used to repay the existing debt of financial institutions and broaden the Company's working capital. Pursuant to the syndicated loan agreement, the Group is required to maintain certain financial ratios including current ratio, interest protection multiples and debt to equity ratio during the loan periods.

c) Information about the items that are pledged to others as collaterals for long-term bank loans is provided in Note 38.

19. Pensions

a) Defined Benefit Plans

The Company has a defined benefit pension plan in accordance with the Labor Standards Act, covering all regular employees' service years prior to the enforcement of the Labor Pension Act on July 1, 2005 and service years thereafter of employees who chose to continue to be subject to the pension mechanism under the Labor Standards Act. Under the defined benefit pension plan, two units are accrued for each year of service for the first 15 years and one unit for each additional year thereafter, subject to a maximum of 45 units. Pension benefits are based on the number of units accrued and the average monthly salaries and wages of the last 6 months prior to retirement. The Company contributes monthly an amount equal to 2% of the employees' monthly salaries and wages to the pension fund deposited with the Bank of Taiwan, the trustee, under the name of the independent pension fund committee. Also, the Company would assess the balance in the aforementioned labor pension reserve account by the end of every year. If the account balance is insufficient to pay the pension calculated by the aforementioned method, to the employees expected to be qualified for retirement next year, the Company will make contributions to cover the deficit by March of following year.

(a) The amounts recognized in the statements of financial position are as follows:

	December 31, 2020	December 31, 2021
	NT$000	NT$000
Present value of defined benefit obligations	(943,391)	(959,677)
Fair value of plan assets	431,740	456,389
Net defined benefit liability	**(511,651)**	**(503,288)**

(b) Movements in net defined benefit liability are as follows:

	2019		
	Present value of defined benefit obligations	Fair value of plan assets	Net defined benefit liability
	NT$000	NT$000	NT$000
January 1	(910,081)	389,316	(520,765)
Current services cost	(332)	—	(332)
Interest (expense) income	(11,170)	4,831	(6,339)
	(921,583)	394,147	(527,436)
Remeasurements:			
Return on plan assets (excluding amounts included in interest income or expense)	—	12,601	12,601
Financial assumption movement effect	(27,993)	—	(27,993)
Experience adjustments	36,308	—	36,308
	8,315	12,601	20,916
Pension fund contribution	—	26,413	26,413
Paid pension	12,109	(12,109)	—
December 31	**(901,159)**	**421,052**	**(480,107)**

	2020		
	Present value of defined benefit obligations	Fair value of plan assets	Net defined benefit liability
	NT$000	NT$000	NT$000
January 1	(901,159)	421,052	(480,107)
Current services cost	(263)	—	(263)
Interest (expense) income	(8,835)	4,171	(4,664)
	(910,257)	425,223	(485,034)
Remeasurements:			
Return on plan assets (excluding amounts included in interest income or expense)	—	12,568	12,568
Financial assumption movement effect	(57,180)	—	(57,180)
Experience adjustments	(7,378)	—	(7,378)
	(64,558)	12,568	(51,990)
Pension fund contribution	—	25,373	25,373
Paid pension	31,424	(31,424)	—
December 31	**(943,391)**	**431,740**	**(511,651)**

	2021		
	Present value of defined benefit obligations	Fair value of plan assets	Net defined benefit liability
	NT$000	NT$000	NT$000
January 1	(943,391)	431,740	(511,651)
Current services cost	(237)	—	(237)
Interest (expense) income	(4,629)	2,137	(2,492)
	(948,257)	433,877	(514,380)
Remeasurements:			
Return on plan assets (excluding amounts included in interest income or expense)	—	5,613	5,613
Impact on changes in demographic assumptions	(20,022)	—	(20,022)
Financial assumption movement effect	23,757	—	23,757
Experience adjustments	(24,347)	—	(24,347)
	(20,612)	5,613	(14,999)
Pension fund contribution	—	26,091	26,091
Paid pension	9,192	(9,192)	—
December 31	**(959,677)**	**456,389**	**(503,288)**

(c) The Bank of Taiwan was commissioned to manage the fund of the Company's defined benefit pension plan in accordance with the fund's annual investment and utilization plan and the "Regulations for Revenues, Expenditures, Safeguard and Utilization of the Labor Retirement Fund" (Article 6: The scope of utilization for the fund includes deposit in domestic or foreign financial institutions, investment in domestic or foreign listed, over-the-counter, or private placement equity securities, investment in domestic or foreign real estate securitization products, etc.). With regard to the utilization of the fund, its minimum earnings in the annual distributions on the final financial statements shall be no less than the earnings attainable from the amounts accrued from two-year time deposits with the interest rates offered by local banks. If the earnings are less than aforementioned rates, government shall make payment for the deficit after being authorized by the authority. The Company has no right to participate in managing and operating that fund and hence the Company is unable to disclose the classification of the fair value of plan asset in accordance with IAS 19 "Employee Benefits" paragraph 142. The composition of fair value of plan assets as of December 31, 2020 and 2021 is given in the Annual Labor Retirement Fund Utilization Report announced by the government.

(d) The principal actuarial assumptions used were as follows:

	Year ended December 31,	
	2020	2021
Discount rate	0.50%	0.70%
Future salary increase	3.50%	3.50%

Assumptions regarding future mortality are set based on actuarial advice in accordance with published statistics and experience in each territory.

The present value of defined benefit obligations is affected by the change in actuarial assumption. The analysis was as follows:

	Discount rate		Future salary increase	
	Increase 0.25%	Decrease 0.25%	Increase 0.25%	Decrease 0.25%
	NT$000	NT$000	NT$000	NT$000
December 31, 2020				
Effect on present value of defined benefit obligations	(29,114)	30,434	29,471	(28,365)
December 31, 2021				
Effect on present value of defined benefit obligations	(28,574)	29,825	28,941	(27,893)

The sensitivity analysis above is based on a change in an assumption while holding all other assumptions constant. In practice, changes in some of the assumptions may be correlated. The method of sensitivity analysis and the method of calculating net defined benefit liability in the statements of financial position are the same.

The methods and types of assumptions used in preparing the sensitivity analysis remain unchanged from previous period.

(e) Expected contributions to the defined benefit pension plans of the Company for the year ending December 31, 2022 amounts to NT$27,005 thousand.

(f) As of December 31, 2021, the weighted average duration of that retirement plan is 12.2 years. The analysis of timing of the future pension payment was as follows:

	December 31, 2021
	NT$000
Within 1 year	36,762
1-2 years	36,346
2-5 years	126,806
5-10 years	178,998
	378,912

b) Defined Contribution Plans

(a) Effective from July 1, 2005, the Company established a defined contribution pension plan ("New Plan") under the Labor Pension Act, covering all regular employees with ROC nationality. Under the New Plan, the Company contributes monthly an amount based on 6% of the employees' monthly salaries and wages to the employees' individual pension accounts at the Bureau of Labor Insurance. The benefits accrued are paid monthly or in lump sum upon termination of employment. The pension costs under defined contribution pension plans of the Company for the years ended December 31, 2019, 2020 and 2021 were NT$187,502 thousand, NT$184,562 thousand and NT$197,076 thousand, respectively.

(b) According to the defined contribution pension plan stipulated by PRC, ChipMOS Shanghai contributes monthly on amount based on a certain percentage of the local employees' monthly salaries and wages. The contribution percentage were both 16% for the years ended December 31, 2020 and 2021. The pension of each employee is managed by the government and ChipMOS Shanghai has no further obligations except the monthly contribution. The pension costs under defined contribution pension plan of ChipMOS Shanghai for the years ended December 31, 2020 and 2021 were nil and $209 thousand, respectively.

20. Share-based payments

Restricted shares

a) On July 14, 2015, the Company's Board of Directors approved the issuance of restricted shares. The record dates for the shares issuance were July 21, 2015 and May 10, 2016. The relevant information is as follows:

Type of arrangement	Grant date	Share price on grant date (in NT$)	Number of shares (in thousands)	Contract period	Vesting condition
Restricted shares award agreement	July 21, 2015	36.1	15,752	3 years	Meet service and performance conditions
Restricted shares award agreement	May 10, 2016	30.6	1,548	3 years	Meet service and performance conditions

The restricted shares issued by the Company cannot be transferred during the vesting period, but voting right and dividend right are not restricted. Employees are required to return the shares but not required to return the dividends received if they resign during the vesting period. When the employees accomplish the years of service and performance conditions, the received restricted shares will be vested based on the vesting ratio.

b) As of December 31, 2019, there were no outstanding restricted shares.

c) The expenses incurred on share-based payment transactions for the year ended December 31, 2019 was NT$822 thousand.

21. Capital stock

a) As of December 31, 2021, the Company's authorized capital was NT$9,700,000 thousand, consisting of 970,000 thousand ordinary shares, and the paid-in capital was NT$7,272,401 thousand with a par value of NT$10 per share, consisting of 727,240 thousand ordinary shares. All proceeds from shares issued have been collected.

b) As of December 31, 2021, the outstanding ADSs were approximately 4,586,252 units representing 91,725 thousand ordinary shares and each ADS represents 20 ordinary shares of the Company. The major terms and conditions of the ADSs are summarized as follows:

(a) Voting rights:

ADS holders have no right to directly vote in shareholders' meetings with respect to the deposited shares. The depository bank shall vote on behalf of ADS holders or provide voting instruction to the designated person of the Company. The depository bank shall vote in the manner as instructed by ADS holders.

(b) Distribution of dividends:

ADS holders are deemed to have the same rights as holders of ordinary shares with respect to the distribution of dividends.

c) Movements in the number of the Company's ordinary shares outstanding are as follows:

	2019 in thousands	2020 in thousands	2021 in thousands
January 1	727,265	727,240	727,240
Restricted shares – cancelled	(25)	—	—
December 31	**727,240**	**727,240**	**727,240**

d) Treasury stock

On March 7, 2019 and August 6, 2019, the Company's Board of Directors approved the cancellation of treasury stock 25,570 thousand shares amounted to NT$962,503 thousand. As of December 31, 2019, all of the Company's treasury stocks were cancelled.

