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TSMC Annual Report 2021(I)



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- TSMC annual report is available at https://investor.tsmc.com/english/annual-reports

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TSMC Vision, Mission & Core Values

TSMC's Vision

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

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

TSMC's Mission

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

TSMC's Core Values

Integrity

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

Commitment

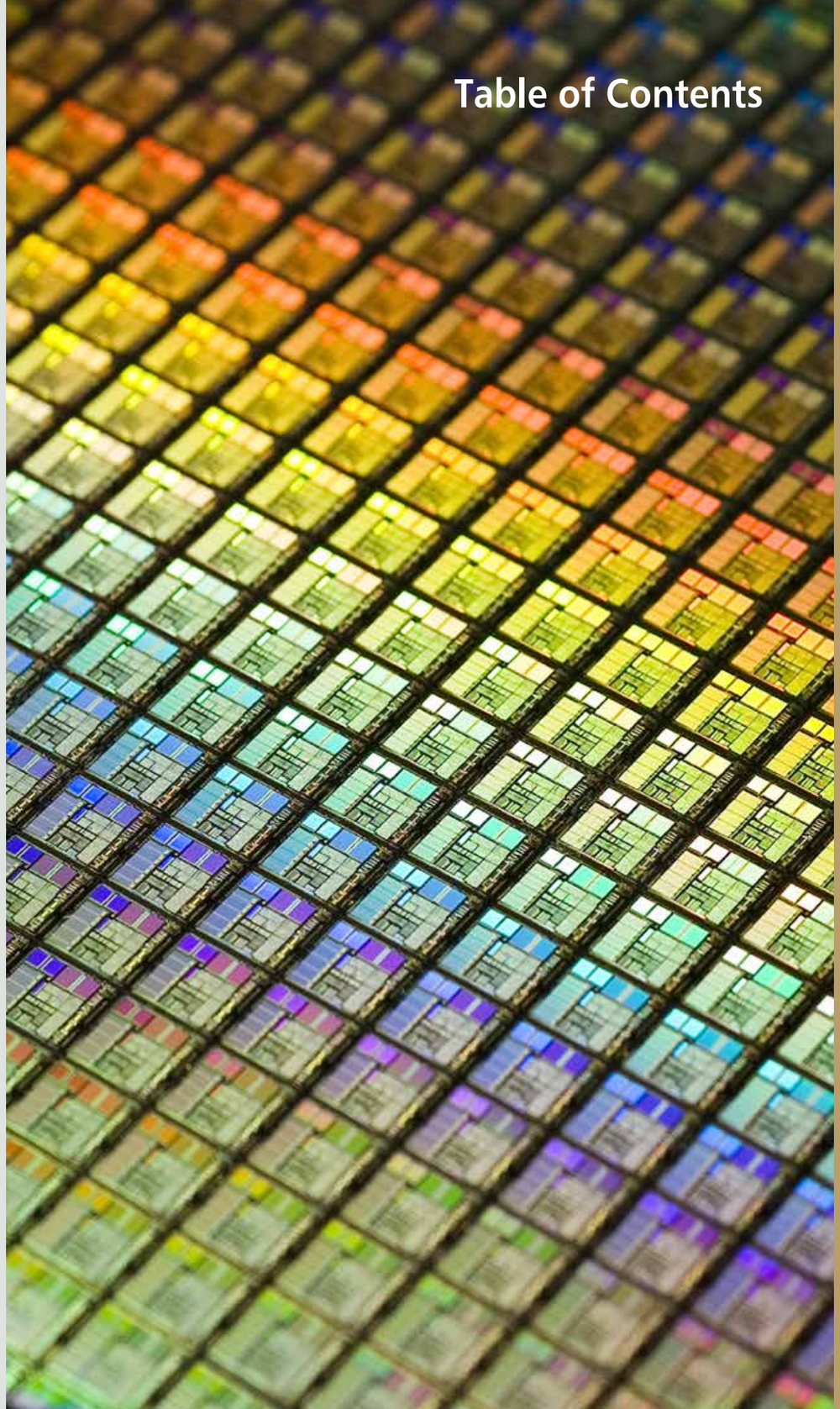
TSMC is committed to the welfare of customers, suppliers, employees, shareholders, and society. These stakeholders all contribute to TSMC's success, and TSMC is dedicated to serving their best interests. In return, TSMC hopes all these stakeholders will make a mutual commitment to the Company.

Innovation

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

Customer Trust

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



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Deployed **291** distinct process technologies, and manufactured **12,302** products for **535** customers

Produced **26%** of the world's semiconductor output value (excluding memory) in 2021

Advanced technologies (7-nanometer and beyond) accounted for **50%** of total wafer revenue

Total wafer shipments were **14.2 mn** 12-inch equivalent wafers

張忠謀大樓
Morris Chang Building



1. Letter to Shareholders

Dear Shareholders,

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

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

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

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

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

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

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

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

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

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

Highlights of TSMC's accomplishments in 2021:

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

2021 Financial Performance

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

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

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

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

Technological Developments

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

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

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

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

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

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

Environmental, Social and Governance

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

In 2021, TSMC committed to the goal of Net Zero Emissions by 2050, while setting the short-term goal of Zero Growth in Emissions by 2025. By actively implementing emission reduction measures, the Company works to make its carbon emissions reduced to the 2020 level by 2030. We also published our Task Force on Climate-related Financial Disclosures (TCFD) Report, becoming an industry leader in climate disclosure.

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

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

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

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

Corporate Developments

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

Honors and Awards

TSMC received recognition for achievements in innovation, corporate governance, sustainability, investor relations and overall excellence in management from organizations including *Forbes, Fortune Magazine*, *Asiamoney*, *FinanceAsia*, *CommonWealth Magazine*, and the Taiwan Stock Exchange. TSMC was also recognized by *TIME Magazine* as "2021 TIME100 Most Influential Companies." In sustainability, we were chosen once again as a component of the Dow Jones Sustainability Indices, becoming the only semiconductor company to be selected for 21 consecutive years. We also received MSCI ESG Research's AAA Rating, S&P Global's "The Sustainability Yearbook Award 2021" Silver Class, ISS ESG's "Prime" status in the ESG Corporate Rating, and *Corporate Knight*'s 2021 "Global 100 Most Sustainable Corporations". Meanwhile, we remained a major component in various MSCI ESG and FTSE4Good indices. In investor relations, TSMC continued to receive multiple awards from *Institutional Investor Magazine*.

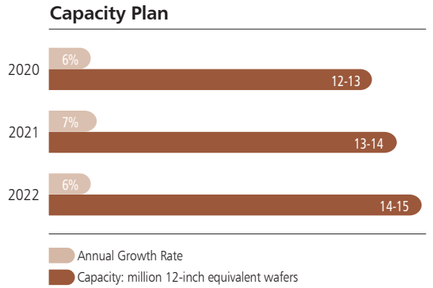
Outlook

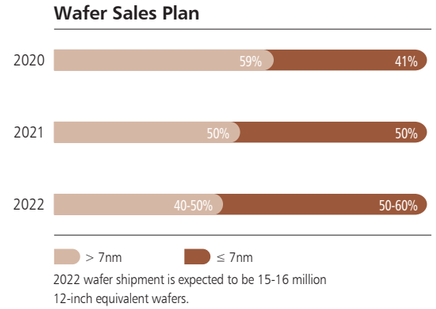
Although COVID-19 and cyclical-related uncertainties may persist in the near-term, the trend of technology becoming more pervasive and essential in people's lives, and the acceleration of digital transformation, is only becoming stronger. The semiconductor industry value in the supply chain is increasing.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

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

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

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





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

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





Mark Liu
Chairman



C.C. Wei
Chief Executive Officer

1987
- Dr. Morris Chang founds TSMC, pioneering the pure-play foundry business model

1988
- Establishes North American subsidiary – TSMC North America

1989
- Establishes European subsidiary – TSMC Europe

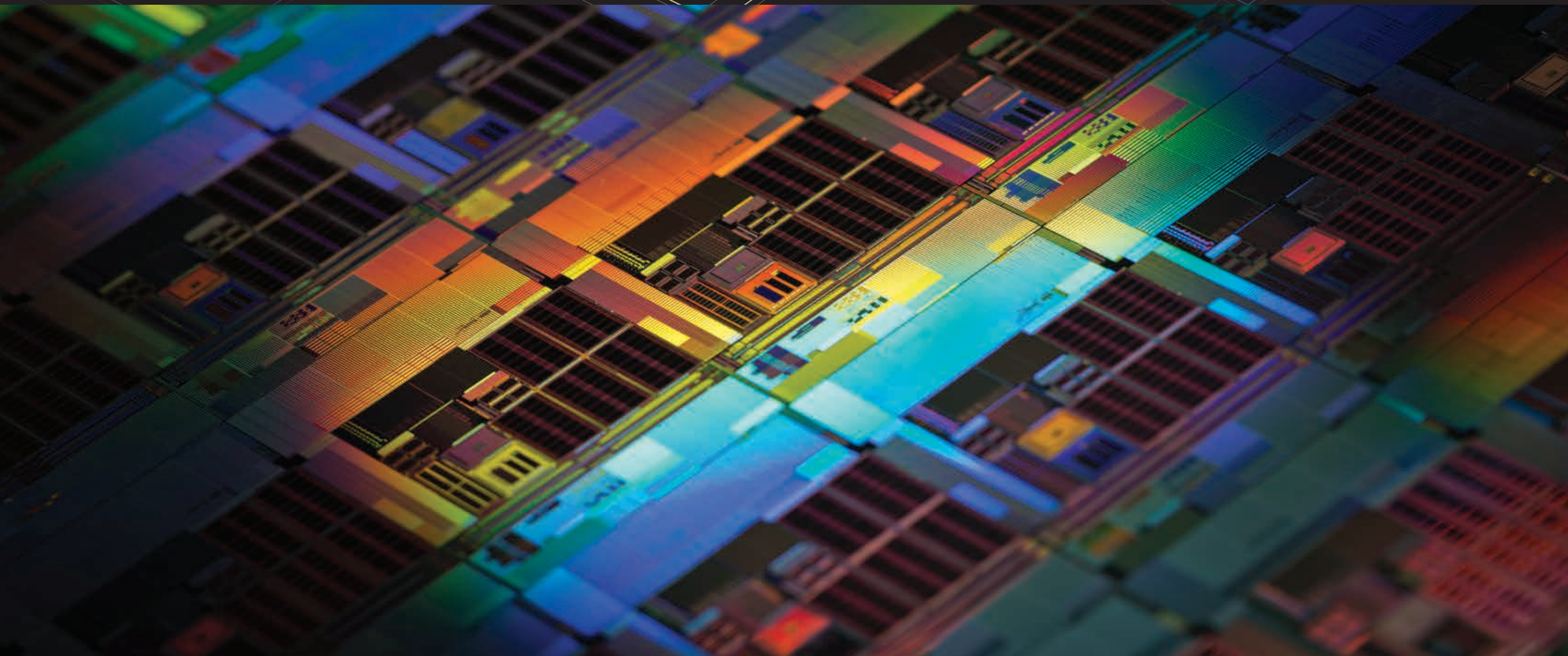
1994
- TSMC's ordinary shares are listed on the Taiwan Stock Exchange

1995
- Establishes WaferTech, a joint venture with long-term customers and the first pure-play foundry company in the United States

1996
- Proposes "Virtual Fab" as company's vision

1997
- Establishes Japanese subsidiary – TSMC Japan KK

1998
- Establishes the TSMC Education and Culture Foundation



2. Company Profile

2.1 An Introduction to TSMC

Established in 1987 and headquartered in Hsinchu Science Park, Taiwan, TSMC pioneered the pure-play foundry business model with an exclusive focus on manufacturing customers' products. By choosing not to design, manufacture or market any semiconductor products under its own name, the Company ensures that it never competes with its customers. Based on this founding principle, the key to TSMC's success has always been to focus on its customers' success. TSMC's foundry business model has enabled the rise of the global fabless industry, and, since its inception, TSMC has been the world's leading semiconductor foundry. In 2021, the Company manufactured 12,302 different products using 291 distinct technologies for 535 different customers.

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

The annual capacity of the manufacturing facilities managed by TSMC and its subsidiaries exceeded 13 million 12-inch equivalent wafers in 2021. These facilities include four 12-inch wafer GIGAFAB® fabs, four 8-inch wafer fabs, and one 6-inch wafer fab – all in Taiwan – as well as one 12-inch wafer fab at a wholly owned subsidiary, TSMC Nanjing Company Limited, and two 8-inch wafer fabs at wholly owned subsidiaries, WaferTech in the United States and TSMC China Company Limited.

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

Meanwhile, the Company continued to execute its plan for an advanced semiconductor fab in Arizona, the United States, with production targeted for 2024.

TSMC provides customer support, account management and engineering services through offices in North America, Europe, Japan, China, and South Korea. At the end of 2021, the Company and its subsidiaries employed more than 65,000 people worldwide.

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

2.2 Market/Business Summary

2.2.1 TSMC Achievements

In 2021, TSMC maintained its leading position in the foundry segment of the global semiconductor industry by accounting for 26% of the worldwide semiconductor market excluding memory, an increase from 24% in 2020. TSMC's growth was mainly driven by the continued expansion of 5G and high performance computing (HPC)-related applications.

The Company's strong market position stems in great part from its leadership in advanced process technologies. In 2021, 50% of TSMC's wafer revenue came from advanced manufacturing processes – defined as geometries of 7nm and smaller – up from 41% in 2020.

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

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

2.2.2 Market Overview

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

2.2.3 Industry Outlook, Opportunities and Threats

Foundry Industry Demand and Supply Outlook

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

For 2022, the industry megatrends are likely to continue and hence TSMC sees healthy increases in overall demand for electronic devices in general, resulting in projected growth in the low-teens for the worldwide semiconductor market excluding memory. For the longer term, fueled by increasing semiconductor content in most electronic devices, continued market share gains by fabless companies, increases in integrated device manufacturer (IDM) outsourcing, and the expanding use of in-house application-specific integrated circuits (ASIC) by systems companies, TSMC expects foundry segment revenue to outpace the high single-digit compound annual growth rate projected for the worldwide semiconductor market excluding memory from 2021 through 2026.

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

• Smartphones

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

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

• High Performance Computing (HPC)

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

Following its strong performance in 2021, HPC unit shipment growth is projected to be low-single-digit in 2022. However, the accelerated-digitalization stimulated by COVID-19 pandemic had induced a structural increase in HPC-related semiconductor demand. As industry embarks upon the 5G era, an increasingly intelligent and more connected world will fuel massive requirements for computation power as well as a great need for energy-efficient computing. All these require higher performance and more power-efficient CPUs, GPUs, NPUs, AI accelerators, and related-ASICs, which will drive the overall HPC platform towards richer silicon content, more advanced process technologies, and advanced 3D packaging. These trends are all favorable to TSMC, given our technology leadership in these areas.

• Internet of Things (IoT)

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

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

• Automotive

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

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

• Digital Consumer Electronics (DCE)

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

While set-top box (STB) demand, bolstered by 4K and HDR upgrades, grew in 2021, other consumer products such as digital cameras and cordless phones continued to decline due to stagnant demand and cannibalization by smartphones.

Overall, the DCE market is expected to decline low-single-digit in 2022, while certain higher-end segments such as mini-LED, OLED, high frame rate (HFR) 4K and smart TVs continue to show positive growth.