22. Capital surplus

Pursuant to the ROC Company Act, any capital surplus arising from paid-in capital in excess of par value on issuance of ordinary shares and donations can be used to cover accumulated deficits or to issue new shares or cash to shareholders in proportion to their share ownership, provided that the Company has no accumulated deficits. Furthermore, the ROC Securities and Exchange Act requires that the amount of capital surplus to be capitalized mentioned above may not exceed 10% of the paid-in capital each year. The capital surplus may not be used to cover accumulated deficits unless the legal reserve is insufficient.

	2019			
	Share premium	Employee restricted shares	Others	Total
	NT$000	NT$000	NT$000	NT$000
January 1	5,873,743	382,506	7,304	6,263,553
Share-based payments	—	(412)	—	(412)
Cancellation of treasury stock	(199,501)	(12,853)	—	(212,354)
December 31	**5,674,242**	**369,241**	**7,304**	**6,050,787**

	2020			
	Share premium	Employee restricted shares	Others	Total
	NT$000	NT$000	NT$000	NT$000
January 1	5,674,242	369,241	7,304	6,050,787
Reclassifications	369,241	(369,241)	—	—
December 31	**6,043,483**	**—**	**7,304**	**6,050,787**

	2021			
	Share premium	Employee restricted shares	Others	Total
	NT$000	NT$000	NT$000	NT$000
January 1	6,043,483	—	7,304	6,050,787
Changes in associates accounted for using equity method	—	—	4,834	4,834
December 31	**6,043,483**	**—**	**12,138**	**6,055,621**

23. Retained earnings

a) Under the Company's Articles of Incorporation, the current year's earnings, if any, shall first be used to pay all taxes and offset prior years' operating losses and then 10% of the remaining amount shall be set aside as a legal reserve. The Company may then appropriate or reverse a certain amount as special reserve according to the relevant regulations. After the distribution of earnings, the remaining earnings and prior years' unappropriated retained earnings may be appropriated according to a proposal by the Board of Directors and approved in the shareholders' meeting.

b) The Company's dividend policy is summarized here. As the Company operates in a volatile business environment, the issuance of dividends to be distributed takes into consideration the Company's financial structure, operating results and future expansion plans. The earnings distribution of the Company may be made by way of cash dividends or stock dividends, provided that cash dividends account for at least 10% of the total dividends distributed. The earnings distribution will be proposed by the Board of Directors and approved at the shareholders' meeting.

c) Except for covering accumulated deficits or issuing new shares or cash to shareholders in proportion to their share ownership, the legal reserve may not be used for any other purpose. The use of the legal reserve for the issuance of shares or cash to shareholders in proportion to their share ownership is permitted, provided that the distribution of the reserve is limited to the portion in excess of 25% of the Company's paid-in capital.

d) In accordance with the regulations, the Company must set aside a special reserve from the debit balance on other equity items at the statements of financial position date before distributing earnings. When the debit balance on other equity items is reversed subsequently, the reversed amount may be included in the distributable earnings.

e) The appropriations of 2018, 2019 and 2020 earnings were resolved in the shareholders' meeting held on June 10, 2019, June 9, 2020 and July 12, 2021, respectively. The appropriations and dividends per share are as follows:

	2018		2019		2020	
	Amount	Cash distribution per share	Amount	Cash distribution per share	Amount	Cash distribution per share
	NT$000	NT$	NT$000	NT$	NT$000	NT$
Legal reserve	110,308		258,416		232,611	
Special reserve	—		19,802		(19,802)	
Cash dividend	872,718	1.20	1,309,032	1.80	1,599,928	2.20

24. Other equity interest

	2019			
	Financial statements translation differences of foreign operations	Unrealized gain (loss) on valuation of financial assets at fair value through other comprehensive income	Unearned employee awards	Total
	NT$000	NT$000	NT$000	NT$000
January 1	14,516	106,898	(1,701)	119,713
Currency translation differences				
- The Company	(104,198)	—	—	(104,198)
Employee restricted shares				
- The Company	—	—	1,701	1,701
Evaluation adjustment				
- The Company	—	(52,549)	—	(52,549)
- Associates	—	5,093	—	5,093
Evaluation adjustment related tax				
- The Company	—	7,016	—	7,016
Disposal of investment accounted for using equity method	—	(72)	—	(72)
December 31	**(89,682)**	**66,386**	—	**(23,296)**

	2020		
	Financial statements translation differences of foreign operations	Unrealized gain (loss) on valuation of financial assets at fair value through other comprehensive income	Total
	NT$000	NT$000	NT$000
January 1	(89,682)	66,386	(23,296)
Currency translation differences			
- The Company	28,352	—	28,352
Evaluation adjustment			
- The Company	—	140,199	140,199
- Associates	—	22,925	22,925
Evaluation adjustment related tax			
- The Company	—	(34,794)	(34,794)
December 31	**(61,330)**	**194,716**	**133,386**

	2021		
	Financial statements translation differences of foreign operations	Unrealized gain (loss) on valuation of financial assets at fair value through other comprehensive income	Total
	NT$000	NT$000	NT$000
January 1	(61,330)	194,716	133,386
Currency translation differences			
- The Company	(24,695)	—	(24,695)
Evaluation adjustment			
- The Company	—	122,514	122,514
- Associates	—	21,094	21,094
Evaluation adjustment related tax			
- The Company	—	(30,459)	(30,459)
December 31	**(86,025)**	**307,865**	**221,840**

25. Revenue

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Revenue from contracts with customers	**20,337,881**	**23,011,381**	**27,400,035**

a) The Group is primarily engaged in the assembly and testing services on high-integration and high-precision integrated circuits, and recognized revenue based on the progress towards completion of performance obligation during the service period. Information on revenue disaggregation is provided in Note 44.

b) Contract assets and liabilities

The Group has recognized the following contract assets and liabilities in relation to revenue from contracts with customers:

	January 1, 2020	December 31, 2020	December 31, 2021
	NT$000	NT$000	NT$000
Contract assets	**377,869**	**389,016**	**400,255**
Contract liabilities (Advance payments)	**1,231**	—	—

c) The information relating to loss allowance for contract assets is provided in Note 43 a).

d) Revenue recognized for the years ended December 31, 2020 and 2021, amounted to NT$565 thousand and nil, respectively, was related to carried forward contract liabilities for performance obligations not satisfied in prior year.

e) All of the service contracts are for periods of one year or less. As permitted under IFRS 15, “Revenue from Contracts with Customers”, the transaction price allocated to these unsatisfied contracts is not disclosed.

26. *Other income (expenses), net*

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Gain on disposal of scrapped materials	43,652	51,077	52,254
Royalty income	12,336	2,962	907
Gain on disposal of items purchased on behalf of others	15,080	30,140	21,945
Gain on disposal of property, plant and equipment, net	20,271	48,070	33,935
Insurance compensation income	10,435	—	—
Impairment loss on property, plant and equipment	(9,938)	—	(4,843)
Gains from lease modifications	—	—	891
Others	1,092	3,329	20,498
	92,928	**135,578**	**125,587**

27. *Interest income*

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Bank deposits	59,901	25,547	8,772
Financial assets at amortized cost	4,467	2,206	1,187
Other interest income	—	25	21
	64,368	**27,778**	**9,980**

28. *Other income*

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Rental income	9,249	10,260	17,326
Dividend income	585	3,229	4,690
Grant income	925	7,668	12,480
	10,759	**21,157**	**34,496**

29. *Other gains and losses*

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Foreign exchange losses, net	(154,993)	(355,255)	(89,152)
Reimbursement of ADSs service charge	4,292	2,101	2,284
Gain on valuation of financial assets at fair value through profit or loss	1,317	24,015	15,262
Compensation income	—	—	1,524
Others	970	5,872	4,253
	(148,414)	**(323,267)**	**(65,829)**

30. *Finance costs*

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Interest expense			
Bank loans	171,840	158,720	116,946
Lease liabilities	14,349	13,442	15,245
Less: Amounts capitalized in qualifying assets	(15,114)	(9,762)	(11,193)
	171,075	162,400	120,998
Finance expense	9,187	9,082	10,186
	180,262	**171,482**	**131,184**

31. *Expenses by nature*

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Raw materials and supplies used	3,575,283	4,708,493	5,518,145
Employee benefit expenses	6,075,773	6,010,227	6,757,888
Depreciation expenses	3,731,914	4,175,519	4,634,112
Others	4,590,720	4,686,218	5,053,088
	17,973,690	**19,580,457**	**21,963,233**

32. *Employee benefit expenses*

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Salaries	5,114,790	4,937,591	5,632,219
Directors' remuneration	26,266	28,229	40,164
Labor and health insurance	422,106	396,796	424,901
Pension	194,173	189,489	200,014
Share-based payments	822	—	—
Other personnel expenses	317,616	458,122	460,590
	6,075,773	**6,010,227**	**6,757,888**

a) In accordance with the Company's Articles of Incorporation, employees' compensation is based on the current year's earnings, which should first be used to cover accumulated deficits, if any, and then 10% of the remaining balance distributed as employees' compensation, including distributions to certain qualifying employees in affiliate companies, and no more than 0.5% as directors' remuneration. Subject to the Board of Directors' approval, employees' compensation may be made by way of cash or share issuance. Distribution of employees' compensation and directors' remuneration shall be presented and reported in the subsequent shareholders' meeting.

b) Based on profit distributable as of the end of reporting period, for the years ended December 31, 2019, 2020 and 2021, the employees' compensation were accrued at NT$338,356 thousand, NT$332,080 thousand and NT$673,387 thousand, respectively; the directors' remuneration were accrued at NT$16,918 thousand, NT$16,604 thousand and NT$25,690 thousand, respectively.

c) For the year of 2020, employees' compensation and directors' remuneration recognized were consistent with the amounts resolved in the Board of Directors' meeting.

33. Income tax expense

a) Income tax expense

(a) Components of income tax expense:

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Current income tax:			
Current income tax on profits for the period	408,788	636,876	1,109,752
Income tax on unappropriated retained earnings	74,540	105,665	227,467
Prior year income tax overestimation	(5,016)	(133,923)	(184,284)
Total current income tax	478,312	608,618	1,152,935
Deferred income tax:			
Relating to origination and reversal of temporary differences	35,367	(14,237)	(54,617)
Income tax expense	**513,679**	**594,381**	**1,098,318**

(b) The income tax (charge)/credit relating to components of other comprehensive income are as follows:

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Unrealized (loss) gain on valuation of financial assets at fair value through other comprehensive income	(7,016)	34,794	30,459
Remeasurement of defined benefit obligations	4,183	(10,398)	(2,999)
	(2,833)	**24,396**	**27,460**

b) Reconciliation of income tax expense and the accounting profit:

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Tax calculated based on profit before tax and statutory tax rate	606,917	595,258	1,207,605
Effects from adjustments based on regulation	(162,924)	26,974	(152,618)
Temporary difference not recognized as deferred tax assets	(608)	(4)	—
Prior year income tax overestimation	(5,016)	(133,923)	(184,284)
Income tax on unappropriated retained earnings	74,540	105,665	227,467
Effect of different tax rates in countries in which the Group operates	770	411	148
Income tax expense	**513,679**	**594,381**	**1,098,318**

c) The amounts of deferred tax assets or liabilities resulting from temporary differences and investment tax credits are as follows:

	2019			
	January 1	Recognized in profit or loss	Recognized in other comprehensive income	December 31
	NT$000	NT$000	NT$000	NT$000
Deferred tax assets				
Loss on inventories	7,232	5,468	—	12,700
Property, plant and equipment	64,183	(25,515)	—	38,668
Provisions	12,396	(6,796)	—	5,600
Deferred revenue	34,156	(6,506)	—	27,650
Net defined benefit liability	100,743	(3,948)	(4,183)	92,612
Unrealized exchange losses	3,575	13,721	—	17,296
Investment tax credit	4,420	(4,420)	—	—
Others	11	15	—	26
Total	**226,716**	**(27,981)**	**(4,183)**	**194,552**
Deferred tax liabilities				
Property, plant and equipment	(281,594)	(7,386)	—	(288,980)
Financial assets at fair value through other comprehensive income	(27,165)	—	7,016	(20,149)
Total	**(308,759)**	**(7,386)**	**7,016**	**(309,129)**
Information presented on statements of financial position				
Deferred tax assets	**226,716**			**194,552**
Deferred tax liabilities	**(308,759)**			**(309,129)**

	2020			
	January 1	Recognized in profit or loss	Recognized in other comprehensive income	December 31
	NT$000	NT$000	NT$000	NT$000
Deferred tax assets				
Loss on inventories	12,700	3,263	—	15,963
Property, plant and equipment	38,668	(2,267)	—	36,401
Provisions	5,600	(2,922)	—	2,678
Deferred revenue	27,650	(6,506)	—	21,144
Net defined benefit liability	92,612	(4,089)	10,398	98,921
Unrealized exchange losses	17,296	(7,381)	—	9,915
Others	26	643	—	669
Total	**194,552**	**(19,259)**	**10,398**	**185,691**
Deferred tax liabilities				
Property, plant and equipment	(288,980)	33,496	—	(255,484)
Financial assets at fair value through other comprehensive income	(20,149)	—	(34,794)	(54,943)
Total	**(309,129)**	**33,496**	**(34,794)**	**(310,427)**
Information presented on statements of financial position				
Deferred tax assets	**194,552**			**185,691**
Deferred tax liabilities	**(309,129)**			**(310,427)**

	2021			
	January 1	Recognized in profit or loss	Recognized in other comprehensive income	December 31
	NT$000	NT$000	NT$000	NT$000
Deferred tax assets				
Loss on inventories	15,963	8,354	—	24,317
Property, plant and equipment	36,401	235	—	36,636
Provisions	2,678	171	—	2,849
Deferred revenue	21,144	(6,506)	—	14,638
Net defined benefit liability	98,921	(4,672)	2,999	97,248
Unrealized exchange losses	9,915	(7,754)	—	2,161
Others	669	2,080	—	2,749
Total	**185,691**	**(8,092)**	**2,999**	**180,598**
Deferred tax liabilities				
Property, plant and equipment	(255,484)	62,797	—	(192,687)
Financial assets at fair value through other comprehensive income	(54,943)	—	(30,459)	(85,402)
Others	—	(88)	—	(88)
Total	**(310,427)**	**62,709**	**(30,459)**	**(278,177)**
Information presented on statements of financial position				
Deferred tax assets	**185,691**			**180,598**
Deferred tax liabilities	**(310,427)**			**(278,177)**

d) The amounts of deductible temporary difference that are not recognized as deferred tax assets are as follows:

	December 31, 2020	December 31, 2021
	NT$000	NT$000
Deductible temporary differences	**946,236**	**371,133**

e) The Company has not recognized taxable temporary differences associated with investments as deferred tax liabilities. As of December 31, 2020 and 2021, the amounts of temporary differences not recognized as deferred tax liability were NT$45,005 thousand and NT$609,709 thousand, respectively.

f) The Company's income tax returns through 2019 have been assessed and approved by the Tax Authority.

g) On October 31, 2016, the Company merged with its former parent company, ChipMOS TECHNOLOGIES (Bermuda) LTD. And as a result, the Company recognized its own shares originally held by former parent company as treasury stock. Subsequently, the Company deducted unappropriated retained earnings by NT$5,052,343 thousand to reflect the loss due from the cancellation of treasury stock. In January 2017, the Company has filed an application to the National Taxation Bureau of the Northern Area, Ministry of Finance to apply the accumulated deficit amount, as a deduction in the calculation of years 2015 and 2016 additional 10% tax on unappropriated retained earnings. In April and June 2020, the Company received the Notice for Assessment of Tax for the years 2015 and 2016 from the National Taxation Bureau of the Northern Area, Ministry of Finance, and the tax refund amounted to NT$138,941 thousand was received in year 2020.

34. Earnings per share

	Year ended December 31, 2019		
	Amount after income tax	Weighted average number of ordinary shares outstanding	Earnings per share
Basic earnings per share	NT$000	In thousands	NT$
Profit attributable to equity holders of the Company	**2,508,574**	**727,111**	**3.45**
Diluted earnings per share			
Assumed conversion of all dilutive potential ordinary shares:			
Employees' compensation		9,879	
Restricted shares		126	
Profit attributable to equity holders of the Company	**2,508,574**	**737,116**	**3.40**

	Year ended December 31, 2020		
	Amount after income tax	Weighted average number of ordinary shares outstanding	Earnings per share
Basic earnings per share	NT$000	In thousands	NT$
Profit attributable to equity holders of the Company	**2,378,978**	**727,240**	**3.27**
Diluted earnings per share			
Assumed conversion of all dilutive potential ordinary shares:			
Employees' compensation		9,668	
Profit attributable to equity holders of the Company	**2,378,978**	**736,908**	**3.23**

	Year ended December 31, 2021		
	Amount after income tax	Weighted average number of ordinary shares outstanding	Earnings per share
Basic earnings per share	NT$000	In thousands	NT$
Profit attributable to equity holders of the Company	**4,937,267**	**727,240**	**6.79**
Diluted earnings per share			
Assumed conversion of all dilutive potential ordinary shares:			
Employees' compensation		15,618	
Profit attributable to equity holders of the Company	**4,937,267**	**742,858**	**6.65**

35. *Supplementary cash flow information*

Partial cash paid for investing activities

Property, plant and equipment

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Purchase of property, plant and equipment	4,896,656	4,133,615	6,552,702
Add: Beginning balance of payable to contractors and equipment suppliers	1,516,735	972,770	1,145,359
Less: Ending balance of payable to contractors and equipment suppliers	(972,770)	(1,145,359)	(1,816,555)
Cash paid during the year	**5,440,621**	**3,961,026**	**5,881,506**

36. *Changes in liabilities from financing activities*

	2019			
	Long-term bank loans (including current portion)	Guarantee deposits	Lease liabilities	Total liabilities from financing activities
	NT$000	NT$000	NT$000	NT$000
January 1	9,789,518	1,092	—	9,790,610
Effects on initial application of IFRS 16	—	—	884,275	884,275
Adjusted balance at January 1	9,789,518	1,092	884,275	10,674,885
Changes in cash flow from financing activities	(756,450)	3	(48,161)	(804,608)
Adjustment to right-of-use assets	—	—	(148,512)	(148,512)
Reclassification to payable on equipment from lease liabilities	—	—	(9,000)	(9,000)
Amortization of loan fees	8,577	—	—	8,577
Amortization of interest expense	—	—	14,349	14,349
December 31	**9,041,645**	**1,095**	**692,951**	**9,735,691**

	2020			
	Long-term bank loans (including current portion)	Guarantee deposits	Lease liabilities	Total liabilities from financing activities
	NT$000	NT$000	NT$000	NT$000
January 1	9,041,645	1,095	692,951	9,735,691
Changes in cash flow from financing activities	(1,326,857)	575	(84,928)	(1,411,210)
Adjustment to right-of-use assets	—	—	249,030	249,030
Reclassification	—	20,000	—	20,000
Amortization of loan fees	7,581	—	—	7,581
Amortization of interest expense	11,196	—	13,442	24,638
December 31	**7,733,565**	**21,670**	**870,495**	**8,625,730**

	2021				
	Short-term bank loans	Long-term bank loans (including current portion)	Guarantee deposits	Lease liabilities	Total liabilities from financing activities
	NT$000	NT$000	NT$000	NT$000	NT$000
January 1	—	7,733,565	21,670	870,495	8,625,730
Changes in cash flow from financing activities	731,751	1,652,332	(45)	(289,668)	2,094,370
Adjustment to right-of-use assets	—	—	—	255,179	255,179
Amortization of loan fees	—	7,646	—	—	7,646
Amortization of interest expense	—	19,822	—	15,245	35,067
December 31	**731,751**	**9,413,365**	**21,625**	**851,251**	**11,017,992**

37. Related party transactions

a) Parent and ultimate controlling party

The Company has neither a parent company nor an ultimate controlling party. The transactions between the Company and its subsidiaries were eliminated in the accompanying consolidated financial statements and were not disclosed herein. The transactions between the Group and other related parties are as follows.

b) Names of related parties and relationship

Name	Relationship
Unimos Shanghai	Associate
JMC	Associate

c) Significant related party transactions

None.

d) Key management personnel compensation

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Salaries and other short-term employee benefits	178,713	186,854	243,405
Post-employment compensation	2,049	4,258	2,156
	180,762	**191,112**	**245,561**

38. Pledged assets

Assets	Purpose	December 31, 2020 Carrying amount NT$000	December 31, 2021 Carrying amount NT$000
Non-current financial assets at amortized cost	Lease and bank loan	48,319	37,539
Property, plant and equipment, net			
- Land	Bank loan	452,738	452,738
- Buildings	Bank loan	4,092,287	4,343,556
- Machinery and equipment	Bank loan	6,912,544	8,245,561
		11,505,888	**13,079,394**

39. Significant contingent liabilities and unrecognized contract commitments

a) A letter of guarantee was issued by the financial institutions to the Customs Administration of the Ministry of Finance for making payment of customs-duty deposits when importing. As of December 31, 2020 and 2021, the amounts guaranteed by the financial institutions were NT$99,000 thousand and NT$137,700 thousand, respectively.

b) Capital expenditures that are contracted for, but not provided for are as follows:

	December 31, 2020 NT$000	December 31, 2021 NT$000
Property, plant and equipment, net	**2,331,041**	**2,629,129**

40. Significant disaster loss

None.