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

Supply Chain

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

2.2.4 TSMC Position, Differentiation and Strategy

Position

TSMC is a worldwide semiconductor foundry leader in advanced, specialty and advanced packaging technologies. In 2021, TSMC accounted for 26% of the worldwide semiconductor market excluding memory, an increase from 24% in 2020. Net revenue by geography, calculated mainly on the country in which customers are headquartered, was: 65% from North America; 14% from the Asia Pacific region, excluding China and Japan; 10% from China; 6% from Europe, the Middle East and Africa; and 5% from Japan. Net revenue by platform was: 44% from smartphones; 37% from the high performance computing (HPC); 8% from the Internet of Things (IoT); and 4% from automotive. In addition, 4% came from digital consumer electronics, while others accounted for the remaining 3%.

Differentiation

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

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

Well known for industry-leading manufacturing capabilities, TSMC extends its leadership through its Open Innovation Platform® (OIP) and Grand Alliance initiatives. The OIP initiative quickens the pace of innovation in the semiconductor design community and among its ecosystem partners, as well as in the Company's own IP, design implementation and design for manufacturing capabilities, process technology and backend services. A key element is a set of ecosystem interfaces and collaborative components initiated and supported by the Company that more efficiently empower innovation throughout the supply chain and drive the creation and sharing of new revenue and profits. The TSMC Grand Alliance is one of the most powerful forces for innovation in the semiconductor industry, bringing together customers, electronic design automation (EDA) partners, IP partners, and key equipment and material suppliers at a new, higher level of collaboration. Its objective is to help customers, alliance members and TSMC win business and improve competitiveness.

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

Strategy

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

Smartphone Platform: TSMC offers customers leading process technologies such as 4nm FinFET (N4) and 5nm FinFET (N5) logic process technologies, as well as comprehensive IPs for premium product applications to further enhance chip performance, reduce power consumption, and decrease chip size. For mainstream product applications, the Company offers a broad range of logic process technologies, including 6nm FinFET (N6), 7nm FinFET Plus (N7+), 7nm FinFET (N7), 12nm FinFET compact plus (12FFC+), 12nm FinFET compact (12FFC), 16nm FinFET compact plus (16FFC+), 16nm FinFET compact (16FFC), 28nm high performance compact (28HPC), 28nm high performance mobile compact plus (28HPC+), and 22nm ultra-low power (22ULP) logic process technologies, in addition to comprehensive IPs, to satisfy customer needs for high performance and low power chips. Furthermore, for premium and mainstream product applications, the Company offers highly competitive, leading-edge specialty technologies to deliver specialty companion chips for customers' logic application processors, including RF, embedded flash memory, emerging memory technologies, power management, sensors, and display chips, as well as advanced 3DFabric™ packaging technologies such as industry-leading Integrated Fan-Out (InFO) technology.

High Performance Computing (HPC) Platform: Driven by data explosion and application innovation, HPC has become one of the key growth drivers for TSMC's business. TSMC provides customers, both fabless IC design companies and system companies, with leading-edge process technologies such as N4, N5, N6, N7, and 12nm/16nm FinFET, as well as comprehensive IPs including high-speed interconnect IPs to meet customers' product requirements for transferring and processing vast amounts of data anywhere, anytime. In particular, TSMC introduced its first high performance computing (HPC)-focused technology, N4X, representing the ultimate performance and maximum clock frequencies in TSMC's 5-nanometer family. Based on advanced process nodes, a variety of HPC products have been launched, such as central processing units (CPUs), graphics processor units (GPUs), field programmable gate arrays (FPGAs), server processors, accelerators, high-speed networking chips, etc. These products can be used in current and future 5G, AI, cloud, and data centers. TSMC also offers multiple advanced 3DFabric™ packaging technologies, such as CoWoS®, InFO, and TSMC-SoIC™, to enable homogeneous and heterogeneous chip integration to meet customer requirements for high performance, high compute density and efficiency, low latency and high integration. TSMC will continue to optimize its high performance computing platform and strengthen collaboration with customers to help them capture market growth in HPC markets.

Internet of Things Platform: TSMC provides leading, comprehensive and highly integrated ultra-low power (ULP) technology platforms to enable innovations for artificial intelligence of things (AIoT) applications. The Company's offerings include the new FinFET-based 12-nanometer technology – N12e™ featuring energy efficiency with high performance that results in more computing power and AI inferencing, 22nm ultra-low leakage (ULL), 28nm ULP, 40nm ULP, and 55nm ULP, which have been widely adopted by various edge AI system-on-a-chip (SoC), and battery-powered applications. TSMC has also extended its low Vdd (low operating voltage) offerings with wide-range of operating voltage SPICE (simulation program with integrated circuit emphasis) models for extreme low-power applications. TSMC also offers competitive and comprehensive specialty technologies in RF, enhanced analog devices, embedded flash memory, emerging memory, sensors and display chips, as well as multiple 3DFabric™ advanced packaging technologies, including InFO technology to support the fast-growing demand in AIoT edge computing and wireless connectivity.

Automotive Platform: TSMC's Automotive Platform provides a comprehensive spectrum of technologies and services to support the three megatrends – safer, smarter and greener – in the automotive industry. The Company is also an industry leader in providing a robust automotive IP ecosystem, which covers 16nm FinFET and 7nm FinFET technologies and extends to 5nm FinFET technology, for advanced driver-assistance systems (ADAS), advanced in-vehicle infotainment (IVI), as well as zonal controllers for new electrical/electronic (E/E) architecture for the automotive industry. In addition to its advanced logic platform, TSMC offers a broad array of competitive specialty technologies, including 28nm embedded flash memory, 28nm, 22nm, and 16nm mmWave RF, high sensitivity CMOS Image/LiDAR (light detection and ranging) sensors, and power management ICs. Magnetic random access memory (MRAM), an emerging technology, has demonstrated automotive Grade-1 capability on 22nm and is under development with good progress on 16nm to meet automotive Grade-1 requirements. All these automotive technologies are applied to TSMC's automotive process qualification standards based on AEC-Q100 standards or meeting customers' technology specifications.

Digital Consumer Electronics (DCE) Platform: TSMC provides customers with leading, comprehensive technologies to deliver AI-enabled smart devices for DCE applications, including smart digital TVs (DTV), set-top boxes (STBs), AI-embedded smart cameras and associated wireless local area networks (WLAN), power management ICs (PMIC), timing controllers (T-CON) and so on. The Company's leading 7nm FinFET compact (7FFC), 16FFC/12FFC, 22ULP/22ULL and 28HPC+ technologies have been widely adopted by leading global makers of 8K/4K DTV, 4K streaming STB/over-the-top (OTT), digital single-lens reflex (DSLR) devices, and so on. TSMC will continue to make these technologies more cost competitive through die size shrink for customers' digital intensive chip designs and to drive lower power consumption for more cost-effective packaging.

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

- **Short-Term Semiconductor Business Development Plan**

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

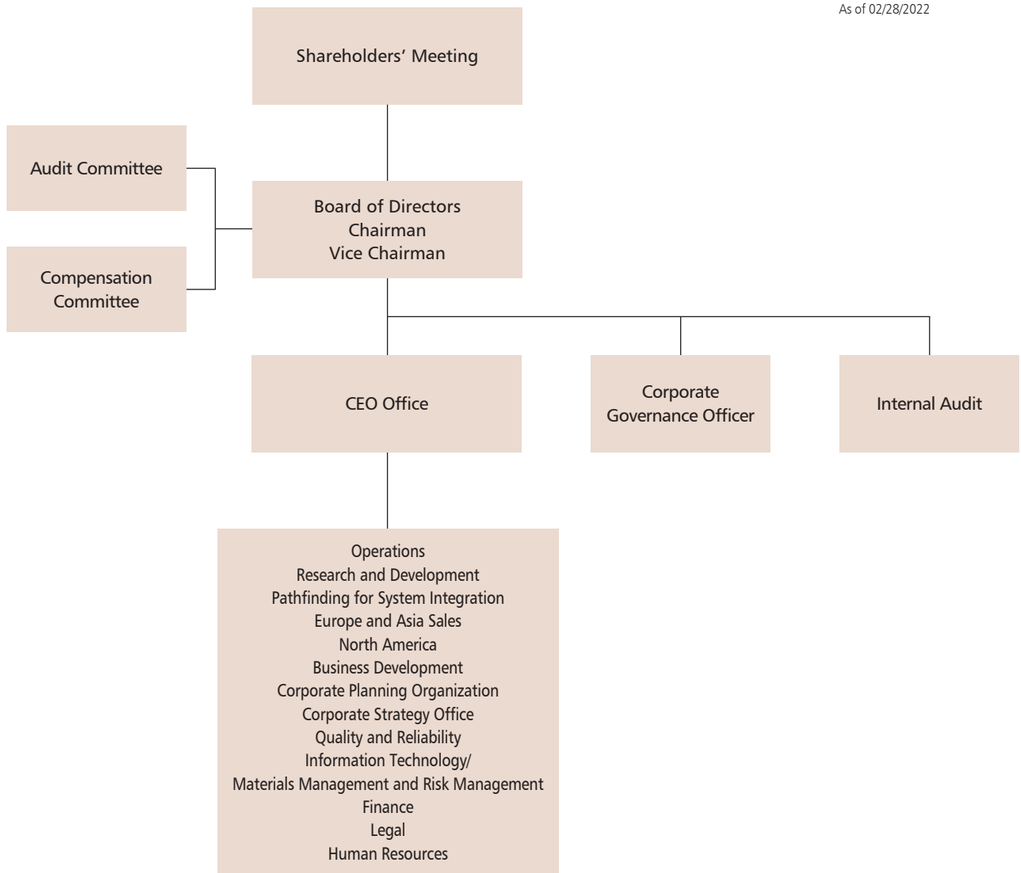
- **Long-Term Semiconductor Business Development Plan**

1. Continue developing leading-edge technologies at a pace consistent with the Moore's Law.
2. Broaden specialty business contributions by further developing derivative technologies.
3. Provide more integrated services, covering system-level integration design, design technology definition, design tool preparation, wafer processing, 3DFabric™ advanced packaging and silicon stacking technologies, and testing services, and so on, all of which deliver more value to customers through optimized solutions.

2.3 Organization

2.3.1 Organization Chart

As of 02/28/2022



2.3.2 Major Corporate Functions

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

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

Pathfinding for System Integration
- System Integration Technology Pathfinding

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

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

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

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

Corporate Strategy Office
- Corporate strategy formation and implementation

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

Information Technology/Corporate Information Security
- Integration of the Company's technology and business IT systems; infrastructure development; communication services and assurance of IT security and service quality; implementing big data and machine learning to improve the Company's productivity and accelerate R&D delivery

Materials Management and Risk Management
- Procurement, warehousing, import and export, and logistics support; also environmental protection, industrial safety, occupational health and risk management

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

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

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

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

2.4 Board Members

2.4.1 Information Regarding Board Members

As of 02/28/2022

Title/Name	Gender Age	Nationality or Place of Registration	Date Elected	Term Expires	Date First Elected	Shares Held When Elected		Shares Currently Held		Shares Currently Held by Spouse & Minors		Selected Education and Professional Qualification Past Positions Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares	%	Shares	%	Shares	%		
Chairman Mark Liu	Male 66-70	U.S.	06/05/2018	07/25/2024	06/08/2017	12,913,114	0.05%	12,913,114	0.05%	-	-	**Selected Education and Professional Qualification** Bachelor Degree in Electrical Engineering, National Taiwan University Master Degree and Ph.D. in Electrical Engineering & Computer Science, University of California, Berkeley, U.S. **Past Positions** President, Worldwide Semiconductor Manufacturing Corp. Senior Vice President, Advanced Technology Business, TSMC Senior Vice President, Operations, TSMC Executive Vice President and Co-Chief Operating Officer, TSMC President and Co-CEO, TSMC **Current Positions at Non-profit Organizations** Chairman, Taiwan Semiconductor Industry Association (TSIA)	None
Vice Chairman C.C. Wei	Male 66-70	R.O.C.	06/05/2018	07/25/2024	06/08/2017	7,179,207	0.03%	5,879,207	0.02%	700,261	0.00%	**Selected Education and Professional Qualification** Bachelor and Master Degrees in Electrical Engineering, National Chiao Tung University Ph.D. in Electrical Engineering, Yale University, U.S. **Past Positions** Senior Vice President, Chartered Semiconductor Manufacturing Ltd., Singapore Senior Vice President, Mainstream Technology Business, TSMC Senior Vice President, Business Development, TSMC Executive Vice President and Co-Chief Operating Officer, TSMC President and Co-CEO, TSMC Chairman, Taiwan Semiconductor Industry Association (TSIA)	CEO, TSMC
Director F.C. Tseng	Male 76-80	R.O.C.	06/05/2018	07/25/2024	05/13/1997	34,472,675	0.13%	29,472,675	0.11%	5,132,855	0.02%	**Selected Education and Professional Qualification** Bachelor Degree in Electrical Engineering, National Cheng Kung University Master Degree in Electrical Engineering, National Chiao Tung University Ph.D. in Electrical Engineering, National Cheng Kung University Honorary Ph.D., National Chiao Tung University Honorary Ph.D., National Tsing Hua University **Past Positions** President, Vanguard International Semiconductor Corp. President, TSMC Deputy CEO, TSMC Vice Chairman, TSMC Independent Director, Chairman of Audit Committee & Compensation Committee member, Acer Inc. Director, National Culture and Arts Foundation, R.O.C. **Current Positions at Non-profit Organizations** Chairman, TSMC Education and Culture Foundation Director, Cloud Gate Culture and Arts Foundation Director, Zu-Ming Medical Foundation	Chairman of: - TSMC China Company Ltd. (a non-public company) - Global UniChip Corp. Vice Chairman, Vanguard International Semiconductor Corp.
Director National Development Fund, Executive Yuan (Note 1) Representative: Ming-Hsin Kung	Male 56-60	R.O.C.	06/05/2018	07/25/2024	12/10/1986 07/24/2020 (Note 2)	1,653,709,980 779 (Note 2)	6.38% 0.00%	1,653,709,980 779	6.38% 0.00%	- -	- -	**Selected Education and Professional Qualification** B.A., Statistics, Fu Jen Catholic University M.A., Economics, National Taiwan University Ph.D., Economics, National Chung Hsing University **Past Positions** Adjunct Assistant Professor, Tamkang University Deputy Executive Secretary, Industrial Development Advisory Council, Ministry of Economic Affairs Research Fellow, Science and Technology Advisory Group, Executive Yuan Research Fellow, Taiwan Institute of Economic Research Vice President, Taiwan Institute of Economic Research Advisory Committee Member, Mainland Affairs Council, Executive Yuan Consultant, Ministry of Economic Affairs Member, National Stabilization Fund Management Committee, Executive Yuan Deputy Minister, National Development Council Deputy Minister, Ministry of Economic Affairs Minister without Portfolio, Executive Yuan **Current Positions at Non-profit Organizations** Minister without Portfolio, Executive Yuan & concurrently Minister, National Development Council, R.O.C.	Director, Taiwania Capital Management Corp. (Representative of the National Development Fund)

(Continued)