41. Significant events after the reporting period

None.

42. Capital management

The Group's objectives when managing capital are to safeguard the Group's ability to continue as a going concern in order to provide returns for shareholders and to maintain an optimal capital structure to reduce the cost of capital. In order to maintain or adjust the capital structure, the Group may adjust the amount of dividends paid to shareholders, return capital to shareholders, issue new shares or sell assets to reduce debt. The Group monitors capital on the basis of the liabilities to assets ratio. Total capital is shown as "Equity" in the consolidated statements of financial position, which is also equal to total assets minus total liabilities.

The liabilities to assets ratio at December 31, 2020 and 2021 were as follows:

	December 31, 2020 NT$000	December 31, 2021 NT$000
Total liabilities	14,364,975	18,380,369
Total assets	35,080,814	42,522,584
Liabilities to assets ratio	**40.95%**	**43.22%**

43. Financial risk management and fair values of financial instruments

a) Financial instruments

(a) Financial instruments by category

	December 31, 2020 NT$000	December 31, 2021 NT$000
Financial assets		
Financial assets at fair value through profit or loss		
Financial assets mandatorily measured at fair value through profit or loss	63,488	359,960
Financial assets at fair value through other comprehensive income		
Designation of equity instruments	262,007	384,521
Financial assets at amortized cost		
Cash and cash equivalents	4,113,651	5,906,176
Financial assets at amortized cost	254,801	66,778
Notes receivable	599	1,035
Accounts receivable	5,364,156	6,344,246
Other receivables	51,436	86,879
Refundable deposits	21,186	21,278
	10,131,324	**13,170,873**
Financial liabilities		
Financial liabilities at amortized cost		
Short-term bank loans	—	731,751
Notes payable	2,899	23
Accounts payable	966,821	1,012,391
Other payables	3,249,403	4,378,439
Long-term bank loans (including current portion)	7,733,565	9,413,365
Lease liabilities (including current portion)	870,495	851,251
Guarantee deposits	21,670	21,625
	12,844,853	**16,408,845**

(b) Risk management policies

i) The Group's risk management objective is to manage the market risk, credit risk and liquidity risk related to its operating activities. The Group identifies, measures, and manages such risks by its policies and preferences.

ii) The Group has established appropriate policies, procedures and internal controls for financial risk management. Before entering into significant financial transactions, a due approval process must be carried out by the Board of Directors based on related protocols and internal control procedures. The Group complies with its financial risk management policies at all times.

iii) In order to minimize and manage financial risks, the Group's overall risk management program focuses on analyzing, identifying, and evaluating financial risk factors that may potentially have adverse effects on the Group's financial position, and provide feasible solutions to avoid those factors.

(c) Significant financial risks and degrees of financial risks

i) Market risk

The Group's market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risks comprise foreign currency risk, interest rate risk, and other price risks.

In practice, the risk variable rarely changes individually, and the change of each risk variable is usually correlative. The following sensitivity analysis did not consider the interaction of each risk variable.

Foreign exchange risk

1. The Group's exposure to the risk of changes in foreign exchange rates relates primarily to the Group's operating activities (when revenue or expense is denominated in a different currency from the Company's and its subsidiaries' functional currency) and the Group's net investments in foreign operations.
2. The Group applies natural hedges by using accounts receivable and accounts payable denominated in the same currency. However, this natural hedge does not concur with the requirement for hedge accounting. Furthermore, as net investments in foreign operations are for strategic purposes, they are not hedged by the Group.
3. The Group's foreign currency exposure gives rise to market risks associated with exchange rate movements against the NT dollar for cash and cash equivalents, accounts receivable, other receivables, bank loans, accounts payable and other payables.
4. The Group's businesses involve some non-functional currency operations. The information on assets and liabilities denominated in foreign currencies whose values would be materially affected by the exchange rate fluctuations is as follows:

	December 31, 2020		
	Foreign currency	Exchange rate	Carrying amount (NT$000)
(Foreign currency: functional currency)			
Financial assets			
Monetary items			
US$000	175,840	28.4800	5,007,923
JPY000	137,635	0.2763	38,029
RMB000	6,838	4.3770	29,930
Non-monetary items			
JPY000	948,270	0.2763	262,007
RMB000	690,178	4.3770	3,020,908
Financial liabilities			
Monetary items			
US$000	26,410	28.4800	752,157
JPY000	1,538,241	0.2763	425,016

	December 31, 2021		
	Foreign currency	Exchange rate	Carrying amount (NT$000)
(Foreign currency: functional currency)			
Financial assets			
Monetary items			
US$000	188,143	27.6800	5,207,798
JPY000	141,523	0.2405	34,036
RMB000	4,944	4.3440	21,477
Non-monetary items			
JPY000	1,598,839	0.2405	384,521
RMB000	827,811	4.3440	3,596,012
Financial liabilities			
Monetary items			
US$000	53,042	27.6800	1,468,203
JPY000	1,089,668	0.2405	262,005

5. The total exchange losses, including realized and unrealized losses arising from significant foreign exchange variations on monetary items held by the Group for the years ended December 31, 2019, 2020 and 2021, amounted to NT$154,993 thousand, NT$355,255 thousand and NT$89,152 thousand, respectively.

6. Analysis of foreign currency market risk arising from significant foreign exchange variations:

	Year ended December 31, 2019		
	Sensitivity analysis		
	Change in exchange rate	Effect on profit (loss) (NT$000)	Effect on other comprehensive income (NT$000)
Financial assets			
Monetary items			
US$000	5%	282,365	—
JPY000	5%	3,682	—
RMB000	5%	1,334	—
Financial liabilities			
Monetary items			
US$000	5%	11,793	—
JPY000	5%	14,261	—

	Year ended December 31, 2020		
	Sensitivity analysis		
	Change in exchange rate	Effect on profit (loss) (NT$000)	Effect on other comprehensive income (NT$000)
Financial assets			
Monetary items			
US$000	5%	250,396	—
JPY000	5%	1,901	—
RMB000	5%	1,497	—
Financial liabilities			
Monetary items			
US$000	5%	37,608	—
JPY000	5%	21,251	—

	Year ended December 31, 2021		
	Sensitivity analysis		
	Change in exchange rate	Effect on profit (loss) (NT$000)	Effect on other comprehensive income (NT$000)
Financial assets			
Monetary items			
US$000	5%	260,390	—
JPY000	5%	1,702	—
RMB000	5%	1,074	—
Financial liabilities			
Monetary items			
US$000	5%	73,410	—
JPY000	5%	13,103	—

Price risk

1. The Group's financial instruments, which are exposed to price risk, are the financial assets at fair value through profit or loss and financial assets at fair value through other comprehensive income. To manage its price risk arising from investments in financial instruments, the Group diversifies its portfolio. Diversification of the portfolio is in accordance with the limits set by the Group.

2. The Group invests in beneficiary certificates and listed stocks issued by the domestic companies. The prices of equity securities would change due to change of the future value of investee companies. For the years ended December 31, 2019, 2020 and 2021, it is estimated that the prices of equity securities increase or decrease by 1%, with all other variables held constant, would increase or decrease the Group's profit before income tax by nil, NT$531 thousand and NT$3,600 thousand, respectively.

3. The Group's investments in financial instruments comprise foreign unlisted stocks and partnership. The prices of financial instruments would change due to different valuation models and assumptions used. Analysis related to the effect on profit or other comprehensive income if these assumptions change is provided in Note 43 b) (g).

Interest rate risk on cash flow and fair value

1. Interest rate risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. The Group's exposure to the risk of changes in market interest rates relates primarily to the Group's bank loans with floating interest rates. The Group manages its interest rate risk by having a balanced portfolio of fixed and variable rate bank loans. The Group reassesses the hedge management periodically to make sure it complies with the cost effectiveness.
2. The sensitivity analysis depends on the exposure of interest rate risk at the end of the reporting period.
3. Analysis of debt with floating interest rates is based on the assumption that the outstanding debt at the end of the reporting period is outstanding throughout the period. The degree of variation the Group used to report to internal management is increase or decrease of 1% in interest rates which is assessed as the reasonable degree of variation by the management.
4. For the years ended December 31, 2019, 2020 and 2021, it is estimated that a general increase or decrease of 1% in interest rates, with all other variables held constant, would decrease or increase the Group's profit before income tax approximately by NT$90,660 thousand, NT$78,150 thousand and NT$102,489 thousand, respectively, mainly due to the Group's floating rate on bank loans.

ii) Credit risk

1. Credit risk is the risk that a counterparty will not meet its obligations under a financial instrument or customer contract, leading to a financial loss, mainly resulted from its operating activities (primarily notes and accounts receivable) and from its financing activities (primarily deposits with banks and financial instruments). The Group is exposed to credit risk arising from the carrying amount of the financial assets recognized in the consolidated statements of financial position.
2. Each business unit performs ongoing credit evaluations of its debtors' financial conditions according to the Group's established policies, procedures and controls relating to customer credit risk management. The Group maintains an account for loss allowance based upon the available facts and circumstances, history of collection and write-off experiences of all trade and other receivables which consequently minimize the Group's exposure to bad debts.
3. Credit risk from balances with banks and financial institutions is managed by the Group's finance unit in accordance with the Group's policies. Transaction counterparty of the Group is determined through its internal controls policy. For banks and financial institutions, only parties rated above BBB+ by Taiwan Ratings are accepted. The probability of counterparty default is remote, so there is no significant credit risk.
4. The Group adopts the assumptions under IFRS 9 "Financial Instruments" and the default is deemed to have occurred when the contract payments are past due over 90 days.
5. The Group categorized contract assets, accounts receivable and other receivables by characteristics of credit risk and applied the simplified approach using loss rate methodology to estimate expected credit loss.

6. The Group referred to the forecastability of business monitoring indicators published by the ROC National Development Council to adjust the loss rate which is based on historical and current information when assessing the future default possibility of contract assets, accounts receivable and other receivables. As of December 31, 2020 and 2021 the loss rate methodologies are as follows:

	December 31, 2020		
	Contract assets NT$000	Accounts receivable (including related parties) NT$000	Other receivables (including related parties) NT$000
Expected loss rate	0.030%	0.030%	0.030%
Total carrying amount	389,133	5,365,776	51,446
Loss allowance	(117)	(1,620)	(10)

	December 31, 2021		
	Contract assets NT$000	Accounts receivable (including related parties) NT$000	Other receivables (including related parties) NT$000
Expected loss rate	0.030%	0.030%	0.030%
Total carrying amount	400,375	6,346,156	86,895
Loss allowance	(120)	(1,910)	(16)

7. Under the simplified approach, movements in relation to loss allowance for contract assets, accounts receivable, and other receivables are as follows:

	2019		
	Contract assets NT$000	Accounts receivable (including related parties) NT$000	Other receivables (including related parties) NT$000
January 1	(135)	(2,141)	(13)
Provision for impairment loss	—	—	(5)
Reversal of impairment loss	21	790	—
December 31	**(114)**	**(1,351)**	**(18)**

	2020		
	Contract assets NT$000	Accounts receivable (including related parties) NT$000	Other receivables (including related parties) NT$000
January 1	(114)	(1,351)	(18)
Provision for impairment loss	(3)	(269)	—
Reversal of impairment loss	—	—	8
December 31	**(117)**	**(1,620)**	**(10)**

	2021		
	Contract assets	Accounts receivable (including related parties)	Other receivables (including related parties)
	NT$000	NT$000	NT$000
January 1	(117)	(1,620)	(10)
Provision for impairment loss	(3)	(290)	(6)
December 31	**(120)**	**(1,910)**	**(16)**

8. The Group's recorded financial assets at amortized cost include time deposits with contract period over three months and restricted bank deposits. Because of the low credit risk, expected credit losses for the period are measured through a loss allowance at an amount equal to the 12-month expected credit losses. There is no significant provision for the losses.

iii) Liquidity risk

1. The Group manages and maintains adequate cash and cash equivalents to finance the Group's operations, and minimize the impact from cash flow fluctuations. The Group also monitors its debt financing plans to ensure it is in compliance with the financial covenants required under its loan agreements.

2. The primary source of liquidity for the Group is from bank loans. See Notes 15 and 18 for details of the unused credit lines of the Group as of December 31, 2020 and 2021.

3. The contractual undiscounted cash flows of notes payable, accounts payable and other payables due within one year and is equivalent to its carrying amount. Except for the aforementioned, the table below summarizes the maturity profile of the Group's non-derivative financial liabilities based on the earliest repayment dates and contractual undiscounted payments, including principal and interest. The Group does not consider the probability of early repayments requested by the banks.

	December 31, 2020				
	Within 1 year	1 to 3 years	3 to 5 years	Over 5 years	Total
	NT$000	NT$000	NT$000	NT$000	NT$000
Non-derivative financial liabilities					
Long-term bank loans	846,401	3,558,597	2,198,717	1,487,808	8,091,523
Lease liabilities	145,594	160,146	54,689	718,752	1,079,181
Guarantee deposits	—	—	—	21,670	21,670
	991,995	**3,718,743**	**2,253,406**	**2,228,230**	**9,192,374**

	December 31, 2021				
	Within 1 year	1 to 3 years	3 to 5 years	Over 5 years	Total
	NT$000	NT$000	NT$000	NT$000	NT$000
Non-derivative financial liabilities					
Short-term bank loans	733,523	—	—	—	733,523
Long-term bank loans	114,953	2,817,662	4,568,521	2,265,350	9,766,486
Lease liabilities	182,186	119,748	54,113	691,764	1,047,811
Guarantee deposits	—	—	—	21,625	21,625
	1,030,662	**2,937,410**	**4,622,634**	**2,978,739**	**11,569,445**

The difference between the floating interest rates and estimated interest rates will affect the non-derivative financial liabilities stated above.

b) Fair value information

(a) The different levels of inputs used in valuation techniques to measure fair value of financial and non-financial instruments are defined as follows:

Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities that can be accessed at the measurement date. An active market is a market in which trading for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2: Inputs other than quoted prices from Level 1 that are observable information for the asset or liability, either directly or indirectly.

Level 3: Unobservable inputs for the asset or liability. The fair value of the Group's investment in equity investment without active market is included in Level 3.

(b) The carrying amounts of cash and cash equivalents, financial assets at amortized cost, contract assets, notes receivable, accounts receivable, other receivables, refundable deposits, bank loans, notes payable, accounts payable, other payables, lease liabilities and guarantee deposits are approximate to their fair values.

(c) The related information of financial and non-financial instruments measured at fair value by level based on the nature, characteristics and risks of the assets and liabilities are as follows:

i) The related information of natures of the assets and liabilities are as follows:

	December 31, 2020			
	Level 1	Level 2	Level 3	Total
	NT$000	NT$000	NT$000	NT$000
Assets				
Recurring fair value measurements				
Financial assets at fair value through profit or loss				
- Listed stocks	53,120	—	—	53,120
- Foreign partnership interests	—	—	10,368	10,368
Financial assets at fair value through other comprehensive income				
- Foreign unlisted stocks	—	—	262,007	262,007
	53,120	**—**	**272,375**	**325,495**

	December 31, 2021			
	Level 1 NT$000	Level 2 NT$000	Level 3 NT$000	Total NT$000
Assets				
Recurring fair value measurements				
Financial assets at fair value through profit or loss				
- Listed stocks	359,960	—	—	359,960
Financial assets at fair value through other comprehensive income				
- Foreign unlisted stocks	—	—	384,521	384,521
	359,960	**—**	**384,521**	**744,481**

ii) The methods and assumptions the Group used to measure fair value are as follows:

1. The fair value of the Group's listed stocks is measured by using the market quoted prices, which is categorized within Level 1 fair value.

2. Except for listed stocks with active markets, the fair value of the Group's other financial instruments is measured by using valuation techniques or by reference to counterparty quotes. The fair value of financial instruments measured by using valuation techniques can be referred to current fair value of instruments with similar terms and characteristics in substance, discounted cash flow method or other valuation methods, including calculated by applying model using market information available at the consolidated statement of financial position date.

3. The Group's financial instruments issued by foreign partnerships are measured by using the discounted cash flow method, which derives present value estimates by discounting expected future operating effectiveness and free cash flows projections.

4. The Group's financial instruments issued by foreign companies are measured by the comparable company valuation (EV/EBITDA ratio and P/B ratio).

5. The Group takes into account adjustments for credit risks to measure the fair value of financial and non-financial instruments to reflect credit risk of the counterparty and the Group's credit quality.

(d) The following table shows the movements of Level 3 for the years ended December 31, 2020 and 2021:

	December 31, 2020		
	Debt instruments NT$000	Equity instruments NT$000	Total NT$000
January 1	11,038	121,808	132,846
Gains or losses recognized in profit or loss			
Recorded as non-operating expenses	(670)	—	(670)
Gains or losses recognized in other comprehensive income			
Recorded as unrealized gains on valuation of financial assets at fair value through other comprehensive income	—	140,199	140,199
December 31	**10,368**	**262,007**	**272,375**

	December 31, 2021		
	Debt instruments	Equity instruments	Total
	NT$000	NT$000	NT$000
January 1	10,368	262,007	272,375
Gains or losses recognized in profit or loss			
Recorded as non-operating expenses	(941)	—	(941)
Gains or losses recognized in other comprehensive income			
Recorded as unrealized gains on valuation of financial assets at fair value through other comprehensive income	—	122,514	122,514
Sold in the period	(9,427)	—	(9,427)
December 31	—	**384,521**	**384,521**

(e) The Group performs the fair value measurements being categorized within Level 3 with assistance from specialist. Such assessment is to ensure the valuation results are reasonable by applying independent information to make results close to current market conditions, confirming the resource of information is independent, reliable and in line with other resources and represented as the exercisable price, and frequently calibrating valuation model, updating inputs used to the valuation model and making any other necessary adjustments to the fair value.

(f) The following is the qualitative information and sensitivity analysis of changes in significant unobservable inputs under valuation model used in Level 3 fair value measurement:

	Fair value as of December 31, 2020	Valuation technique	Significant unobservable input	Range (weighted average method)	Relationship of inputs to fair value
	NT$000				
Non-derivative debt instrument:					
Foreign partnership interests	10,368	Discounted cash flow	Discount rate	0.30%	The lower the discount rate, the higher the fair value
Non-derivative equity instrument:					
Foreign unlisted stocks	262,007	Comparable companies	Price to book ratio multiple	1.97	The higher the multiple, the higher the fair value
			Enterprise value to EBITDA multiple	12.00	The higher the multiple, the higher the fair value
			Discount for lack of marketability	15.80%	The higher the discount for lack of marketability, the lower the fair value

	Fair value as of December 31, 2021 NT$000	Valuation technique	Significant unobservable input	Range (weighted average method)	Relationship of inputs to fair value
Non-derivative equity instrument:					
Foreign unlisted stocks	384,521	Comparable companies	Price to book ratio multiple	3.46	The higher the multiple, the higher the fair value
			Enterprise value to EBITDA multiple	9.43	The higher the multiple, the higher the fair value
			Discount for lack of marketability	15.80%	The higher the discount for lack of marketability, the lower the fair value

(g) The Group has carefully assessed the valuation models and assumptions used to measure fair value. However, use of different valuation models or assumptions may result in different measurement. The following is the effect of profit or loss or of other comprehensive income from financial assets categorized within Level 3 if the inputs used to valuation models have changed:

			December 31, 2020			
			Recognized in profit or loss		Recognized in other comprehensive income	
	Input	Change	Favorable change	Unfavorable change	Favorable change	Unfavorable change
			NT$000	NT$000	NT$000	NT$000
Financial assets:						
Foreign partnership interests	Discount rate	Note	—	—	—	—
Foreign unlisted stocks	Price to book ratio multiple	± 1%	—	—	30	30
	Enterprise value to EBITDA multiple	± 1%	—	—	2,153	2,153
	Discount for lack of marketability	± 1%	—	—	3,142	3,084
			—	—	**5,325**	**5,267**

Note: Based on the Group's assessment, change in input would not have significant impact on profit or loss or other comprehensive income.