Title/Name	Gender Age	Nationality or Place of Registration	Date Elected	Term Expires	Date First Elected	Shares Held When Elected		Shares Currently Held		Shares Currently Held by Spouse & Minors		Selected Education and Professional Qualification Past Positions Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares	%	Shares	%	Shares	%		
Independent Director Sir Peter L. Bonfield	Male 76-80	UK	06/05/2018	07/25/2024	05/07/2002	-	-	-	-	-	-	**Selected Education and Professional Qualification** Bachelor and Honours Degrees in Engineering, Loughborough University Fellow of the Royal Academy of Engineering Knighted, 1996 Awarded Commander of the Order of the British Empire (CBE), 1989 Awarded the Order of the Lion of Finland Awarded the Gold Medal from the Institute of Management Awarded the Mountbatten Medal from the National Electronics Council Awarded the FT ODX Outstanding Director Award, 2019 **Past Positions** Chairman and CEO, ICL Plc, UK CEO and Chairman of the Executive Committee, British Telecommunications Plc Vice President, the British Quality Foundation Director, Mentor Graphics Corp., U.S. Director, Sony Corp., Japan Director, L.M. Ericsson, Sweden Chairman, GlobalLogic Inc., U.S. Senior Advisor, Hampton Group, London Chair of Council and Senior Pro-Chancellor, Loughborough University, UK Board Member, EastWest Institute, New York	Chairman, NXP Semiconductors N.V., the Netherlands Non-Executive Director, Imagination Technologies Group Ltd., UK (a non-public company) Non-Executive Director, Darktrace Plc, UK Advisory Board Member, The Longreach Group Ltd., HK (a non-public company) Senior Advisor, Alix Partners LLP, London Board Mentor, Chairman Mentors International (CMi) Ltd., London (a non-public company)
Independent Director Kok-Choo Chen	Female 71-75	R.O.C.	06/05/2018	07/25/2024	06/09/2011	-	-	-	-	-	-	**Selected Education and Professional Qualification** Inns of Court School of Law, England Barrister-at-law, England Advocate & Solicitor, Singapore Attorney-at-law, California, U.S. **Professional Experience** Lawyer, Tan, Rajah & Cheah, Singapore, 1969-1970 Lawyer, Sullivan & Cromwell, New York, U.S., 1971-1974 Lawyer, Heller, Erhman, White & McAuliffe, San Francisco, California, U.S., 1974-1975 Partner, Ding & Ding Law Offices, R.O.C., 1975-1988 Partner, Chen & Associates Law Offices, R.O.C., 1988-1992 Vice President, Echo Publishing, R.O.C., 1992-1995 President, National Culture and Arts Foundation, R.O.C., 1995-1997 Senior Vice President and General Counsel, TSMC, 1997-2001 Founder and Executive Director, Taipei Story House, 2003-2015 Advisor, Executive Yuan, R.O.C., 2009-2016 Director, National Culture and Arts Foundation, R.O.C., 2011-2016 Chairman, National Performing Arts Center, 2014-2017 **Academic Experience** Lecturer, Nanyang University, Singapore, 1970-1971 Associate Professor, Soochow University, 1981-1998 Chair Professor, National Tsing Hua University, 1999-2002 Professor, National Chengchi University, 2001-2004 Professor, Soochow University, 2001-2008 **Current Positions at Non-profit Organizations** Founder and Executive Director, Museum207 (located in Taipei) Director, Republic of China Female Cancer Foundation	None
Independent Director Michael R. Splinter	Male 71-75	U.S.	06/05/2018	07/25/2024	06/09/2015	-	-	-	-	-	-	**Selected Education and Professional Qualification** Bachelor and Master Degrees in Electrical Engineering, University of Wisconsin-Madison Honorary Ph. D in Engineering, University of Wisconsin-Madison Awarded 2013 Robert N. Noyce Award by Semiconductor Industry Association Recognized as NACD (National Association of Corporate Directors) Directorship Certified™, 2020 **Past Positions** Executive Vice President of Technology and Manufacturing group, Intel Corp. Executive Vice President of Sales and Marketing, Intel Corp. CEO, Applied Materials, Inc. Chairman, Applied Materials, Inc. Director, The NASDAQ OMX Group, Inc. Director, Silicon Valley Leadership Group Director, Semiconductor Equipment and Materials International (SEMI) Director, Meyer Burger Technology Ltd., Switzerland Director, University of Wisconsin Foundation, U.S. **Current Positions at Non-profit Organizations** Chairman of the Board, US-Taiwan Business Council	Chairman of the Board, NASDAQ, Inc. Director of: - Pica8, Inc., U.S. (a non-public company) - Gogoro Inc., Cayman Islands (a non-public company) - Tigo Energy, Inc., U.S. (a non-public company) - Kioxia Holdings Corp., Japan (a non-public company) General Partner, WISC Partners LP, U.S.

(Continued)

Title/Name	Gender Age	Nationality or Place of Registration	Date Elected	Term Expires	Date First Elected	Shares Held When Elected		Shares Currently Held		Shares Currently Held by Spouse & Minors		Selected Education and Professional Qualification Past Positions Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares	%	Shares	%	Shares	%		
Independent Director Moshe N. Gavrielov	Male 66-70	U.S.	06/05/2019	07/25/2024	06/05/2019	-	-	-	-	-	-	Selected Education and Professional Qualification Bachelor Degree in Electrical Engineering, Technion - Israel Institute of Technology Master Degree in Computer Science, Technion - Israel Institute of Technology Past Positions In a variety of engineering and engineering management positions, National Semiconductor Corp. and Digital Equipment Corp., U.S. In a variety of executive management positions, LSI Logic Corp. for nearly 10 years, U.S. CEO, Verisity, Ltd., U.S. Executive Vice President and General Manager of the Verification Division, Cadence Design Systems, Inc., U.S. President and CEO, Xilinx, Inc., U.S. Director, Xilinx, Inc., U.S. Current Positions at Non-profit Organizations Director, San Jose Institute of Contemporary Art, U.S.	Executive Chairman, Wind River Systems, Inc., U.S. (a non-public company) Chairman, SiMa Technologies, Inc., U.S. (a non-public company) Chairman, Foretellix, Ltd., Israel (a non-public company)
Independent Director Yancey Hai	Male 71-75	R.O.C. U.S.	06/09/2020	07/25/2024	06/09/2020	-	-	-	-	-	-	Selected Education and Professional Qualification M.A., International Business Management, University of Texas at Dallas Past Positions Country Manager, GE Capital Taiwan Vice Chairman and CEO, Delta Electronics, Inc. Chair, Strategic Steering Committee, Delta, 2012-2021 Current Positions at Non-profit Organizations Executive Director, Taipei Computer Association Senior Strategy Consultant, Cloud Computing & IoT Association in Taiwan Director, Taiwan Business Council for Sustainable Development Director, Delta Electronic Foundation Director, Felix Chang Foundation	Chairman, Delta Electronics, Inc. (Delta), 2012- Chair of ESG Committee, Delta Director of Delta's subsidiaries: - Delta Electronics (Shanghai) Co., Ltd. (a non-public company) - Delta Networks, Inc. (a non-public company) - Delta Electronics Capital Company (a non-public company) - Cyntec Co., Ltd. (a non-public company) Independent Director, Audit Committee member, Chair and member of Remuneration Committee, and CSR Committee member, USI Corporation Director and Commissioner of ESG & Net Zero Committee, CTCI Corporation
Independent Director L. Rafael Reif (Note 3)	Male 71-75	U.S.	07/26/2021	07/25/2024	07/26/2021	-	-	-	-	-	-	Selected Education and Professional Qualification Ingeniero Eléctrico Degree, Universidad de Carabobo, Valencia, Venezuela Master Degree and Ph.D. in Electrical Engineering, Stanford University Honorary Doctor of Laws degree, The Chinese University of Hong Kong (2015) Honorary Doctorates from Tsinghua University (2016), the Technion (2017) and Arizona State University (2018) Member of Tau Beta Pi, the Engineering Honor Society Member of the Electrochemical Society Fellow of the Institute of Electrical and Electronics Engineers (IEEE) Member of the American Academy of Arts and Sciences, the National Academy of Engineering and the Chinese Academy of Engineering Fellow of the National Academy of Inventors Awarded with United States Presidential Young Investigator Award (1984) Awarded with the Semiconductor Research Corporation's Aristotle Award (2000) Awarded with Engineer of the Year from Great Minds in STEM (2018) Inventor or co-inventor on 13 patents, editor or Co-editor of 5 books, and supervisor to 38 doctoral theses Past Positions Assistant Professor, Universidad Simón Bolívar, Caracas, Venezuela Visiting Assistant Professor of Electrical Engineering, Stanford University Faculty, Massachusetts Institute of Technology (MIT), since 1980 IBM Faculty Fellowship, MIT Center for Materials Science and Engineering; Analog Devices Career Development Professorship, MIT Electrical Engineering. Fariborz Maseeh Professor of Emerging Technology, MIT (2004-2012) Director of Microsystems Technology Laboratories, MIT Associate Department Head of Electrical Engineering, MIT Head of the Department of Electrical Engineering and Computer Science (EECS), MIT Provost, MIT Board Director, Schlumberger Limited Current Positions at Non-profit Organizations President, MIT, since 2012	Co-Chair of Growth Technical Advisory Board, Applied Materials, Inc.

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

Note 1: Major Shareholders of the Institutional Shareholder

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

Note 2: Mr. Ming-Hsin Kung was appointed as the representative of National Development Fund on July 24, 2020.
Note 3: Dr. L. Rafael Reif was elected as TSMC's independent director at TSMC's Annual Shareholders' Meeting on July 26, 2021.

2.4.2 Remuneration Paid to Directors and Independent Directors (Note 1)

Unit: NT$

Title/Name	Director's Remuneration								(A+B+C+D) as a % of Net Income		Compensation Earned by a Director Who is an Employee of TSMC or of TSMC's Consolidated Entities								(A+B+C+D+E+F+G) as a % of Net Income (Note 6)		Compensation Paid to Directors from Non-consolidated Affiliates or Parent Company
	Base Compensation (A)		Severance Pay and Pensions (B) (Note 4)		Compensation to Directors (C)		Allowances (D) (Note 5)				Base Compensation, Bonuses, and Allowances (E) (Note 5)		Severance Pay and Pensions (F) (Note 4)		Profit Sharing (G)						
															From TSMC		From All Consolidated Entities				
	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	Cash	Stock (Fair Market Value)	Cash	Stock (Fair Market Value)	From TSMC	From All Consolidated Entities	
Chairman Mark Liu	16,844,157	16,844,157	212,600	212,600	381,903,540	381,903,540	1,416,161	1,416,161	0.0671%	0.0671%	-	-	-	-	-	-	-	-	0.0671%	0.0671%	-
Vice Chairman C.C. Wei	-	-	-	-	-	-	-	-	-	-	209,137,587	209,137,587	212,600	212,600	190,951,770	-	190,951,770	-	0.0671%	0.0671%	-
Director F.C. Tseng	-	-	-	-	10,560,000	10,560,000	1,294,800	1,294,800	0.0020%	0.0020%	-	-	-	-	-	-	-	-	0.0020%	0.0020%	11,000,643
Director National Development Fund, Executive Yuan Representative: Ming-Hsin Kung	-	-	-	-	10,560,000	10,560,000	-	-	0.0018%	0.0018%	-	-	-	-	-	-	-	-	0.0018%	0.0018%	-
Independent Director Sir Peter L. Bonfield	-	-	-	-	14,754,872	14,754,872	-	-	0.0025%	0.0025%	-	-	-	-	-	-	-	-	0.0025%	0.0025%	-
Independent Director Stan Shih (Note 2)	-	-	-	-	7,487,097	7,487,097	-	-	0.0013%	0.0013%	-	-	-	-	-	-	-	-	0.0013%	0.0013%	-
Independent Director Kok-Choo Chen	-	-	-	-	13,200,000	13,200,000	-	-	0.0022%	0.0022%	-	-	-	-	-	-	-	-	0.0022%	0.0022%	-
Independent Director Michael R. Splinter	-	-	-	-	14,754,872	14,754,872	-	-	0.0025%	0.0025%	-	-	-	-	-	-	-	-	0.0025%	0.0025%	-
Independent Director Moshe N. Gavrielov	-	-	-	-	14,754,872	14,754,872	-	-	0.0025%	0.0025%	-	-	-	-	-	-	-	-	0.0025%	0.0025%	-
Independent Director Yancey Hai	-	-	-	-	13,200,000	13,200,000	-	-	0.0022%	0.0022%	-	-	-	-	-	-	-	-	0.0022%	0.0022%	-
Independent Director L. Rafael Reif (Note 3)	-	-			6,361,376	6,361,376			0.0011%	0.0011%									0.0011%	0.0011%	
Total	16,844,157	16,844,157	212,600	212,600	487,536,629	487,536,629	2,710,961	2,710,961	0.0850%	0.0850%	209,137,587	209,137,587	212,600	212,600	190,951,770	-	190,951,770	-	0.1521%	0.1521%	11,000,643

*Other than disclosure in the above table, Directors remunerations earned by providing services (e.g. providing consulting services as a non-employee of parent company/all consolidated entities/non-consolidated affiliates) to TSMC and all consolidated entities in the 2021 financial statements: Dr. F.C. Tseng for NT$15,119,043.

Note 1: Directors and Independent Directors' remuneration policies, procedures, standards and structure, as well as the linkage to responsibilities, risks and time spent:

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

Note 2: Mr. Stan Shih's tenure expired on July 26, 2021 because he was not re-elected at the 2021 Annual Shareholders' Meeting.
Note 3: Dr. L. Rafael Reif was elected as TSMC's independent director at TSMC's Annual Shareholders' Meeting on July 26, 2021.
Note 4: Pensions funded according to applicable law.
Note 5: The above-mentioned figures include expenses for Company cars and related reimbursements, but do not include compensation paid to Company drivers (totaled NT$4,142,123).
Note 6: Total remuneration paid to the directors from TSMC and from all consolidated entities in 2020, including their employee compensation, both accounted for 0.1832% of 2020 net income.