			December 31, 2021			
			Recognized in profit or loss		Recognized in other comprehensive income	
	Input	Change	Favorable change	Unfavorable change	Favorable change	Unfavorable change
			NT$000	NT$000	NT$000	NT$000
Financial assets:						
Foreign unlisted stocks	Price to book ratio multiple	±1%	—	—	46	46
	Enterprise value to EBITDA multiple	±1%	—	—	3,443	3,443
	Discount for lack of marketability	±1%	—	—	4,585	4,585
			—	—	**8,074**	**8,074**

c) Other matter

In response to the COVID-19 pandemic, besides complying with the reporting guidelines and prevention management measures issued by the Taiwan Centers for Disease Control, the Group has also drawn up an epidemic preparedness and contingency plan and set up a response team, taking appropriate actions on pandemic protections as well as establishing epidemic prevention and response mechanism based on the pandemic situation to ensure employees' health and the normal operation of production lines. Meanwhile, the Group maintains sufficient stock of main raw materials required for production. To reduce the risk of raw materials disruption, the Group takes the proper preventive plan based on the pandemic situation in the suppliers' region, including increase safety stock or establish a second supply source. In summary, the Group has proactively adopted corresponding measures and continued to manage relevant matters. Based on the Group's assessment, the COVID-19 pandemic has no significant impact on the Group.

44. Segment Information

a) General information

The Group engages mainly in the assembly and testing of semiconductors, memory modules and general investments. In accordance with IFRS 8 "Operating Segments", the Group's segments include Testing, Assembly, Testing and Assembly for LCD, OLED and other Display Panel Driver Semiconductors ("LCDD"), Bumping and others as the five reportable segments.

b) Measurement of segment information

The Group's reportable segments are strategic business units which provide different products and services. The accounting policies adopted by the operating segments are the same as the accounting policies described in Note 4.

c) Information about segment profit or loss

The segment information provided to the chief operating decision maker for the reportable segments is as follows:

	Year ended December 31, 2019						
	Testing	Assembly	LCDD	Bumping	Others	Elimination	Total
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
Revenue							
External customers	4,257,800	5,148,877	6,922,205	4,008,999	—	—	20,337,881
Inter-segment	—	—	—	—	32,808	(32,808)	—
Total revenue	**4,257,800**	**5,148,877**	**6,922,205**	**4,008,999**	**32,808**	**(32,808)**	**20,337,881**
Operating profit (loss)	**709,142**	**(227,096)**	**1,740,720**	**232,404**	**1,931**	**18**	**2,457,119**
Depreciation expenses	**(802,740)**	**(521,311)**	**(1,796,951)**	**(604,553)**	**(6,359)**	**—**	**(3,731,914)**
Share of profit (loss) of associates	**—**	**—**	**—**	**—**	**(370,351)**	**215,425**	**(154,926)**
Interest income	**—**	**—**	**—**	**—**	**64,368**	**—**	**64,368**
Interest expense	**—**	**—**	**—**	**—**	**(171,075)**	**—**	**(171,075)**
Purchase of property, plant and equipment	**764,105**	**548,063**	**3,077,806**	**506,635**	**47**	**—**	**4,896,656**

	Year ended December 31, 2020						
	Testing	Assembly	LCDD	Bumping	Others	Elimination	Total
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
Revenue							
External customers	5,002,730	6,001,964	7,023,003	4,983,684	—	—	23,011,381
Inter-segment	—	—	—	—	39,646	(39,646)	—
Total revenue	**5,002,730**	**6,001,964**	**7,023,003**	**4,983,684**	**39,646**	**(39,646)**	**23,011,381**
Operating profit (loss)	**1,333,682**	**67,730**	**1,687,986**	**487,323**	**(10,230)**	**11**	**3,566,502**
Depreciation expenses	**(853,829)**	**(523,341)**	**(2,213,504)**	**(578,890)**	**(5,955)**	**—**	**(4,175,519)**
Share of profit (loss) of associates	**—**	**—**	**—**	**—**	**(320,578)**	**173,249**	**(147,329)**
Interest income	**—**	**—**	**—**	**—**	**27,778**	**—**	**27,778**
Interest expense	**—**	**—**	**—**	**—**	**(162,400)**	**—**	**(162,400)**
Purchase of property, plant and equipment	**887,204**	**803,693**	**2,143,401**	**298,834**	**483**	**—**	**4,133,615**

	Year ended December 31, 2021						
	Testing	Assembly	LCDD	Bumping	Others	Elimination	Total
	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000	NT$000
Revenue							
External customers	5,899,600	7,963,714	8,211,099	5,325,622	—	—	27,400,035
Inter-segment	—	—	—	—	43,808	(43,808)	—
Total revenue	**5,899,600**	**7,963,714**	**8,211,099**	**5,325,622**	**43,808**	**(43,808)**	**27,400,035**
Operating profit (loss)	**1,814,021**	**857,304**	**2,336,394**	**561,642**	**(6,987)**	**15**	**5,562,389**
Depreciation expenses	**(921,999)**	**(576,138)**	**(2,579,150)**	**(549,020)**	**(7,805)**	**—**	**(4,634,112)**
Share of profit (loss) of associates	**—**	**—**	**—**	**—**	**1,211,177**	**(585,444)**	**625,733**
Interest income	—	—	—	—	**9,980**	—	**9,980**
Interest expense	**—**	**—**	**—**	**—**	**(120,998)**	**—**	**(120,998)**
Purchase of property, plant and equipment	**1,841,359**	**1,553,475**	**2,748,697**	**408,751**	**420**	**—**	**6,552,702**

d) Reconciliation for segment income (loss)

Revenue from external customers and segment income (loss) reported to the chief operating decision maker are measured using the same method as for revenue and operating profit in the financial statements. Thus, no reconciliation is needed.

e) Information on products and services

	Year ended December 31,					
	2019		2020		2021	
	NT$000	%	NT$000	%	NT$000	%
Testing	4,257,800	21	5,002,730	22	5,899,600	22
Assembly	5,148,877	25	6,001,964	26	7,963,714	29
LCDD	6,922,205	34	7,023,003	30	8,211,099	30
Bumping	4,008,999	20	4,983,684	22	5,325,622	19
	20,337,881	**100**	**23,011,381**	**100**	**27,400,035**	**100**

f) Geographical information

	Year ended December 31,		
	2019	2020	2021
	NT$000	NT$000	NT$000
Revenue			
ROC	15,875,027	18,341,726	21,608,567
Japan	1,905,032	1,291,026	1,768,460
Singapore	1,333,114	1,838,394	1,630,733
PRC	789,496	1,105,535	1,899,362
Others	435,212	434,700	492,913
	20,337,881	**23,011,381**	**27,400,035**

	December 31, 2020 NT$000	December 31, 2021 NT$000
Non-current assets		
ROC	18,913,501	21,506,565
PRC	117	86
Others	11,845	6,245
	18,925,463	**21,512,896**

g) Major customer information

The information on the major customers which constituted more than 10% of the Group's total revenue for the years ended December 31, 2019, 2020 and 2021 is as follows:

	Year ended December 31,					
	2019		2020		2021	
	Amount NT$000	%	Amount NT$000	%	Amount NT$000	%
Customers						
Customer A	4,756,755	23	5,088,544	22	5,681,277	21
Customer M	1,259,269	6	1,674,801	7	2,832,088	10
Customer K	2,419,612	12	2,332,914	10	2,519,631	9
Customer B	1,679,344	8	2,365,945	10	2,484,611	9
Customer C	2,048,260	10	2,143,130	9	2,268,439	8

45. Financial Statements Schedule: Valuation and Qualifying Accounts

	January 1 NT$000	Additions charged to expense or deduction of revenue NT$000	Deduction / Write-offs / Reversal NT$000	December 31 NT$000
Year of 2019 :				
Allowance for impairment of property, plant and equipment	317,593	9,938	(134,191)	193,340
Allowance for impairment of obsolescence and decline in market value of inventories	36,157	27,341	—	63,498
Provision for deficiency compensation	29,352	5,204	(32,558)	1,998
Sales for allowance	32,627	63,863	(70,490)	26,000
Year of 2020 :				
Allowance for impairment of property, plant and equipment	193,340	—	(11,338)	182,002
Allowance for impairment of obsolescence and decline in market value of inventories	63,498	16,317	—	79,815
Provision for deficiency compensation	1,998	4,358	(2,893)	3,463
Sales for allowance	26,000	21,916	(38,052)	9,864

ChipMOS TECHNOLOGIES INC. AND SUBSIDIARIES
Notes to the Consolidated Financial Statements (Continued)
December 31, 2019, 2020 and 2021

	January 1 NT$000	Additions charged to expense or deduction of revenue NT$000	Deduction / Write-offs / Reversal NT$000	December 31 NT$000
Year of 2021 :				
Allowance for impairment of property, plant and equipment	182,002	4,843	(3,666)	183,179
Allowance for impairment of obsolescence and decline in market value of inventories	79,815	41,771	—	121,586
Provision for deficiency compensation	3,463	11,898	(11,080)	4,281
Sales for allowance	9,864	34,744	(34,759)	9,849

For movements in loss allowance for contract assets, accounts receivable, and other receivables, please refer to Note 43.