2.5 Management Team

2.5.1 Information Regarding Management Team

As of 02/28/2022

Title Name	Gender	Nationality	On-board Date (Note 1)	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Education and Selected Past Positions	Selected Current Positions at Other Companies	Managers Who are Spouses or within Second-degree Relative of Consanguinity to Each Other (Note 2)		
				Shares	%	Shares	%	Shares	%			Title	Name	Relation
Chief Executive Officer C.C. Wei	Male	R.O.C.	02/01/1998	5,879,207	0.02%	700,261	0.00%	-	-	Ph.D., Electrical Engineering, Yale University, U.S. President and Co-Chief Executive Officer, TSMC Executive Vice President and Co-Chief Operating Officer, TSMC Senior Vice President, Business Development, TSMC Senior Vice President, Mainstream Technology Business, TSMC Senior Vice President, Chartered Semiconductor Manufacturing Ltd.	None	None	None	None
Senior Vice President Europe & Asia Sales and Human Resources Lora Ho	Female	R.O.C.	06/01/1999	4,570,080	0.02%	2,230,268	0.01%	-	-	Master, Business Administration, National Taiwan University, Taiwan Senior Vice President, Chief Financial Officer/Spokesperson, TSMC Senior Director, Accounting, TSMC Vice President & CFO, TI-Acer Semiconductor Manufacturing Corp.	Director and/or Supervisor, TSMC subsidiaries	None	None	None
Senior Vice President Research and Development Wei-Jen Lo	Male	R.O.C.	07/01/2004	1,441,127	0.01%	-	-	-	-	Ph.D., Solid State Physics and Surface Chemistry, University of California, Berkeley, U.S. Vice President, Technology Development, TSMC Vice President, Manufacturing Technology, TSMC Vice President, Advanced Technology Business, TSMC Vice President, Operations II, TSMC Director, Advanced Technology Development and CTM Plant Manager, Intel Corp.	None	None	None	None
Senior Vice President Corporate Strategy Office CEO & President TSMC Arizona Rick Cassidy	Male	U.S.	11/14/1997	-	-	-	-	-	-	Bachelor, Engineering Technology, United States Military Academy at West Point, U.S. Chief Executive Officer, TSMC North America President, TSMC North America Vice President, TSMC North America	President and CEO, TSMC subsidiary	None	None	None
Senior Vice President Operations Y.P. Chin	Male	R.O.C.	01/01/1987	6,920,122	0.03%	2,191,107	0.01%	-	-	Master, Electrical Engineering, National Cheng Kung University, Taiwan Senior Vice President, Product Development, TSMC Vice President, Advanced Technology and Business, TSMC	Director, TSMC subsidiaries	None	None	None
Senior Vice President Research and Development Y.J. Mii	Male	R.O.C.	11/14/1994	1,000,419	0.00%	-	-	-	-	Ph.D., Electrical Engineering, University of California, Los Angeles, U.S. Vice President, Technology Development, TSMC Senior Director, Platform I Division, TSMC	None	Director	Wayne Yeh	Brother in law
Senior Vice President Information Technology and Materials Management & Risk Management J.K. Lin	Male	R.O.C.	01/01/1987	12,648,251	0.05%	1,019,961	0.00%	-	-	Bachelor, Science, National Changhua University of Education, Taiwan Vice President, Mainstream Fabs and Manufacturing Technology, TSMC Senior Director, Mainstream Fabs, TSMC	None	None	None	None
Senior Vice President Corporate Planning Organization J.K. Wang	Male	R.O.C.	02/11/1987	2,603,947	0.01%	160,844	0.00%	-	-	Master, Chemical Engineering, National Cheng Kung University, Taiwan Senior Vice President, Fab Operations, TSMC Vice President, 300mm Fabs, TSMC Senior Director, 300mm Fabs, TSMC	None	None	None	None
Senior Vice President Europe & Asia Sales and Research & Development/ Corporate Research Cliff Hou	Male	R.O.C.	12/15/1997	384,676	0.00%	60,802	0.00%	-	-	Ph.D., Electrical Engineering, Syracuse University, U.S. Senior Vice President, Technology Development, TSMC Vice President, Design and Technology Platform, TSMC Senior Director, Design and Technology Platform, TSMC	Director and/or President, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Senior Vice President Business Development Kevin Zhang	Male	U.S.	11/01/2016	70,000	0.00%	-	-	-	-	Ph.D., Electrical Engineering, Duke University, U.S. Vice President, Design and Technology Platform, TSMC Vice President, Technology and Manufacturing Group, Intel Corp.	None	None	None	None
Vice President and General Counsel Corporate Governance Officer Legal Sylvia Fang	Female	R.O.C.	03/20/1995	700,285	0.00%	67,906	0.00%	384,000	0.00%	Master, Comparative Law, School of Law, University of Iowa, U.S. Attorney-at-law, Taiwan Associate General Counsel, TSMC Senior Associate, Taiwan International Patent and Law Office (TIPLO)	Director and/or Supervisor, TSMC subsidiaries	None	None	None
Vice President Human Resources Connie Ma	Female	R.O.C.	06/01/2014	236,000	0.00%	-	-	-	-	EMBA, International Business Management, National Taiwan University Director, Human Resources, TSMC Senior Vice President, Global Human Resources, Trend Micro Inc.	None	None	None	None
Vice President Operations/Fab Operations I Y.L. Wang	Male	R.O.C	06/01/1992	218,535	0.00%	1,135,529	0.00%	-	-	Ph.D., Electrical Engineering, National Chiao Tung University, Taiwan Vice President, Fab Operations, TSMC Vice President, Technology Development, TSMC Vice President, Fab 14B, TSMC Senior Director, Fab 14B, TSMC	Director, TSMC subsidiary	None	None	None
Vice President and TSMC Distinguished Fellow Pathfinding for System Integration Doug Yu	Male	R.O.C.	12/28/1994	250,000	0.00%	-	-	-	-	Ph.D., Materials Engineering, Georgia Institute of Technology, U.S. Vice President, Integrated Interconnect & Packaging, TSMC Senior Director, Integrated Interconnect & Packaging Division, TSMC	None	None	None	None
Vice President and TSMC Fellow Operations/Advanced Technology and Mask Engineering T.S. Chang	Male	R.O.C.	02/06/1995	173,781	0.00%	-	-	-	-	Ph.D., Electrical Engineering, National Tsing Hua University, Taiwan Vice President, Product Development, TSMC Vice President, Fab 12B, TSMC Senior Director, Fab 12B, TSMC	None	None	None	None

(Continued)

Title Name	Gender	Nationality	On-board Date (Note 1)	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Education and Selected Past Positions	Selected Current Positions at Other Companies	Managers Who are Spouses or within Second-degree Relative of Consanguinity to Each Other (Note 2)		
				Shares	%	Shares	%	Shares	%			Title	Name	Relation
Vice President Research and Development/Platform Development Michael Wu	Male	R.O.C.	12/09/1996	483,501	0.00%	194,943	0.00%	-	-	Ph.D., Electrical Engineering, University of Wisconsin-Madison, U.S. Senior Director, Platform Development, TSMC	None	None	None	None
Vice President Research and Development/Pathfinding Min Cao	Male	U.S.	07/29/2002	363,152	0.00%	4,470	0.00%	-	-	Ph.D., Physics, Stanford University, U.S. Senior Director, Pathfinding Division, TSMC	None	None	None	None
Vice President Operations/Advanced Packaging Technology and Service Marvin Liao	Male	R.O.C.	06/06/2002	90,485	0.00%	-	-	235,000	0.00%	Ph.D., Materials Science, University of Texas-Arlington, U.S. Senior Director, Backend Technology and Service Division, TSMC Vice President, Chartered Semiconductor Manufacturing Ltd.	Director, TSMC subsidiary	None	None	None
Vice President Operations/Fab Operations II Y.H. Liaw	Male	R.O.C.	08/03/1988	370,000	0.00%	-	-	430,000	0.00%	Master, Chemical Engineering, National Tsing Hua University, Taiwan Vice President, Fab Operations, TSMC Vice President, Fab 15B, TSMC Senior Director, Fab 15B, TSMC	Director, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Vice President Research and Development/Advanced Tool and Module Development Simon Jang	Male	R.O.C.	09/01/1993	350,695	0.00%	663	0.00%	-	-	Ph.D., Materials Science & Engineering, Massachusetts Institute of Technology, U.S. Senior Director, Advanced Tool and Module Development Division, TSMC	None	1. Deputy Director 2. Manager	1. Sharon Jang 2. Jimmy Hu	1. Sister 2. Brother in law
Vice President and Chief Financial Officer Spokesperson Finance Wendell Huang	Male	R.O.C.	05/03/1999	1,651,756	0.01%	-	-	-	-	Master, Business Administration, Cornell University, U.S. Deputy Chief Financial Officer, TSMC Senior Director, Finance Division, TSMC Vice President, Corporate Finance, ING Barings Vice President, Corporate Finance, Chase Manhattan Bank Vice President, Corporate Finance, Bankers Trust Company	Director, Supervisor, and/or President, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Vice President Research and Development/More than Moore Technologies C.S. Yoo	Male	R.O.C.	06/16/1988	1,703,690	0.01%	219,924	0.00%	851,908	0.00%	Ph.D., Chemical Engineering, Worcester Polytech. Institute, U.S. Senior Director, Office of Strategy Customer Program, TSMC Senior Director, E-Beam Operation Division, TSMC	None	None	None	None
Vice President Quality and Reliability Jun He	Male	U.S.	05/22/2017	9,000	0.00%	-	-	-	-	Ph.D., Materials Science and Engineering, University of California, Santa Barbara, U.S. Senior Director, Quality and Reliability, TSMC Senior Director, Head of Quality and Reliability for Technology & Manufacturing Group, Intel Corp.	None	None	None	None
Vice President Research and Development/Platform Development Geoffrey Yeap	Male	U.S.	03/21/2016	22,000	0.00%	-	-	-	-	Ph.D., Electrical and Computer Engineering, University of Texas-Austin, U.S. Senior Director, Platform Development, TSMC Senior Director, Advanced Technology, TSMC Vice President, Engineering, Silicon Technology, Qualcomm	None	None	None	None
Vice President and Chief Information Officer Information Technology and Materials Management & Risk Management/Corporate Information Technology Chris Horng-Dar Lin	Male	U.S.	01/04/2021	16,000	0.00%	-	-	-	-	Ph.D., Electrical Engineering and Computer Science, University of California, Berkeley, U.S. Vice President, Information Technology, Mozilla Director, Enterprise Platform Infrastructure, Facebook	None	None	None	None
Vice President Corporate Planning Organization Jonathan Lee (Note 3)	Male	R.O.C.	05/28/2007	334,458	0.00%	-	-	-	-	Master, Business Administration, City University of New York, Baruch College, U.S. Senior Director, Strategic Planning Division, TSMC	None	None	None	None
Vice President Operations/Facility Arthur Chuang (Note 4)	Male	R.O.C.	01/17/1989	2,602,981	0.01%	1,993,040	0.01%	-	-	Ph.D., Civil Engineering, National Taiwan University, Taiwan Senior Director, Facility Division, TSMC	None	Section Manager	Gavin Chuang	Brother
Vice President and TSMC Fellow Research and Development/Design & Technology Platform L.C. Lu (Note 5)	Male	R.O.C.	08/01/2000	130,227	0.00%	10,000	0.00%	-	-	Ph.D., Computer Science, Yale University, U.S. Senior Director, Digital IPs Solution Division, TSMC	None	None	None	None
Vice President Research and Development/Integrated Interconnect & Packaging K.C. Hsu (Note 6)	Male	R.O.C.	11/01/2021	16,000	0.00%	-	-	-	-	Master, Technology Management, National Chiao Tung University, Taiwan Taiwan Country Manager, Micron Technology Inc. President, WaferTech LLC	None	None	None	None

Note 1: On-board date means the official date joining TSMC.
Note 2: President (or someone with an equivalent job responsibility, i.e. the highest ranking manager of the company) and Chairman are not (1) the same person, (2) in a marital relationship with each other, or (3) within one degree of consanguinity.
Note 3: Mr. Jonathan Lee was promoted to Vice President, effective June 9, 2021.
Note 4: Dr. Arthur Chuang was promoted to Vice President, effective August 10, 2021.
Note 5: Dr. L.C. Lu was promoted to Vice President, effective August 10, 2021.
Note 6: Mr. K.C. Hsu was promoted to Vice President, effective November 9, 2021.

2.5.2 Compensation Paid to CEO and Vice Presidents (Note 1)

Unit: NT$

Title	Name	Salary (A)		Severance Pay and Pensions (B) (Note 6)		Bonuses and Allowances (C) (Note 7)		Profit Sharing (D)				(A+B+C+D) as a % of Net Income (Note 8)		Compensation Received from Non-consolidated Affiliates or Parent Company
								From TSMC		From All Consolidated Entities				
		From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	From TSMC	From All Consolidated Entities	Cash	Stock (Fair Market Value)	Cash	Stock (Fair Market Value)	From TSMC	From All Consolidated Entities	
Chief Executive Officer	C.C. Wei	13,287,420	13,287,420	212,600	212,600	195,850,167	195,850,167	190,951,770	-	190,951,770	-	0.0671%	0.0671%	-
Vice President, Chief Financial Officer/Spokesperson	Wendell Huang	5,240,260	5,240,260	83,844	83,844	28,595,054	28,595,054	27,170,780	-	27,170,780	-	0.0102%	0.0102%	-
Senior Vice President	Lora Ho	122,544,351	137,629,064	1,948,517	2,390,511	861,047,137	964,023,195	812,804,670	-	812,804,670	-	0.3015%	0.3213%	-
Senior Vice President	Wei-Jen Lo													
Senior Vice President/CEO & President of TSMC Arizona	Rick Cassidy													
Senior Vice President	Y.P. Chin													
Senior Vice President	Y.J. Mii													
Senior Vice President	J.K. Lin													
Senior Vice President	J.K. Wang													
Senior Vice President	Cliff Hou													
Senior Vice President	Kevin Zhang													
Vice President and General Counsel/Corporate Governance Officer	Sylvia Fang													
Vice President	Connie Ma													
Vice President	Y.L. Wang													
Vice President and TSMC Distinguished Fellow	Doug Yu													
Vice President and TSMC Fellow	T.S. Chang													
Vice President	Michael Wu													
Vice President	Min Cao													
Vice President	Marvin Liao													
Vice President	Y.H. Liaw													
Vice President	Simon Jang													
Vice President	C.S. Yoo													
Vice President	Jun He													
Vice President	Geoffrey Yeap (Note 2)													
Vice President and Chief Information Officer	Chris Horng-Dar Lin (Note 2)													
Vice President	Jonathan Lee (Note 3)													
Vice President	Arthur Chuang (Note 4)													
Vice President and TSMC Fellow	L.C. Lu (Note 4)													
Vice President	K.C. Hsu (Note 5)													
Total		141,072,031	156,156,744	2,244,961	2,686,955	1,085,492,358	1,188,468,416	1,030,927,220	-	1,030,927,220	-	0.3788%	0.3987%	-

Note 1: Compensation policy, standards/packages, procedures, the linkage to operating performance and future risk exposure: The total compensation paid to the executive officers is based on their job responsibility, contribution, company performance, and projected future risks the Company will face. It is reviewed by the Compensation Committee then submitted to the Board of Directors for approval.
Note 2: Dr. Geoffrey Yeap and Dr. Chris Horng-Dar Lin were promoted to Vice President, effective February 9, 2021. These amounts did not include compensation for the period before their promotion.
Note 3: Mr. Jonathan Lee was promoted to Vice President, effective June 9, 2021. These amounts did not include compensation for the period before his promotion.
Note 4: Dr. Arthur Chuang and Dr. L.C. Lu were promoted to Vice President, effective August 10, 2021. These amounts did not include compensation for the period before their promotion.
Note 5: Mr. K.C. Hsu was promoted to Vice President, effective November 9, 2021. These amounts did not include compensation for the period before his promotion.
Note 6: Pensions funded according to applicable law.
Note 7: The above-mentioned figures include the expense for the business performance bonuses distributed in May, August, November 2021 & February 2022, and Company cars and gasoline reimbursements.
Note 8: Total compensation paid to the executive officers from TSMC in 2020 accounted for 0.3939% of 2020 net income. Total compensation paid to the executive officers from all consolidated entities in 2020 accounted for 0.4131% of 2020 net income.

Compensation Paid to CEO and Vice Presidents

	2021	
	From TSMC	From All Consolidated Entities and Non-consolidated Affiliates
NT$0 ~ NT$999,999	Rick Cassidy	None
NT$1,000,000 ~ NT$1,999,999	None	None
NT$2,000,000 ~ NT$3,499,999	None	None
NT$3,500,000 ~ NT$4,999,999	None	None
NT$5,000,000 ~ NT$9,999,999	K.C. Hsu	K.C. Hsu
NT$10,000,000 ~ NT$14,999,999	None	None
NT$15,000,000 ~ NT$29,999,999	Jonathan Lee, Arthur Chuang, L.C. Lu	Jonathan Lee, Arthur Chuang, L.C. Lu
NT$30,000,000 ~ NT$49,999,999	Simon Jang, Jun He, Geoffrey Yeap, Chris Horng-Dar Lin	Simon Jang, Jun He, Geoffrey Yeap, Chris Horng-Dar Lin
NT$50,000,000 ~ NT$99,999,999	Wendell Huang, J.K. Wang, Kevin Zhang, Sylvia Fang, Connie Ma, Y.L. Wang, Doug Yu, T.S. Chang, Michael Wu, Min Cao, Marvin Liao, Y.H. Liaw, C.S. Yoo	Wendell Huang, J.K. Wang, Kevin Zhang, Sylvia Fang, Connie Ma, Y.L. Wang, Doug Yu, T.S. Chang, Michael Wu, Min Cao, Marvin Liao, Y.H. Liaw, C.S. Yoo
Over NT$100,000,000	C.C. Wei, Lora Ho, Wei-Jen Lo, Y.P. Chin, Y.J. Mii, J.K. Lin, Cliff Hou	C.C. Wei, Lora Ho, Wei-Jen Lo, Rick Cassidy, Y.P. Chin, Y.J. Mii, J.K. Lin, Cliff Hou
Total	29	29

2.5.3 Employees' Profit Sharing Paid to Management Team

Unit: NT$

Title	Name	Stock (Fair Market Value)	Cash	Total	Total Profit Sharing Paid to Management Team as a % of Net Income
Chief Executive Officer	C.C. Wei	-	190,951,770	190,951,770	0.0320%
Vice President, Chief Financial Officer/Spokesperson	Wendell Huang	-	27,170,780	27,170,780	0.0046%
Senior Vice President	Lora Ho				
Senior Vice President	Wei-Jen Lo				
Senior Vice President/ CEO & President of TSMC Arizona	Rick Cassidy				
Senior Vice President	Y.P. Chin				
Senior Vice President	Y.J. Mii				
Senior Vice President	J.K. Lin				
Senior Vice President	J.K. Wang				
Senior Vice President	Cliff Hou				
Senior Vice President	Kevin Zhang				
Vice President and General Counsel/Corporate Governance Officer	Sylvia Fang				
Vice President	Connie Ma				
Vice President	Y.L. Wang				
Vice President and TSMC Distinguished Fellow	Doug Yu				
Vice President and TSMC Fellow	T.S. Chang	-	812,804,670	812,804,670	0.1363%
Vice President	Michael Wu				
Vice President	Min Cao				
Vice President	Marvin Liao				
Vice President	Y.H. Liaw				
Vice President	Simon Jang				
Vice President	C.S. Yoo				
Vice President	Jun He				
Vice President	Geoffrey Yeap (Note 1)				
Vice President and Chief Information Officer	Chris Horng-Dar Lin (Note 1)				
Vice President	Jonathan Lee (Note 2)				
Vice President	Arthur Chuang (Note 3)				
Vice President and TSMC Fellow	L.C. Lu (Note 3)				
Vice President	K.C. Hsu (Note 4)				
Total		-	1,030,927,220	1,030,927,220	0.1728%

Note 1: Dr. Geoffrey Yeap and Dr. Chris Horng-Dar Lin were promoted to Vice President, effective February 9, 2021. These amounts did not include compensation for the period before their promotion.
Note 2: Mr. Jonathan Lee was promoted to Vice President, effective June 9, 2021. These amounts did not include compensation for the period before his promotion.
Note 3: Dr. Arthur Chuang and Dr. L.C. Lu were promoted to Vice President, effective August 10, 2021. These amounts did not include compensation for the period before their promotion. Therefore, their 2020 compensation data are not disclosed.
Note 4: Mr. K.C. Hsu was promoted to Vice President, effective November 9, 2021. These amounts did not include compensation for the period before his promotion.



2016
Begins industry's first production ramp of **10nm** FinFET process technology

2018
Leads industry in producing **7nm** process technology

2019
Leads industry in producing **7nm** process technology with commercially available Extreme Ultraviolet (EUV) lithography technology

2020
Leads industry in producing **5nm** process technology

2021
Industry-leading **3nm** process technology begins risk production

3. Corporate Governance

3.1 Overview

TSMC advocates and acts upon the principles of operational transparency and respect for shareholder rights. We believe that the basis for successful corporate governance is a sound and effective Board of Directors. In line with this principle, the TSMC Board delegates various responsibilities and authority to two Board Committees, Audit Committee and Compensation Committee. Each Committee has a written charter approved by the Board. Each Committee's chairperson regularly reports to the Board on the activities and actions of the relevant committee.

2021 Corporate Governance Awards and Ratings

Organization	Awards
Dow Jones Sustainability Indices (DJSI)	Dow Jones Sustainability World Index for the 21st consecutive year Dow Jones Sustainability Emerging Markets Index
MSCI ESG Indexes	MSCI ACWI ESG Leaders Index component MSCI ESG Research – AAA Ratings MSCI ACWI SRI Index component MSCI Emerging Markets ESG Leaders Index
Sustainalytics	Company ESG Risk Ratings: Low ESG Risk – Semiconductor Industry
ISS ESG	"Prime" Rated by ISS ESG Corporate Rating
FTSE4Good Index	FTSE4Good Emerging Index component FTSE4Good All-World Index component FTSE4Good TIP Taiwan ESG Index component
Corporate Knights	Global 100 Most Sustainable Corporations
RobecoSAM (S&P Global)	The Sustainability Yearbook Award 2021 – Silver Class
TIME Magazine	TIME100 Most Influential Companies
Institutional Investor Magazine	Most Honored Company (Technology/Semiconductors) – All-Asia Best Overall ESG (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia
FORTUNE	2021 World's Most Admired Companies Fortune Global 500
Forbes	The World's Top 10 Largest Technology Companies in 2021 World's Best Employers
FinanceAsia	Best Managed Listed Company
Asiamoney	2021 Asia's Outstanding Companies – Semiconductors & Semiconductor Equipment Sector for the 4th consecutive year
Taiwan Stock Exchange	Top 5% in Corporate Governance Evaluation of Listed Companies for the 7th consecutive year
CommonWealth Magazine	Excellence in Corporate Social Responsibility Award – Large cap – 1st Place
Taiwan Institute of Sustainable Energy	The Most Prestigious Sustainability Awards – Top Ten Domestic Corporates for the 6th consecutive year

3.2 Board of Directors

Board Structure

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

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

Board Responsibilities

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

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

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

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

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

Nomination and Election of Directors

TSMC envisions the membership of its esteemed Board of Directors to be composed of highly ethical professionals with the necessary knowledge, experience and understanding from diverse backgrounds. TSMC establishes the "Guidelines for Nomination of Directors" that set out the procedures and criteria for the nomination, qualification and evaluation of candidates for Directors. In addition, TSMC envisions its Board to be composed of a majority of independent directors, with the independence of each independent director candidate considered and assessed under relevant laws.

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

There are no limits on the number of terms that a director may serve. We believe the Company benefits from the contributions of directors who have over their years of dedicated service acquired unique insights into the operations and financial developments of the Company. The Company reviews the appropriateness of each director's continued service to ensure there are new viewpoints available to the Board.

Directors' Compensation

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

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

Directors' Professional Qualifications and Independent Directors' Independence Status

Criteria / Name/Title	Professional Qualification and Experience	Independent Directors' Independence Status	Number of Other Taiwanese Public Companies Concurrently Serving as an Independent Director
Mark Liu Chairman	For Directors' professional qualification and experience, please refer to "2.4.1 Information Regarding Board Members" on page 20-25 of this Annual Report. None of the Directors has been in or is under any circumstances stated in Article 30 of the Company Law. (Note 1)	Not Applicable	0
C.C. Wei Vice Chairman			0
Ming-Hsin Kung Director			0
F.C. Tseng Director			0
Sir Peter L. Bonfield Independent Director		All of the following situations apply to each and every of the Independent Directors: 1. Satisfy the requirements of Article 14-2 of "Securities and Exchange Act" and "Regulations Governing Appointment of Independent Directors and Compliance Matters for Public Companies" (Note 2) issued by Taiwan's Securities and Futures Bureau 2. Independent Director (or nominee arrangement) as well as his/her spouse and minor children do not hold any TSMC shares 3. Received no compensation or benefits for providing commercial, legal, financial, accounting services or consultation to the Company or to any its affiliates within the preceding two years, and the service provided is either an "audit service" or a "non-audit service"	0
Kok-Choo Chen Independent Director			0
Michael R. Splinter Independent Director			0
Moshe N. Gavrielov Independent Director			0
Yancey Hai Independent Director			1
L. Rafael Reif Independent Director			0

Note 1: A person shall not act in a management capacity for a company, and if so appointed, must be immediately discharged if they have been:
1. Convicted for a violation of the Statutes for the Prevention of Organizational Crimes and: has not started serving the sentence; has not completed serving the sentence; or five years have not elapsed since completion of serving the sentence, expiration of probation, or pardon;
2. Convicted for fraud, breach of trust or misappropriation, with imprisonment for a term of more than one year, and: has not started serving the sentence; has not completed serving the sentence; or two years have not elapsed since completion of serving the sentence, expiration of probation, or pardon;
3. Convicted for violation of the Anti-Corruption Act, and: has not started serving the sentence; has not completed serving the sentence; or two years have not elapsed since completion of serving the sentence, expiration of probation, or pardon;
4. Adjudicated bankrupt or adjudicated to commence a liquidation process by a court, and having not been reinstated to his or her rights and privileges;
5. Sanctioned for unlawful use of credit instruments, and the term of such sanction has not expired yet;
6. if she/he does not have any or limited legal capacity; or
7. if she/he has been adjudicated to require legal guardianship and such requirement has not been revoked yet.

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

Board Diversity and Independence

TSMC establishes the "Guidelines for Nomination of Directors" that set out the procedures and criteria for the nomination, qualification and evaluation of candidates for Directors. The members of TSMC Board of Directors are nominated via rigorous selection processes. It not only considers background diversity, professional competence and experience, but also attaches great importance to his/her personal reputation on ethics and leadership. The Company aims to have at least of 50% independent directors and at least one female director to serve on the Board. Presently, the ten members of the Board of Directors represent diversified perspectives, including a complementary mix of skills, experiences, and backgrounds such as that from the industry, academia, and in law. These professionals, including a female board member, are citizens from Taiwan, Europe and the U.S. with world-class business operating experiences. The six Independent Directors constitute 60% of the Board, and there is no marital or is within the second degree of kinship relationship between or among the Directors. As such, the Board of Directors carries independence. The following table demonstrates the implementation of the diversity policy for Board members:

Implementation of the Diversity Policy for Board Members

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

3.2.1 Audit Committee

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

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

- Financial reports;
- Auditing and accounting policies and procedures;
- Internal control systems and including related policies and procedures;
- Material asset or derivatives transactions;
- Material lending funds, endorsements or guarantees;
- Offering or issuance of any equity-type securities;
- Derivatives and cash investments;
- Legal compliance;
- Related-party transactions and potential conflicts of interests involving executive officers and directors;
- Ombudsman reports;
- Fraud prevention and investigation reports;
- Corporate information security;
- Corporate risk management;
- Performance, independence, qualification of independent auditor;
- Hiring or dismissal of an attesting CPA, or the compensation given thereto;
- Appointment or discharge of financial, accounting, or internal auditing officers;
- Assessment of Committee Charter and fulfillment of Audit Committee duties; and
- Self-assessment of the Committee's performance, etc.

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

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

3.2.2 Compensation Committee

The Compensation Committee assists the Board in discharging its responsibilities related to TSMC's compensation and benefits policies, plans and programs, and in the evaluation and compensation of TSMC's directors of the Board and executives.

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

TSMC's Compensation Committee is authorized by its charter to retain an independent consultant to assist in the evaluation of CEO's or executive officer's compensation.

Information Regarding Compensation Committee Members

Criteria / Name/Title	Professional Qualification and Experience	Independent Directors' Independence Status	Number of Other Taiwanese Public Companies Concurrently Serving as a Compensation Committee Member
Michael R. Splinter (Chair) Independent Director	TSMC's Compensation Committee is comprised of all six independent directors. For members professional qualification and experience, please refer to "2.4.1 Information Regarding Board Members" on page 20-25 of this Annual Report.	All the Compensation Committee members meet any of the following situations: 1. Satisfy the requirements of Article 14-6 of "Securities and Exchange Act" and the requirements of "Regulations Governing the Appointment and Exercise of Powers by the Compensation Committee of a Company Whose Stock is Listed on the Taiwan Stock Exchange or the Taipei Exchange" (Note) issued by Taiwan's Securities and Futures Bureau 2. Independent Director (or nominee arrangement) as well as his/her spouse and minor children do not hold any TSMC shares 3. Received no compensation or benefits for providing commercial, legal, financial, accounting services or consultation to the Company or to any its affiliates within the preceding two years, and the service provided is either an "audit service" or a "non-audit service"	0
Sir Peter L. Bonfield Independent Director			0
Kok-Choo Chen Independent Director			0
Moshe N. Gavrielov Independent Director			0
Yancey Hai Independent Director			1
L. Rafael Reif Independent Director			0

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

3.2.3 Corporate Governance Officer

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

For details on performance of duties by the Corporate Governance Officer, please refer to "3. Corporate Governance" on page 38-63 of this Annual Report.

3.2.4 Director and Committees Members' Attendance

Each Director is expected to attend every Board meeting and the committees meeting on which he or she serves. In 2021, the average Board Meeting attendance rate was 100% and the attendance rate for the Audit Committee and Compensation Committee's Meetings were both 100%.

Board of Directors Meeting Status

TSMC's Chairman of the Board of Directors convened four regular meetings and two special meetings in 2021. The directors' attendance status is as follows.

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Notes
Chairman	Mark Liu	6	0	100%	Renewal of office (Note)
Vice Chairman	C.C. Wei	6	0	100%	Renewal of office (Note)
Director	Ming-Hsin Kung (Representative of National Development Fund, Executive Yuan)	6	0	100%	Renewal of office (Note)
Director	F.C. Tseng	6	0	100%	Renewal of office (Note)
Independent Director	Sir Peter L. Bonfield	6	0	100%	Renewal of office (Note)
Independent Director	Stan Shih	3	0	100%	Term expired (Note)
Independent Director	Kok-Choo Chen	6	0	100%	Renewal of office (Note)
Independent Director	Michael R. Splinter	6	0	100%	Renewal of office (Note)
Independent Director	Moshe N. Gavrielov	6	0	100%	Renewal of office (Note)
Independent Director	Yancey Hai	6	0	100%	Renewal of office (Note)
Independent Director	L. Rafael Reif	3	0	100%	New office assumed (Note)

Annotations:
A. (1) Matters listed in the Securities and Exchange Act §14-3: The Securities and Exchange Act §14-3 is not be applicable because the Company has established the Audit Committee. For relevant information, please refer to the "Audit Committee Meeting Status" in this Annual Report.
(2) There were no other written or otherwise recorded resolutions on which an independent director had a dissenting opinion or qualified opinion in 2021.
B. Recusals of Directors due to conflicts of interests in 2021: Directors recused themselves from the discussion and voting of their compensation resolution.
C. Measures taken to strengthen the functionality of the Board:
- TSMC's Directors are composed of diverse backgrounds, including professional backgrounds in different industries, academic and legal, etc.; nationalities in different countries in Taiwan, Europe and the U.S.; world-class business operating experience; and one Director is female. Our Board has six independent directors who constitute 60% of the Board.
- The Chairman of the Board of Directors is not executive officer of the Company.
- TSMC established "Guidelines for Nomination of Directors", which describes the procedures and criteria for the nomination, qualification and evaluation of candidates for Directors.

Note: TSMC's 15th Board of Directors was elected at TSMC's Annual Shareholders' Meeting on July 26, 2021. Their respective tenures are from July 26, 2021 to July 25, 2024.

Audit Committee Meeting Status

Sir Peter L. Bonfield, Chairman of the Audit Committee, convened four regular meetings and two special meetings in 2021. In addition to these meetings, he also convened one special meeting and three telephone conferences to discuss the Company's Annual Report to be filed with the Taiwan and U.S. authorities and investor conference materials with management. The Committee members and consultant's attendance status is shown in the following table.