ChipMOS TECHNOLOGIES INC.
Articles of Incorporation

SECTION I GENERAL PROVISIONS

Article 1

The Company has been incorporated as a company limited by shares under the Company Act. The name of the Company is "南茂科技股份有限公司" in Chinese, and "ChipMOS TECHNOLOGIES INC." in English.

Article 2

The scope of business of the Company shall be as follows:

CC01080	Electronic Parts and Components Manufacturing,
I501010	Product Designing,
F119010	Wholesale of Electronic Materials,
CC01120	Data Storage Media Manufacturing and Duplicating, and
F401010	International Trade (limited to the import and export of the registered business items)

The research, development, production, manufacturing, and sales of the products listed below:

1. Assembly and testing services for functional highly integrated memory semiconductors (principal products are DRAM with 64Mb, 256Mb and above).
2. Assembly and testing services for mixed-signal products and its modules.
3. Assembly and testing services for flat-panel display (FPD) driver ICs and FPD driver modules.
4. LCOS optical engine sub-systems.
5. Surface-mount technology and its related products.
6. Trading (import and export) of the products relating to the above.

Article 3

The Company may conduct investment which is necessary for its business operations, and may act as a shareholder with limited liability of another company by the resolution of the Board of Directors. The total amount of the Company's investment shall not be subject to the restriction of the total amount of the investment provided in Article 13 of the Company Act.

Article 4

The Company may provide guarantee for its affiliated companies as required by its business operations in accordance with the operational procedures for endorsements and guarantees.

Article 5

The Company establishes its head office in Hsinchu Science Park, and may, when necessary, establish branches domestically or abroad in accordance with the laws and regulations by the resolution of the board of directors and with the approval of the competent authorities.

Article 6

Public announcements of the Company shall be made in accordance with Article 28 of the Company Act.

SECTION II CAPITAL STOCK

Article 7

The total capital of the Company shall be in the amount of 9,700,000,000 New Taiwan Dollars, divided into 970,000,000 shares, of which the par value is 10 New Taiwan Dollars per share. For the shares not yet issued, the board of directors is authorized to issue such shares in installments based on the actual need.

970,000,000 New Taiwan Dollars included in the total capital under paragraph 1, which is equivalent to 97,000,000 shares at a par value of 10 New Taiwan Dollars each, shall be reserved for the employee stock options. The board of directors is authorized to issue such shares in installments based on the actual need.

Article 7-1

If the Company issues the employee stock options after the Company has been listed on a stock exchange, the Company may issue the employee stock options at a price below the market price; provided however, that such issuance shall be adopted by two-thirds or more of the shareholders present at a shareholders' meeting who represent the majority of the total number of issued shares. The employee stock options may be issued in installments within a year after the resolution of the shareholders' meeting.

In the event that the Company buys back treasury stocks and transfers them to the employees at a price below the average buy-back price, before making the transfer, the Company shall obtain the approval of two-thirds or more of the shareholders present at a shareholders' meeting who represent the majority of the total number of issued shares.

Article 7-2

The employees entitled to receive treasury stock bought back by the company in accordance with the Company Act may include employees of parents or subsidiaries of the Company meeting certain specific requirements.

The employees entitled to receive share subscription warrants may include employees of parents or subsidiaries of the Company meeting certain specific requirements.

When the Company issues new shares, the employees entitled to subscribe the new shares may include employees of parents or subsidiaries of the Company meeting certain specific requirements.

The employees entitled to receive restricted stock may include employees of parents or subsidiaries of the Company meeting certain specific requirements.

Article 8

The stock certificates of the Company shall be in a name-bearing form, and shall be made in accordance with the relevant regulations of the Company Act. The shares may be issued without printing share certificates; provided however, that the shares issued without share certificates shall be registered with a centralized securities depository enterprise.

Article 9

All shareholders shall file their respective chop specimen with the Company for the Company's record. The chop specimen shall be used for identification in drawing dividends or exercising shareholders' rights in written form. Share transfer, bestow, creation and rescission of share pledge, loss, destruction or other matters related to the shares shall be conducted in accordance with the Regulations Governing the Administration of Shareholder Services of Public Companies and other related laws and regulations.

The matters related to the shares of the Company shall be conducted in accordance with the Regulations Governing the Administration of Shareholder Services of Public Companies and related laws and regulations.

Article 10

Registration for transfer of shares shall be suspended sixty days prior to the date of an annual meeting of the shareholders, thirty days prior to the date of a special meeting of the shareholders, or five days prior to the record day for the distribution of dividend, bonus, or any other benefit by the Company.

SECTION III SHAREHOLDERS' MEETING

Article 11

Meetings of the shareholders are of two kinds: annual meetings and special meetings. Annual meetings shall be held at least once a year by the board of directors in accordance with the law within six months after the close of each fiscal year. Special meetings shall be convened by the board of directors whenever necessary according to the law. The audit committee may also convene a special meeting in accordance with the law when it deems necessary.

In case a shareholder is unable to attend the shareholders' meeting, he or she may appoint a representative to attend the meeting by issuing a letter of proxy prepared by the Company in which the scope of proxy shall be indicated with the signature and chop affixed. The use of the letter of proxy shall comply with Article 177 of the Company Act and the Regulations Governing the Use of Proxies for Attendance at Shareholder Meetings of Public Companies.

The voting at the shareholders' meeting of the Company shall adopt exercise of voting rights by electronic means and may adopt exercise of voting rights by correspondence. The method of exercise shall be conducted in accordance with the relevant laws and regulations.

Article 11-1

The Company shall notify the shareholders of the shareholders' meetings thirty days in advance of an annual meeting, and fifteen days in advance of a special meeting. The meeting notice shall set forth the date, time, place and purposes of the meeting.

If the shareholders to be notified agree, notices of the shareholders' meeting may be provided via electronic methods pursuant to the Electronic Signatures Act.

Matters pertaining to election or discharge of directors and supervisors, alteration of the Articles of Incorporation, reduction of capital, application for the approval of ceasing its status as a public company, approval of competing with the company by directors, surplus profit distributed in the form of new shares, reserve distributed in the form of new shares, dissolution, merger, spin-off, or any matters as set forth in Paragraph I, Article 185 of the Company Act, Article 26-1 and Article 43-6 of the Securities and Exchange Act, Article 56-1 and Article 60-2 of the Regulations Governing the Offering and Issuance of Securities by Securities Issuers shall be itemized in the causes or subjects to be described and the essential contents shall be explained in the notice to convene a meeting of shareholders, and shall not be brought up as extemporary motions.

The meeting convened by the shareholders' meeting has specified the full re-election of directors, and stated the date of appointment. After the election of the shareholders' meeting is completed, the same meeting shall not change its appointment date by temporary motion or other methods.

Article 11-2

Shareholders who hold 1% or more of the total issued shares may propose a matter to be discussed at the annual shareholders' meeting in writing. The relevant matters shall be handled in accordance with Article 172-1 of the Company Act.

Article 12

For shareholders of the Company, each share shall be entitled to one vote. However, shares held in accordance with Article 179 of the Company Act or relevant laws and regulations do not have any voting right.

Article 12-1

In case the sole shareholder of the Company is an institutional shareholder, the function of the shareholders' meeting of the Company shall be exercised by the board of directors, and the stipulations with regard to shareholders' meetings herein shall not be applicable.

Article 13

Except as otherwise provided by the relevant laws and regulations, the resolution of a shareholders' meeting shall be adopted by a majority vote of the shareholders present who represent the majority of the total number of the issued shares, in person or by proxy.

Article 13-1

In case the Company plans to revoke its public company status, the revocation shall be subject to a resolution of the shareholders' meeting. This provision shall not be modified when the stocks of the Company are registered with the Emerging Stock Market or the Company is listed on a stock exchange.

Article 14

The shareholders' meeting shall be presided over by the Chairperson of the board of directors. In case of his or her absence, a proxy shall be designated in accordance with Paragraph 3, Article 208 of the Company Act.

In the event that the shareholders' meeting is convened by a person who has the right to do so other than the board of directors, the convener shall preside over the meeting. In the event that there is more than one convener, the chairperson of the meeting shall be selected from among themselves.

Article 15

The resolutions of a shareholders' meeting shall be recorded in the meeting minutes, which shall be signed or stamped by the chairperson and secretary of the meeting and shall be distributed to the shareholders within twenty days after the meeting.

The minutes of the shareholders' meeting shall include the date, place, name of the chairperson, resolution methods, brief of the meeting and the voting results (including the numbers of votes). If there is the election of directors at the shareholders' meeting, the numbers of votes with which they were elected shall be announced, and shall be kept in the custody of the Company for the duration of the Company. The sign-in book of the shareholders and the letters of proxy shall be kept in the custody of the Company for at least one year, provided however, if there is a litigation involved, the sign-in book of the shareholders and the letters of proxy shall be kept until the litigation is closed.

The making and distribution of the meeting minutes in the preceding paragraph may be made by electronic methods. The company which is a public company may distribute the meeting minutes by making a public announcement.

SECTION IV DIRECTORS

Article 16

The Company shall have nine to eleven directors to be elected by the shareholders' meeting from among candidates of legal capacity. The term of the directors shall be three years. The directors may be re-elected and re-appointed. The Company adopts the candidate nomination system under Article 192-1 of the Company Act for the election of directors and independent directors. The directors and independent directors shall be elected by the shareholders from the list of candidates. The matters regarding the acceptance and the announcement of the nomination of directors and independent directors shall be handled in accordance with the laws and regulations related to the Company Act and the Securities and Exchange Act, and in accordance with the Company's rules related to the election of directors and independent directors.

Article 16-1

The Company shall have independent directors in accordance with Article 14-2 of the Securities and Exchange Act. Among the directors, there shall be three to five independent directors, the total number of which shall not be less than one-fifth of the directors.

The chairman and president or the same position are the same person or spouse or first-degree relatives. There must be at least four independent directors and more than half of the directors should not serve as employees or managers.