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Telephone Conferences	Attendance Rate of Telephone Conferences (%)	Notes
Chair	Sir Peter L. Bonfield	7	0	100%	3	100%	Renewal of office (Note)
Member	Stan Shih	4	0	100%	2	100%	Term expired (Note)
Member	Kok-Choo Chen	7	0	100%	3	100%	Renewal of office (Note)
Member	Michael R. Splinter	7	0	100%	3	100%	Renewal of office (Note)
Member	Moshe N. Gavrielov	7	0	100%	3	100%	Renewal of office (Note)
Member	Yancey Hai	7	0	100%	2	100%	Renewal of office (Note)
Member	L. Rafael Reif	3	0	100%	1	100%	New office assumed (Note)
Financial Expert Consultant	Jan C. Lobbezoo	5	0	100%	3	100%	None

(Continued)

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

Audit Committee Meeting Date	Resolution
2021 1st Regular Meeting February 8	•2020 annual financial statements •2020 business report •2020 fourth quarter earnings distribution •Disposal of a portion of VisEra shares in preparation for its planned IPO •2020 Statement of Internal Control System
2021 1st Special Meeting April 13	•2021 first quarter financial statements
2021 2nd Special Meeting April 22	•Issuance of employee restricted stock awards for year 2021
2021 2nd Regular Meeting June 8	•2021 first quarter business report •2021 first quarter earnings distribution •Related-party sale of existing TSMC equipment to TSMC Nanjing Company Limited •Comfort letter service provided by Deloitte for the U.S. bond issuances •Additional service fee to Deloitte for the issuance of employee restricted stock awards •Amendments to TSMC's internal control related policies and procedures
2021 3rd Regular Meeting August 9	•2021 second quarter financial statements •2021 second quarter business report •2021 second quarter earnings distribution •Ratification of TSMC's security investments classified as non-current assets
2021 4th Regular Meeting November 8	•2021 third quarter financial statements •2021 third quarter business report •2021 third quarter earnings distribution •Ratification of the comfort and consent services, and the additional service and service fee for the review of IFRS 1H'21 financial statement, by Deloitte & Touche for the 4.5 billion U.S. bond issuance •Additional 2021 service fees to Deloitte & Touche for TSMC Japan 3DIC R&D Center & new Japan Fab •2022 service fee and out-of-pocket expense for Deloitte & Touche
Independent directors' objections, reservations or major suggestions: None.	
Resolution of the Audit Committee and the Company's response to the Audit Committee's Opinion: The members of the Audit Committee unanimously approved all the resolutions, and the Board of Directors approved all such resolutions recommended by the Audit Committee.	

(2) There were no other resolutions which was not approved by the Audit Committee but was approved by two thirds or more of all directors in 2021.
B. There were no recusals of independent directors due to conflicts of interests in 2021.
C. Descriptions of the communications between the independent directors, the internal auditors, and the independent auditors in 2021 (which should include the material items, channels, and results of the audits on the corporate finance and/or operations, etc.):
(1) The internal auditors have sent the audit reports to the members of the Audit Committee periodically and presented the findings of all audit reports in the quarterly meetings of the Audit Committee. The head of Internal Audit will immediately report to the members of the Audit Committee any material matters. During 2021, the head of Internal Audit did not report any such material matters. The communication channel between the Audit Committee and the internal auditor functioned well.
(2) The Company's independent auditors have presented the findings of their quarterly review or audits on the Company's financial results. Under applicable laws and regulations, the independent auditors are also required to immediately communicate to the Audit Committee any material matters that they have discovered. During 2021, the Company's independent auditors did not report any irregularity. The communication channel between the Audit Committee and the independent auditors functioned well.
The communications between the independent directors, the internal auditors, and the independent auditors are listed in the table below.

Audit Committee Meeting Date	Communications between the Independent Directors and the Internal Auditors	Communications between the Independent Directors and the Independent Auditors
2021 1st Regular Meeting February 8	•Internal Auditor's report (Closed Door Session) •2020 Audit issue trend analysis (Closed Door Session) •Report on SOX 404 self-testing results for the year 2020 (Closed Door Session) •2020 Statement of Internal Control System (Closed Door Session)	•External auditor relationship (i.e. qualification, performance and independence) •External auditor's report on Project KY Debriefing •Report of regulatory developments •Any audit problems or difficulties and management's response in connection with 2020 annual financial statements (Closed Door Session)
2021 2nd Regular Meeting June 8	•Internal Auditor's report (Closed Door Session) •Amendments to TSMC's internal control related policies and procedures (Closed Door Session)	•The result of 2020 CPA evaluation questionnaire •Report of regulatory developments •Any review problems or difficulties and management's response in connection with 2021 first quarter financial statements (Closed Door Session)
2021 3rd Regular Meeting August 9	•Amendments to 2021 internal audit plan •Internal Auditor's report (Closed Door Session)	•Report of regulatory developments •Any review problems or difficulties and management's response in connection with 2021 second quarter financial statements (Closed Door Session)
2021 4th Regular Meeting November 8	•Internal Auditor's report (Closed Door Session) •2022 internal audit plan (Closed Door Session)	•Report of regulatory developments •Any review problems or difficulties and management's response in connection with 2021 third quarter financial statements (Closed Door Session)
Result: all of the above matters were reviewed and/or approved by the Audit Committee whereupon independent directors raised no objection.		

Note: Sir Peter L. Bonfield, Kok-Choo Chen, Michael R. Splinter, Moshe N. Gavrielov, Yancey Hai and L. Rafael Reif were elected as TSMC's independent director and became member of the Audit Committee on July 26, 2021. Their respective tenures are from July 26, 2021 to July 25, 2024.

Compensation Committee Meeting Status

Mr. Michael R. Splinter, Chairman of the Compensation Committee, convened four regular meetings and two special meetings in 2021. Committee member attendance was as follows:

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Notes
Chair	Michael R. Splinter	6	0	100%	Renewal of office (Note)
Member	Sir Peter L. Bonfield	6	0	100%	Renewal of office (Note)
Member	Stan Shih	3	0	100%	Term expired (Note)
Member	Kok-Choo Chen	6	0	100%	Renewal of office (Note)
Member	Moshe N. Gavrielov	6	0	100%	Renewal of office (Note)
Member	Yancey Hai	6	0	100%	Renewal of office (Note)
Member	L. Rafael Reif	3	0	100%	New office assumed (Note)

Annotations:
A. In 2021, the Compensation Committee conducted four regular meetings on February 8, June 8, August 9 as well as November 8. The Committee also conducted two special meetings on April 22 and July 26. The discussion items were as follows:
- Report on matters related to employee compensation
- Total amount of quarterly business performance bonus
- Total amount of annual profit sharing
- The amount of quarterly business performance bonus for executive officers, CEO and Chairman
- The annual compensation of directors and executive officers, and the disclosure of same in the Annual Report
- Employee restricted stock awards rules for 2021
- Chairperson of the Compensation Committee election

All of the above matters were reviewed and/or approved by the Compensation Committee.
B. In 2021 the Board of Directors adopted all recommendations of the Compensation Committee without modification.
C. There were no written or otherwise recorded resolutions on which any member of the Compensation Committee had a dissenting or qualified opinion.

Note: At the meeting of July 26, 2021, the Board of Directors approved the appointment of all six independent directors, Michael R. Splinter, Sir Peter L. Bonfield, Kok-Choo Chen, Moshe N. Gavrielov, Yancey Hai, and L. Rafael Reif, as members of the Compensation Committee. Their respective tenures are from July 26, 2021 to July 25, 2024.

Board of Directors' Performance Evaluation Implementation Status

Evaluation Cycle	Evaluation Period	Evaluation Scope	Evaluation Method	Evaluation Aspect
Annual	From January 1, 2021 to December 31, 2021	•The Board of Directors as a whole •The individual directors •The Audit Committee	•Internal assessment of the Board •Self-assessments by each board member	The Board of Directors are assessed on the following five aspects: 1. Involvement in the Company's operation 2. Enhancement of the quality of the board's decision-making 3. Makeup and structure of the board 4. Election of board members and continuing knowledge development 5. Internal controls The individual directors are assessed on the following six aspects: 1. Understanding of the Company's goals and mission 2. Awareness of director's duties 3. Involvement in the Company's operations 4. Internal relationship and communication 5. Director's professionalism and continuing knowledge development 6. Internal controls The Audit Committee is assessed on the following five aspects: 1. Involvement in the Company's operation 2. Awareness of the audit committee's duties 3. Enhancement of the quality of the audit committee's decision-making 4. Makeup of the audit committee and election of its members 5. Internal controls

The Company completed self-assessments of Board performance in 2021 and reported the results to the Board of Directors at its first quarter meeting in 2022 for review and improvement. The weighted average score for the overall performance of the Board of Directors is 4.73 out of 5, that included an average score of 4.8 on a particular assessment item "The board has sufficient discussions over the Company's involvement in the implementation of ESG programs". The weighted average score for the performance of the individual directors is 4.85 out of 5. As demonstrated, the overall board's operation has been effective. Members of the Audit Committee's self-assessment results also 100% satisfied with the evaluation criteria.

3.3 Major Decisions of Shareholders' Meeting and Board Meetings

3.3.1 Major Resolutions of Shareholders' Meeting and Implementation Status

TSMC held 2021 Annual Shareholders' Meeting in Hsinchu, Taiwan on July 26, 2021. At the meeting, shareholders present in person or by proxy approved the following resolutions:
(1) The 2020 Business Report and Financial Statements. Consolidated revenue totaled NT$1,339.255 billion and net income was NT$517.89 billion, with diluted earnings per share of NT$19.97;
(2) The revisions to TSMC's "Rules for Election of Director"; and
(3) The issuance of employee restricted stock awards for year 2021.
Directors Election: Election of ten Directors (including six Independent Directors)

Implementation Status

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

The ten newly elected directors were Mark Liu, C.C. Wei, F.C. Tseng, Ming-Hsin Kung (Representative of National Development Fund, Executive Yuan), Sir Peter L. Bonfield (Independent Director), Kok-Choo Chen (Independent Director), Michael R. Splinter (Independent Director), Moshe N. Gavrielov (Independent Director), Yancey Hai (Independent Director), and L. Rafael Reif (Independent Director).

3.3.2 Major Resolutions of Board Meetings

During 2021 and as of the date of this Annual Report, major resolutions approved at Board meetings are summarized below:
(1) Board Meeting of February 8 & 9, 2021:
- approving the 2020 Business Report and Financial Statements;
- approving the distribution of a NT$2.5 per share cash dividend for the fourth quarter of 2020, and setting June 23, 2021 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving distribution of employees' business performance bonus and profit sharing for 2020;
- approving capital appropriations of approximately US$11,794.8 million for purposes including: 1. Fab construction, and installation of fab facility systems; 2. Installation and upgrade of advanced technology capacity; 3. Installation of mature and specialty technology capacity; 4. Installation and upgrade of advanced packaging capacity; 5. Second quarter 2021 R&D capital investments and sustaining capital expenditures;
- approving the establishment of a wholly-owned subsidiary in Japan to expand our 3DIC material research, with a paid-in capital of not more than ¥18.6 billion (approximately US$186 million);
- approving the issuance of unsecured corporate bonds in the domestic market for an amount not to exceed NT$120 billion (approximately US$4.4 billion), and the provision of a guarantee to TSMC Global, a wholly-owned foreign subsidiary of TSMC, for its issuance of US dollar-denominated senior unsecured corporate bonds for an amount not to exceed US$4.5 billion, to finance TSMC's capacity expansion and/or pollution prevention related expenditures;
- approving the sale of up to 39,501,000 common shares of VisEra Technologies Company Ltd. at a price of NT$240 per share to facilitate VisEra's IPO in Taiwan;
- convening the 2021 Annual Shareholders' Meeting, at which shareholders will hold an election for TSMC's 10-member Board of Directors, including 6 independent directors;
- approving the promotion of Dr. Geoffrey Yeap as Vice President; and
- approving the appointment of Dr. Chris Horng-Dar Lin as Vice President and Chief Information Officer of Corporate Information Technology.

(2) Special Board Meeting of April 22, 2021:
- approving the issuance of no more than 2,600,000 common shares of employee restricted stock awards (RSAs) for the year 2021, which will be submitted to the 2021 Annual Shareholders' Meeting for approval; and
- approving capital appropriation of approximately US$2,887.0 million for the purpose of installing mature technology capacity.

(3) Regular Board Meeting of June 8 & 9, 2021:
- in response to the COVID-19 pandemic and relevant orders issued by the government, approving a change to the date of TSMC's 2021 Annual Shareholders' Meeting from June 8, 2021 to July 26, 2021, and the location of the meeting will remain at Ambassador Hotel Hsinchu (10F, No. 188, Section 2, Zhonghua Road, Hsinchu);

- approving the distribution of a NT$2.75 per share cash dividend for the first quarter of 2021, and setting September 22, 2021 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving capital appropriations of approximately US$9,290.7 million for purposes including: 1. Installation and upgrade of advanced technology capacity; 2. Installation of specialty technology capacity; 3. Fab construction, installation of fab facility systems, and capitalized leased assets; 4. Third quarter 2021 R&D capital investments and sustaining capital expenditures; and
- approving the promotion of Mr. Jonathan Lee as Vice President.

(4) Special Board Meeting of July 26, 2021:
- unanimously re-electing Dr. Mark Liu as Chairman and Dr. C.C. Wei as Chief Executive Officer (CEO) and Vice Chairman.

(5) Regular Board Meeting of August 9 & 10, 2021:
- approving the distribution of a NT$2.75 per share cash dividend for the second quarter of 2021, and setting December 22, 2021 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving capital appropriations of approximately US$17,571.66 million for purposes including: 1. Installation of advanced technology capacity; 2. Installation of mature and specialty technology capacity; 3. Installation and upgrade of advanced packaging capacity; 4. Fab construction and installation of fab facility systems; 5. Fourth quarter 2021 R&D capital investments and sustaining capital expenditures;
- ratifying a donation of five million doses of BNT162b2 vaccine to the Taiwan Centers for Disease Control of the Ministry of Health and Welfare to combat the COVID-19 pandemic in Taiwan, and the overall cost for the vaccine which is estimated not to exceed US$175 million when including the vaccine procurement, the necessary cold-chain logistics, handling services, and insurance;
- approving the issuance of US dollar-denominated unsecured corporate bonds in Taiwan's International Bond Market for an amount not to exceed US$1 billion, and approving the provision of a guarantee to TSMC Arizona, a wholly-owned foreign subsidiary of TSMC, for its issuance of US dollar-denominated senior unsecured corporate bonds for an amount not to exceed US$8 billion, to finance TSMC's capacity expansion;
- approving the promotion of Dr. Arthur Chuang as Vice President ; and
- approving the promotion of Dr. L.C. Lu as TSMC Fellow and Vice President.

(6) Regular Board Meeting of November 8 & 9, 2021:
- approving the distribution of a NT$2.75 per share cash dividend for the third quarter of 2021, and setting March 22, 2022 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving capital appropriations of approximately US$9,036.44 million for purposes including: 1. Installation and upgrade of advanced technology capacity; 2. Installation of mature and specialty technology capacity; 3. Installation of advanced packaging capacity; 4. Fab construction, installation of fab facility systems, and capitalized leased assets; 5. First quarter 2022 R&D capital investments and sustaining capital expenditures;
- approving an equity investment of no more than US$2,123.40 million to establish a TSMC-majority-owned subsidiary in Japan to provide foundry services; and
- approving the appointment of Mr. K.C. Hsu as Vice Presidents.

(7) Regular Board Meeting of February 14 & 15, 2022:
- approving the 2021 Business Report and Financial Statements;
- approving the distribution of a NT$2.75 per share cash dividend for the fourth quarter of 2021, and setting June 22, 2022 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
- approving distribution of employees' business performance bonus and profit sharing for 2021;
- approving capital appropriations of approximately US$20,944.17 million for purposes including: 1. Installation and upgrade of advanced technology capacity; 2. Installation of mature and specialty technology capacity; 3. Installation of advanced packaging capacity; 4. Fab construction, and installation of fab facility systems; 5. Second quarter through fourth quarter 2022 R&D capital investments and sustaining capital expenditures;
- approving the issuance of unsecured corporate bonds in the domestic market for an amount not to exceed NT$60 billion (approximately US$2.26 billion), and the issuance of US dollar denominated unsecured corporate bonds in Taiwan's International Bond Market for an amount not to exceed US$1 billion, to finance TSMC's capacity expansion and/or pollution prevention related expenditures;
- approving the issuance of 1,387,000 shares of 2021 employee restricted stock awards (RSAs). In order to offset dilution from the increase of outstanding shares due to the above-mentioned issuance, the board approved a share buyback program for TSMC to buy back its common shares on the Taiwan Stock Exchange. In addition, approving the issuance of no more than 2,960,000 common shares of RSAs for the year 2022, which will be submitted to the 2022 Annual Shareholders' Meeting for approval; and
- convening the 2022 Annual Shareholders' Meeting.

3.3.3 Major Issues of Record or Written Statements Made by Any Director Dissenting to Important Resolutions Passed by the Board of Directors in 2021 and as of the Date of this Annual Report: None.

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

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Explanation	
1. Does Company follow "Taiwan Corporate Governance Implementation" to establish and disclose its corporate governance practices?		V	TSMC has always followed excellent corporate governance practices, provided the utmost in operational transparency and safeguarded shareholders' equity. Although the Company does not have a formal code of practice for corporate governance, however TSMC has always been highly regarded as an industry leader in implementing comprehensive corporate governance practices. In addition, the Company also has a world-class Board of Directors. The Company believes that corporate governance is based on integrity, professional management and implementation. TSMC has been proving its excellent corporate governance in its operating performance and continued winning of domestic and international awards on best corporate governance company.	Same as explanation
2. Shareholding Structure & Shareholders' Rights				None
(1) Does Company have Internal Operation Procedures for handling shareholders' suggestions, concerns, disputes and litigation matters. If yes, has these procedures been implemented accordingly?	V		(1) TSMC has designated appropriate departments, such as Investor Relations Division, Public Relations Department, Shareholders Services & SEC Compliance Department, Legal Department, etc., to handle shareholder suggestions, concerns, disputes or litigation matters.	
(2) Does Company possess a list of major shareholders and beneficial owners of these major shareholders?	V		(2) TSMC tracks the shareholdings of directors, officers, and top ten shareholders.	
(3) Has the Company built and executed a risk management system and "firewall" between the Company and its affiliates?	V		(3) TSMC has set up internal rules in the Company's Internal Control System and Affiliated Corporations Management.	
(4) Has the Company established internal rules prohibiting insider trading on undisclosed information?	V		(4) TSMC has established its "Insider Trading Policy" that applies to all employees, officers and members of the Board of Directors of the Company and to any other person having a duty of trust or confidence, with respect to transactions in the Company's securities. This policy prohibits any insider trading and the Company regularly provides internal training on this issue.	

(Continued)

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Explanation	
3. Composition and Responsibilities of the Board of Directors (1) Has the Board of Directors established a diversity policy, set goals, and implemented them accordingly?	V		(1) Please refer to "3.2 Board of Directors – Board Diversity and Independence" on page 40-41 of this Annual Report.	None
(2) Other than the Compensation Committee and the Audit Committee which are required by law, does the Company plan to set up other Board committees?	V		(2) Audit Committee (founded in 2002); Compensation Committee (founded in 2003); ESG Steering Committee (founded in 2019): is formed by the Company's management team and chaired by Chairman Mark Liu; ESG Committee (founded in 2011): is formed by the Company's executive team and reports quarterly to the Board of Directors on the implementation of plans and results.	
(3) Has the Company established methodology for evaluating the performance of its Board of Directors, on an annual basis, reported the results of performance to the Board of Directors, and use the results as reference for directors' remuneration and renewal?	V		(3) As TSMC's corporate governance concept, the Board of Director's primary responsibility is to supervise, evaluate the management's performance and dismiss officers of the Company when necessary, resolve the important, concrete matters and provide guidance to the management team. TSMC's Board of Directors consists of distinguished members with a great breadth of experience as world-class business leaders or professionals and adhere high ethical standards and commitment to the Company. Each quarter's Board Meeting is last for two days. Company's resolutions are determined in board meeting, also business strategy and future orientation are discussed in the meeting, in order to create best interest for shareholders. Based on TSMC's operating performance and local/international awards of best corporate governance, it certainly proves the Company's excellent performance of Board of Directors. TSMC implemented Board performance evaluations in 2021. Through self-assessment surveys via questionnaire, performance evaluation will be annually completed by the Board as a whole, by individual directors and by the Audit Committee. The Board of Directors are assessed on the following five aspects: 1. Involvement in the Company's operation 2. Enhancement of the quality of the board's decision-making 3. Makeup and structure of the board 4. Election of board members and continuing knowledge development 5. Internal controls The individual directors are assessed on the following six aspects: 1. Understanding of the Company's goals and mission 2. Awareness of director's duties 3. Involvement in the Company's operations 4. Internal relationship and communication 5. Director's professionalism and continuing knowledge development 6. Internal controls The Audit Committee is assessed on the following five aspects: 1. Involvement in the Company's operation 2. Awareness of the audit committee's duties 3. Enhancement of the quality of the audit committee's decision-making 4. Makeup of the audit committee and election of its members 5. Internal controls The Company completed self-assessments of Board performance in 2021 and reported the results to the Board of Directors at its first quarter meeting in 2022 for review and improvement. The weighted average score for the overall performance of the Board of Directors is 4.73 out of 5, that included an average score of 4.8 on a particular assessment item "The board has sufficient discussions over the Company's involvement in the implementation of ESG programs". The weighted average score for the performance of the individual directors is 4.85 out of 5. As demonstrated, the overall board's operation has been effective. Members of the Audit Committee's self-assessment results also 100% satisfied with the evaluation criteria.	
(4) Does the Company regularly evaluate its external auditors' independence?	V		(4) The Audit Committee annually evaluates the independence of external auditors and reports the same to the Board of Directors. Please refer to "3.9.4 Evaluation of the External Auditor's Independence" on page 62 of this Annual Report.	
4. Does the Company appoint competent and appropriate corporate governance personnel and corporate governance officer to be in charge of corporate governance affairs (including but not limited to furnishing information required for business execution by directors, assisting directors' compliance of law, handling matters related to board meetings and shareholders' meetings according to law, and recording minutes of board meetings and shareholders' meetings)?	V		The Board of Directors appointed the Vice President of Legal and General Counsel of TSMC as the Corporate Governance Officer. TSMC's Corporate & Compliance Legal Division, which directly reports to the General Counsel, is in charge of assisting in related affairs, including handling of matters relating to Board, Audit Committee, Compensation Committee and Shareholders' meetings in compliance with law, assistance in onboarding and continuing education of directors, provision of information required for performance of duties by directors, and assistance in directors' compliance of law, etc.	None

(Continued)

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Explanation	
5. Has the Company established a means of communicating with its Stakeholders (including but not limited to shareholders, employees, customers, suppliers, etc.) or created a Stakeholders Section on its Company website? Does the Company respond to stakeholders' questions on corporate responsibilities?	V		Depending on the situation, the Company's Investor Relations Division, Public Relations Department, Shareholders Services & SEC Compliance Department, Human Resources Organization, Customer Service Department and Procurement Department will communicate with stakeholders. We also have publicly disclosed the contact information of our corporate spokesperson and relevant departments. Also, we have a stakeholder section on our corporate website to address our corporate social responsibilities and any other issues. For details, please refer to "7. Environmental, Social and Governance (ESG)" on page 140-163 of this Annual Report and "Materiality Analysis and Stakeholder Communication" of TSMC's Sustainability Report.	None
6. Has the Company appointed a professional registrar for its Shareholders' Meetings?	V		We have appointed China Trust as registrar for our Shareholders' Meetings.	None
7. Information Disclosure (1) Has the Company established a corporate website to disclose information regarding its financials, business and corporate governance status?	V		(1) TSMC discloses its financials business and corporate governance status on its website at http://www.tsmc.com (in Chinese and English). TSMC's American Depositary Receipt (ADR) is listed on the New York Stock Exchange (NYSE). As a foreign issuer, TSMC must comply with NYSE's rules. We have been operating in accordance with NYSE listing standards, and have been disclosing the major differences between our corporate governance practices and U.S. corporate governance practices. Please see https://www.tsmc.com/download/ir/NYSE_Section_303A.pdf.	None
(2) Does the Company use other information disclosure channels (e.g. maintaining an English-language website, designating staff to handle information collection and disclosure, appointing spokespersons, webcasting investors conference etc.)?	V		(2) TSMC has designated appropriate departments (e.g. the Investor Relations Division, Public Relations Department, Shareholders Services & SEC Compliance Department, etc.) to handle the collection and disclosure of information as required by the relevant laws and regulations of Taiwan and other jurisdictions. TSMC has designated spokespersons as required by relevant regulations. TSMC provides live audio webcasts and replays of investor conferences on its website.	
(3) Does the Company announce and report the annual financial statements within two months after the end of the fiscal year, and announce and report the first, second, and third quarter financial statements as well as the operating status of each month before the prescribed deadline?	V		(3) TSMC follows relevant laws and regulations to announce and report the annual financial statements within two months after the end of the fiscal year, and announce and report the first, second, and third quarter financial statements as well as the operating status of each month before the prescribed deadline. Please refer to Market Observation Post System for the aforementioned disclosure.	
8. Has the Company disclosed other information to facilitate a better understanding of its corporate governance practices (e.g. including but not limited to employee rights, employee wellness, investor relations, supplier relations, rights of stakeholders, directors' training records, the implementation of risk management policies and risk evaluation measures, the implementation of customer relations policies, and purchasing insurance for directors)?	V		(1) For employee rights and employee wellness, please refer to "5.6 Human Capital" on page 104-111 of this Annual Report. (2) For investor relations, supplier relations and rights of stakeholders, please refer to "7. Environmental, Social and Governance (ESG)" on page 140-163 of this Annual Report. (3) For Directors' training records, please refer to "Continuing Education/Training of Directors in 2021" on page 51-52 of this Annual Report. (4) For Risk Management Policies and Risk Evaluation, please refer to "6.3 Risk Management" on page 125-137 of this Annual Report. (5) For Customer Relations Policies, please refer to "5.4 Customer Trust" on page 100-102 of this Annual Report. (6) TSMC maintains D&O Insurance for its directors and officers.	None
9. The improvement status for the result of Corporate Governance Evaluation announced by Taiwan Stock Exchange TSMC was ranked in top 5% in Corporate Governance Evaluation over the years. The improvement status in 2021 is as follows: (1) Performance evaluation of the Board of Directors: TSMC has conducted Board performance evaluations on an annual basis since 2020. The Company completed self-assessments of Board performance in 2021 and reported the results to the Board of Directors at its first quarter meeting in 2022 for review and improvement. (2) ESG Report: TSMC's ESG Report has been reported to the Board of Directors in increasing regularity from semiannual to quarterly. (3) TSMC's intellectual property management received a AAA (the highest tier) certificate by Taiwan Intellectual Property Management System (TIPS) in December 2021, valid for 3 years.				

Continuing Education/Training of Directors in 2021

The major training methods of Directors include:

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

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

Name	Date	Host by	Training/Speech Title	Duration
Mark Liu (Note)	04/06	Taipei Computer Association	"Taiwan Climate Alliance" Preparation Meeting	1.5 hours
	04/21	Economy Daily News	2021 Master's Mind Forum – New Economy, Opportunities, and Challenges	2.5 hours
	05/11	IEEE	2021 VIC (Vision, Innovation, and Challenges) Summit and Honors Ceremony	2 hours
	06/02	World Semiconductor Council (WSC)	WSC Meeting	2 hours
	09/09 09/16	Asia Business Council	2021 Autumn Forum •Round-Robin Discussion •Investing Sustainably: Purpose, People and Planet •What will Asia look like in 2030?	4.5 hours
	09/30	CommonWealth Magazine	2021 Excellence in Corporate Social Responsibility Lecture and Award Ceremony	1.5 hours
	10/22	Asian Business Council and the Cambridge Institute for Sustainability Leadership	Event on COP26 and the Race to Zero: How Asian Companies Can Contribute to a Zero-Carbon World	1.5 hours
	10/27	Taiwan Semiconductor Industry Association	2021 TSIA Annual Online Convention: Digital Transformation for Company and Enterprise	1.5 hours
	11/26	Taiwan Federation of Industry	Sustainable Development Research Committee	2 hours
	12/03	K.T. Li Foundation for Development of Science and Technology	2021 K.T. Li Memorial Forum: Road to a New Century in Taiwan Semiconductor Industry	4 hours
F.C. Tseng	11/23	Accounting Research and Development Foundation	Various Perspectives on New Policies of Sustainable Development, Climate Governance and Low-Carbon Management	6 hours
Moshe N. Gavrielov	09/15-17	McKinsey & Company	T-30 From unprecedented disruption…to unprecedented innovation	16 hours
Yancey Hai	02/24	Taiwan Corporate Governance Association	From the fragmentation and reconstruction of the American dream-The future of Taiwan/US/China trilateral relations	3 hours
	07/29	Taiwan Corporate Governance Association	Directors' duties and responsibilities	3 hours

Note: Selected speeches on corporate governance and related topics.

Continuing Education Training of Corporate Governance Officer in 2021

Name	Date	Host By	Training/Speech Title	Duration
Vice President and General Counsel Corporate Governance Officer Sylvia Fang	02/05	Ministry of Economic Affairs, R.O.C.	Prospect of Taiwan-U.S. Supply Chain Cooperation on Semiconductor Roundtable	2 hours
	09/17	Taiwan Corporate Governance Association	Quickly Interpret and Prepare the ESG Disclosure Requirements of Corporate Governance 3.0	3 hours
	09/29	Taiwan Semiconductor Industry Association (TSIA)	Sharing the Relevant Practices of the Company's Trade Secret Protection at TSIA Board of Directors and Supervisors Meeting	1 hour
	10/06	Ministry of Science and Technology, R.O.C. Ministry of Justice, R.O.C.	2021 Foreign Company and Enterprise Integrity Forum—A Technology-empowered Future and Compliance & Integrity in the Age of Globalization	3 hours
	12/10	Intellectual Property Office, Ministry of Economic Affairs, R.O.C. Taiwan Association for Trade Secret Protection	2021 Trade Secret Protection Practice Conference	5 hours

3.5 Code of Ethics and Business Conduct

Ethics at TSMC

"Integrity" is TSMC's most important core value. TSMC strictly adheres to the highest standards of integrity and promotes good ethical behavior to sustain the hard-earned trust and confidence of its shareholders, customers, suppliers, employees and the general public – constantly and vigilantly promoting integrity, fairness, and transparency in all that we say and do. We have zero tolerance for corruption, refrain from bribery, fraud, embezzlement of corporate assets, and prohibit the advancement of personal interests at the expense of or in conflict with TSMC. At the heart of our corporate governance culture is the "TSMC Ethics and Business Conduct Policy" (Ethics Code). The Ethics Code requires that each employee bear a heavy personal responsibility to preserve and to protect TSMC's ethical values and reputation. At the same time, we have formulated the "TSMC's Supplier Code of Conduct" as well to ensure our suppliers understand and follow the Ethics Code and together fulfill our corporate social responsibilities.

Specifically, every TSMC employee must adhere to the following:

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

Intellectual Property Protection: In order to build and sustain an environment of innovation, technology leadership, and sustainable profitable growth, the Ethics Code requires that TSMC promote business relationships founded upon an unwavering respect for the intellectual property rights, proprietary information and trade secrets of TSMC, our customers, and others.

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

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

Ethics Code Implementation

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

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

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

Training and Promotion: To promote awareness to our employees of their responsibilities under the Ethics Code, we publish our Ethics Code and related policies and documents on our intranet and, provide training courses, posters, emails, and internal news articles. In terms of training courses, TSMC not only provides annual online course on the Ethics Code and requires all employees to complete the training, as well as face-to-face training courses delving into more specific ethics-related topics for targeted employees. In 2021, there were 59,366 attendances that completed the"Annual Ethics and Compliance Training Course" (mandatory 0.5 hour online course) at TSMC and its subsidiaries, reaching 99.9% completion rate.