The professional qualifications, shareholding, term, restrictions on holding concurrent positions, and other requirements of the independent directors shall be handled in accordance with relevant laws and regulations promulgated by securities authorities. In case the sole shareholder of the Company is an institutional shareholder, the independent directors shall be appointed by such institutional shareholder and the preceding paragraph shall not be applicable.

Article 16-2

The Company shall establish an audit committee in accordance with Articles 14-4 of the Securities and Exchange Act, which shall consist of all independent directors. The audit committee or the members of the audit committee shall perform the responsibilities of supervisors under the Company Act, Securities and Exchange Act, and other relevant laws and regulations.

Article 17

The board of directors consists of directors. The chairperson of the board of directors shall be elected from among the directors by a majority vote at a meeting attended by two-thirds or more of the directors. The chairperson of the board of directors shall act in his capacity to represent the Company externally and shall comply with Article 195 of the Company Act.

The chairperson of the board of directors shall preside over the shareholders' meeting and the board of directors meeting, and shall externally represent the company to perform his or her duties accorded by law. In his or her absence, a proxy shall be designated in accordance with Article 208 of the Company Act. If the board of directors meeting is held via video conference, the directors who attend the meeting via video conference shall be deemed as attending the meeting in person.

Article 18

Except as otherwise provided by the Company Act, a resolution of the board of directors is adopted if it is approved by the majority of the directors present at a meeting attended by the majority of the directors. The board of directors meeting shall be held at least quarterly. A director may appoint another director to attend the board of directors meeting on his or her behalf; provided however that a letter of proxy listing the scope of authorization with regard to the agenda of the meeting is issued. Each director may only act as the proxy for one director.

The stipulation regarding the meeting minutes for shareholders' meeting under Article 15 shall be applied to the board of directors meetings, *mutatis mutandis*.

Article 19

The board of directors has the authority to:

1. review the business policy and mid-term and long-term development plan;
2. review and supervise the operation of the annual business plan;
3. review and approve the budget and review the settlement of accounts;
4. review plans for increase or decrease in capital;
5. review proposals for the distribution of profits or covering of losses;

6. review and approve material agreements;

7. submit the proposal to the shareholders' meeting with regard to distribution of profits, amendment of the Articles of Incorporation, change of capital, and dissolution or merger of the Company;

8. review and approve the charter documents and important business rules of the Company;

9. approve material project of capital expenditure;

10. appoint and terminate the president and vice president(s);

11. execute the resolutions of the shareholders' meeting;

12. hold the shareholders' meeting and prepare business reports; and

13. handle other matters required or permitted by the law.

Article 20

The scope of authority of the audit committee shall be the performance of the responsibilities of supervisors specified under the Company Act, Securities and Exchange Act and other relevant laws and regulations, and the authorities stipulated under the charter document in respect of the audit committee of the Company.

Article 21

The resolution of the audit committee shall be adopted with the consent of the majority of the committee members.

Article 21-1

The board of directors is authorized to determine the remuneration of all directors based on the level of involvement of and the value of contribution by the directors, taking into account the level of remuneration given by companies in the same industry.

Article 21-2

The Company should purchase liability insurance for its directors and independent directors in relation to the liabilities to be borne by them under the law for the performance of their responsibilities during the office term.

SECTION V OFFICERS

Article 22

The Company shall appoint one president and one or more vice presidents based on its business needs. The president shall be nominated by the chairperson of the board of directors and comply with Article 29 of the Company Act.

Article 23

The president shall act in accordance with the instructions of the chairperson of the board of directors and manage the business of the Company in accordance with the resolutions of the board of directors and shareholders' meeting and these Articles of Incorporation. Except for the vice presidents, the president may nominate other officers and has the right of performance evaluation. The vice presidents shall assist the president in the daily operation of the Company.

SECTIONVI ACCOUNTING

Article 24

The fiscal year of the Company shall commence from January 1 of each year and end on December 31 of the same year, and shall conduct the assessment of settlement of accounts after the close of each fiscal year. The board of directors shall prepare the following reports and shall send such reports to the audit committee for review thirty days before the annual shareholders' meeting, and then submit such reports to the annual shareholders' meeting for recognition:

1. a business report;
2. financial statements; and
3. a proposal on the distribution of profits or covering of losses.

Article 25

If there is profit in any given year, the Company shall set aside 10% thereof as employee compensation. The board of directors may resolve to pay said compensation in the form of shares or cash. Such compensation may be paid to the employees of an affiliated company who meet the conditions set by the board of directors. The board of directors may resolve to set aside no more than 0.5% of the above-mentioned profit as the remuneration of the directors. A proposal on the compensation for the employees and remuneration of the directors shall be presented at the shareholders' meeting. If the Company has accumulated losses, the amount for making up said losses shall be reserved before setting aside the compensation for the employees and the remuneration of directors at the rates stated above.

Article 25-1

Upon the final settlement of accounts, if there is net profit, the Company shall first set aside the tax payable and offset its losses before setting aside a legal capital reserve at 10% of the remaining profit. The Company shall then set aside or reverse the special capital reserve in accordance with the laws and regulations and as requested by the competent authorities. The remaining profit of that fiscal year, as well as the accumulated undistributed profit at the beginning of the same year and the adjusted undistributed profit of the given fiscal year, shall be distributable profit. If there is any surplus distributable profit after the board of directors sets aside a reserve based on the Company's operational needs, such surplus profit may be distributed in full or in part to shareholders as dividends, subject to the approval of the shareholders' meeting.

A proposal on the distribution of dividends shall be submitted by the board of directors annually to the shareholders' meeting, and be based on factors such as past years' profit, the current and future investment environment, the Company's capital needs, competition in the domestic and foreign markets, and budgets, with an aim to pursuing shareholders' interests and balancing the dividend distribution and the long-term financial plan of the Company. The distribution of profits of the Company can be made in the form of cash dividends or stock dividends, provided that the cash dividend shall account for at least 10% of the total profit distributed as dividends in the given year.

SECTION VII SUPPLEMENTARY PROVISIONS

Article 26

The internal organization of the Company and the detailed procedures of business operation shall be determined separately by the board of directors.

Article 27

Matters not provided for in these Articles of Incorporation shall be handled in accordance with the Company Act.

Article 28

These Articles of Incorporation are agreed upon and signed by all the promoters of the Company on July 17, 1997. The first amendment was made on April 27, 1998. The second amendment was made on May 18, 2000. The third amendment was made on June 5, 2002. The fourth amendment was made on June 26, 2003. The fifth amendment was made on June 11, 2004. The sixth amendment was made on June 15, 2005. The seventh amendment was made on August 2, 2005. The eighth amendment was made on June 15, 2006. The ninth amendment was made on April 12, 2007. The tenth amendment was made on June 28, 2007. The eleventh amendment was made on December 17, 2007. The twelfth amendment was made on March 30, 2010. The thirteenth amendment was made on June 22, 2012. The fourteenth amendment was made on June 17, 2013. The fifteenth amendment was made on December 30, 2014. The sixteenth amendment was made on January 28, 2016. The seventeenth amendment was made on May 26, 2017. The eighteenth amendment was made on June 10, 2019. The nineteenth amendment was made on June 9, 2020. The twentieth amendment was made on July 12, 2021.

ChipMOS TECHNOLOGIES INC.
Chairman: Shih-Jye Cheng

Exhibit 8.1

List of Principal Subsidiaries

Name	Place of Incorporation
ChipMOS TECHNOLOGIES (BVI) LTD.	British Virgin Islands
ChipMOS U.S.A., INC.	U.S.A.
ChipMOS SEMICONDUCTORS (Shanghai) LTD.	People's Republic of China

Exhibit 12.1

CERTIFICATIONS

I, Shih-Jye Cheng, certify that:

1. I have reviewed this annual report on Form 20-F of ChipMOS TECHNOLOGIES INC.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;

4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and

5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of the company's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: April 14, 2022

/s/ Shih-Jye Cheng

Name: Shih-Jye Cheng
Title: Chairman and President

Exhibit 12.2

CERTIFICATIONS

I, Silvia Su, certify that:

1. I have reviewed this annual report on Form 20-F of ChipMOS TECHNOLOGIES INC.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the company as of, and for, the periods presented in this report;

4. The company's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the company and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the company, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the company's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the company's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the company's internal control over financial reporting; and

5. The company's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the company's auditors and the audit committee of company's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the company's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the company's internal control over financial reporting.

Date: April 14, 2022

/s/ Silvia Su

Name: Silvia Su
Title: Vice President, Finance and Accounting Management Center

Exhibit 13.1

ChipMOS TECHNOLOGIES INC.
CERTIFICATION

Pursuant to 18 U.S.C. §1350, the undersigned, Shih-Jye Cheng, Chairman and President of ChipMOS TECHNOLOGIES INC. (the "Company"), hereby certifies, to his knowledge, that the Company's Annual Report on Form 20-F for the year ended December 31, 2021 (the "Report") fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company, as of, and for, the periods presented in the Report.

The foregoing certification is being furnished pursuant to 18 U.S.C. §1350 solely for purposes of complying with the provisions of Section 906 of the Sarbanes-Oxley Act of 2002, is not intended to be used or relied upon for any other purpose and is not being filed as part of the Report or as a separate disclosure document.

Date: April 14, 2022

/s/ Shih-Jye Cheng

Name: Shih-Jye Cheng
Title: Chairman and President

Exhibit 13.2

ChipMOS TECHNOLOGIES INC.
CERTIFICATION

Pursuant to 18 U.S.C. §1350, the undersigned, Silvia Su, Vice President of the Finance and Accounting Management Center of ChipMOS TECHNOLOGIES INC. (the "Company"), hereby certifies, to her knowledge, that the Company's Annual Report on Form 20-F for the year ended December 31, 2021 (the "Report") fully complies with the requirements of Section13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company, as of, and for, the periods presented in the Report.

The foregoing certification is being furnished pursuant to 18 U.S.C. §1350 solely for purposes of complying with the provisions of Section 906 of the Sarbanes-Oxley Act of 2002, is not intended to be used or relied upon for any other purpose and is not being filed as part of the Report or as a separate disclosure document.

Date: April 14, 2022

/s/ Silvia Su

Name: **Silvia Su**
Title: **Vice President, Finance and Accounting Management Center**