In addition to our internal compliance efforts, we expect and assist our business partners such as customers and suppliers, and any other entities with whom we deal (include

consultants or third party agents who act for or on behalf of TSMC) to recognize and understand TSMC's ethical standards to fulfill our responsibilities as a corporate citizen. For instance, we require all of our suppliers to declare in writing that they will respect and comply with TSMC's ethical standards and culture. TSMC is a full member of the Responsible Business Alliance (RBA, formerly the (Electronic Industry Citizenship Coalition, EICC)), dedicated to global supply chain sustainability. In addition to adopting the RBA Code of Conduct at all of its facilities, TSMC applied the RBA's standards to enhance our audit program of our suppliers and relevant business partners. We provide training and communicate our ethical culture to our suppliers through live seminars and online programs to prevent any unethical conduct and detect any sign of Ethics Code violations. In 2021, we held a sustainable supply chain ESH forum to share/exchange practical experiences on topics such as the Ethics Code, environmental protection, and occupational safety. In total, 229 attendees from 102 suppliers participated (including through online meeting) in these activities. We also exchange views on appropriate business conduct and TSMC's ethical standards and implementation status with our customers as part of customer audit programs.

Reporting Channels and Whistleblower Protection

TSMC has established and published its "Complaint Policy and Procedure for Certain Accounting & Legal Matters" and pledges to comply with the relevant regulations in the policy. Open and multiple reporting channels are available for internal and external voices to protect the rights and interests of stakeholders and the Company. All reported incidents collected from reporting channels inside or outside of TSMC are properly recorded and traced. TSMC also prohibits any form of retaliation by providing proper protection for any individual who in good faith reports a suspected violation or participates in an investigation. In 2021, the Ethics Committee held a total seven meetings to examine major reported incidents under investigation.

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

In 2021, TSMC did not receive any reports related to finance, accounting or antitrust matters, nor did we receive any complaints concerning breach of customer privacy and loss of customer data, or any material regulatory violations (where a fine exceeds NT$1 million).

In 2021, the incidents reported through the Audit Committee Whistleblower System, Ombudsman System, and Irregular Business Conduct Reporting System totaled 327. Among them, 207 cases were related to people management/employee relations, 103 cases were categorized as others (e.g., asking personal questions or private matters), and 17 cases were related to ethics. Four incidents were verified upon investigation and determined for disciplinary action by the Ethics Committee. In 2021, TSMC leveraged the four violations to strengthen ethics promotion for all employees in supplier-related activities. Below is a summary of the number of reported incidents.

Year	FY2017	FY2018	FY2019	FY2020	FY2021
Total reported cases	113	150	205	246	327
Ethics-related cases	20	14	26	22	17
Cases investigated and verified as ethics violations	4	1	2	6	4 (Note 1)
Sexual Harassment Investigation Committees Formed	7	3	4	4	14
Cases investigated and verified as violations	3	3	4	2	11 (Note 2)

Note 1: Of the four verified cases: One incident involved an employee who failed to complete equipment test as scheduled and asked a vendor to falsify the completion test report. The employee was dismissed. One incident involved several employees who misused company resources for personal gains or facilitated the misuse of those resources. The company took progressive disciplinary actions according to the nature and severity of each misconduct, including dismissal for some employees. One incident involved an employee who approached vendors for business without authorization in pursuit of personal interest. The employee was dismissed. One incident involved an employee who mistreated certain vendors and received a warning.

Note 2: Employees who violated Company sexual prevention policy were disciplined by the Company based on the case-by-case nature and severity of the verified misbehaviors. Since these violations involved various inappropriate behaviors, company leveraged the violations to educate employees what kinds of behaviors could be viewed as sexual harassment and the consequences in 2021 TMSC annual sexual harassment prevention training so as to raise employees' awareness.

Ethics Code Violation Disciplinary Action

We do not tolerate any violation of the Ethics Code and treat every possible violation incident seriously. Each violator of the Ethics Code (or relevant regulations) will be severely disciplined to the full extent of our policies and the law, up to and including immediate dismissal, termination of business relationship, and judicial prosecution as appropriate.

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

Assessment Item	Implementation Status			Causes for the Difference
	Yes	No	Summary	
1. Establishment of Corporate Conduct and Ethics Policy and Implementation Measures				None
(1) Does the company have a clear ethical corporate management policy approved by its Board of Directors, and bylaws and publicly available documents addressing its corporate conduct and ethics policy and measures, and commitment regarding implementation of such policy from the Board of Directors and the top management team?	V		(1) Integrity is the most important core value of TSMC's culture. TSMC is committed to acting ethically in all aspects of our business. We have established TSMC Code of Ethics and Business Conduct (the "Ethics Code") to require that each employee bears a heavy personal responsibility to uphold TSMC's ethics value. For more details on the Ethics Code and the measures that TSMC Board of Directors (the "Board") and the management team take to ensure compliance of the Ethics Code please refer to TSMC's Annual Report and the Sustainability Report.	
(2) Whether the company has established an assessment mechanism for the risk of unethical conduct; regularly analyzes and evaluates within a business context, the business activities with a higher risk of unethical conduct; has formulated a program to prevent unethical conduct with a scope no less than the activities prescribed in paragraph 2, Article 7 of the Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies?	V		(2) At the heart of our corporate governance culture is the Ethics Code that applies to TSMC and its subsidiaries, and this Ethics Code requires that each employee bears a heavy personal responsibility to preserve and to protect TSMC's ethical values and reputation and to comply with various applicable laws and regulations. Specific requirements under the Ethics Code could be found in our Annual Report. In addition, to educate and remind our employees of their responsibilities under the Ethics Code, we publish our Ethics Code, relevant policies and documents on our intranet and promote its awareness through training courses, posters, emails, and internal news articles. Furthermore, to ensure that our conduct meets relevant legal requirements and the highest ethical standards under the Ethics Code, TSMC provides multiple channels for reporting business conduct concerns. Please refer to Assessment Item 3 for details. We do not tolerate any violation of the Ethics Code and treat every possible violation incident seriously. Each violator of the Ethics Code (or relevant regulations) will be severely disciplined to the full extent of our policies and the law, up to and including immediate dismissal, termination of business relationship, and judicial prosecution as appropriate.	
(3) Whether the company has established relevant policies that are duly enforced to prevent unethical conduct, provided implementation procedures, guidelines, consequences of violation and complaint procedures, and periodically reviews and revises such policies?	V		(3) Under the framework of the Ethics Code, TSMC has established a regulatory compliance program that includes policies, guidelines and procedures in other policy areas, including: Corporate Governance, Securities Laws, Anti-corruption, Anti-harassment, Anti-discrimination, Labor Laws, Anti-trust (unfair competition), Environmental Protection, Safety and Health, Export Control, Financial Reporting, Insider Trading, Intellectual Property, Proprietary Information Protection (PIP), Personal Data Protection, Record Retention and Disposal, as well as procuring certain raw materials from socially responsible sources (Conflict-free Minerals). The above-mentioned policies are crucial in facilitating overall compliance with the Ethics Code. TSMC provided an "Annual Ethics and Compliance Training Course" (mandatory 0.5 hour online course) covering various important regulatory compliance topics and a total of 59,366 (99.9% completion rate) employees (including employees in subsidiaries) completed this training course. TSMC, its employees and its subsidiaries are expected to fully understand and comply with all laws and regulations that govern our businesses, as well as relevant policies, guidelines and procedures, and make ethical decisions in every circumstance. The Internal Auditor of TSMC also plays a critical role in ensuring the Company's compliance with the Ethics Code and relevant rules and regulations. To ensure that our financial, managerial, and operating information is accurate, reliable, and timely and that our employee's actions are in compliance with applicable policies, standards, procedures, laws and regulations, our Internal Auditor conducts audits of various control points within the Company in accordance with its annual audit plan approved by the Board of Directors and subsequently reports its audit findings and remedial issues to the Board and Management on a regular basis.	

(Continued)

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

(Continued)

Assessment Item	Implementation Status			Causes for the Difference
	Yes	No	Summary	
4. Information Disclosure Does the company disclose its guidelines on business ethics as well as information about implementation of such guidelines on its website and Market Observation Post System (MOPS)?	V		TSMC provides the guidelines and informative articles related to ethics and honorable business conduct on its internal website (in both Chinese and English) for employees' easy access. In addition, TSMC posts its Annual Report (which is also available at the MOPS) and Sustainability Report on its external website (in both Chinese and English, available at: http://www.tsmc.com) to disclose TSMC Ethics Code and the information about implementation of the Ethics Codes.	None
5. If the company has established corporate governance policies based on Ethical Corporate Management Best Practice Principles for TWSE/GTSM Listed Companies, please describe any discrepancy between the policies and their implementation. TSMC has established the Ethics Code to require that all employees, officers and board members comply with the Ethics Code and the other policies and procedures. There is no discrepancy between the Ethics Code, including its affiliate policies and procedures, and its implementation. For more details, please refer to "3.5 Code of Ethics and Business Conduct" on page 52-57 of this Annual Report.				
6. Other important information to facilitate better understanding of the company's corporate conduct and ethics compliance practices (e.g., review the company's corporate conduct and ethics policy). In 2021, TSMC added the "anti-intimacy" clause to its "Ethics Code" to maintain the professional workplace environment with the highest ethical standards. For the others regarding details on the implementation of TSMC's corporate conduct and ethics, please refer to "3.5 Code of Ethics and Business Conduct" on page 52-57 of this Annual Report.				

3.6 Regulatory Compliance

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

Legislative Monitoring

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

Policy and Compliance Program Development and Implementation

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

Compliance Awareness Training

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

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

Reporting Channels

TSMC provides multiple channels for reporting business conduct concerns to ensure that our conduct meets relevant legal requirements and the highest ethical standards under the Ethics Code. For more details about the reporting channels, please refer to "3.5 Code of Ethics and Business Conduct" on page 52-57 of this Annual Report.

Major Accomplishments

In 2021, TSMC achieved several major accomplishments in regulatory compliance. Externally, in addition to fulfilling the Company's obligations toward regulatory compliance matters, TSMC exercised its civic duties as a responsible corporate citizen by providing feedback on current regulations and regulations in legislation, with the intent to improve Taiwan's industrial investment environment, enhance economic development, and help align domestic laws with international law. Furthermore, TSMC continues to focus on the topics related to the Company Law, the Securities and Exchange Act, intellectual property protection and environment protection. In addition, TSMC assisted government agencies to promote trade secrets and its protection regulations, and shared TSMC's practices and experiences on labor rights, regulatory compliance system and reporting channel with outside institutions.

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

- Ethics and Compliance: TSMC provided an "Annual Ethics and Compliance Training Course" (mandatory 0.5 hour online course) covering various important regulatory compliance topics and a total of 59,366 employees (including employees in subsidiaries) completed this training course (99.9% completion rate) – with all production staffs were starting from 2019.
- Export Compliance: TSMC's export management system (EMS) and policy have been in place for a number of years. It aims to ensure that TSMC and its subsidiaries comply with all applicable regulations covering the export of information, technologies, products, materials and equipment. TSMC's EMS was certified in September 2012 by the Bureau of Foreign Trade, the Taiwan regulator, as a qualified ICP (Internal Compliance Program) exporter. In 2021, TSMC successfully extended the validity period of its ICP certificate to October 2024. In addition, TSMC implements "No ECCN, No Shipment" control and customers are required to provide end use and export control classification number (ECCN) of their products, among other required information, for TSMC to apply for applicable export licenses. To further enhance relevant employees' awareness of the export control requirements, in 2021 TSMC altogether provided 6 on-line meeting sessions and a targeted on-line learning program to employees in relevant functions – a total of 2,895 employees completed the program as requested.
- Supplier Management: TSMC shares and exchanges practical experiences with suppliers with sales offices in Taiwan by holding a sustainable supply chain ESH forums on topics such as Ethics Code, environmental protection and occupational safety. In total, 229 attendees from 102 suppliers were participated (including through on-line meeting) in these activities even during the pandemic.
- Conflict-Free Supply Chain: As a recognized global leader in the Hi-tech supply chain, we acknowledge our corporate social responsibility to strive to procure conflict-free minerals in an effort to recognize humanitarian and ethical social principles that protect the dignity of all persons. Meanwhile, we have implemented a series of compliance safeguards in accordance with industry leading practices, requesting suppliers to fill in the "Conflict Minerals Reporting Template" and sign the "TSMC Conflict-Free Minerals Declaration" every year. TSMC will continuously make progress to ensure a conflict-free supply chain.
- Personal Data Protection: Because of the importance of personal data protection, TSMC periodically reviews the Rules of Privacy and Personal Data Protection and external and internal privacy policies to identify the needs to update such documents. Based on current personal data protection laws and risks, TSMC conducts an annual training on privacy and personal data protection to enhance employees' awareness and compliance. In addition, the Personal Data Protection Committee composed of Legal, Human Resources, and IT divisions convene on an annual basis to assist the implementation of and monitoring compliance with the rules.
- Antitrust Compliance: Based on annual antitrust risk assessment results, TSMC identified functions with potential higher risk from an antitrust perspective. To enhance targeted functions' employee awareness of the importance of competition and antitrust laws and issues during daily operations, TSMC established antitrust training programs and conducted several antitrust trainings, via either face-to-face onsite training sessions or on-line learning programs, for global sales personnel and employees in relevant departments at Taiwan, United States, Europe, Japan, Korea and mainland China areas – a total of 1,276 employees completed the on-line program as requested.
- Insider Trading Compliance: To implement insider trading regulatory compliance, TSMC revisited and updated training material of the insider trading on-line program (0.5 hour-length course), and designated managers at Operations Organizations as trainees – a total of 2,446 managers completed this on-line program as requested. Each year going forward, TSMC will designate employees from different departments to take insider trading on-line program to strengthen employees' awareness and compliance with insider trading laws.

3.7 Internal Control System Execution Status

3.7.1 Statement of Internal Control System

Taiwan Semiconductor Manufacturing Company Limited

Statement of Internal Control System

February 15, 2022

Based on the findings of a self-assessment, Taiwan Semiconductor Manufacturing Company Limited (TSMC) states the following with regard to its internal control system during the year 2021:

1. TSMC's Board of Directors and management are responsible for establishing, implementing, and maintaining an adequate internal control system. Internal control system is designed to provide reasonable assurance over the effectiveness and efficiency of our operations (including profitability, performance and safeguarding of assets), reliability, timeliness, transparency and regulatory compliance of our reporting, and compliance with applicable rulings, laws and regulations.
2. An internal control system has inherent limitations. No matter how perfectly designed, an effective internal control system can provide only reasonable assurance of accomplishing its stated objectives. Moreover, the effectiveness of an internal control system may be subject to changes due to extenuating circumstances beyond our control. Nevertheless, our internal control system contains self-monitoring mechanisms, and TSMC takes immediate remedial actions in response to any identified deficiencies.
3. TSMC evaluates the design and operating effectiveness of its internal control system based on the criteria provided in the Regulations Governing the Establishment of Internal Control Systems by Public Companies (herein below, the "Regulations"). The criteria adopted by the Regulations identify five key components of managerial internal control: (1) control environment, (2) risk assessment, (3) control activities, (4) information and communication, and (5) monitoring activities. Each component also includes several items which can be found in the Regulations.
4. TSMC has evaluated the design and operating effectiveness of its internal control system according to the aforesaid Regulations.
5. Based on the findings of such evaluation, TSMC believes that, on December 31, 2021, it has maintained, in all material respects, an effective internal control system (that includes the supervision and management of our subsidiaries), to provide reasonable assurance over our operational effectiveness and efficiency, reliability, timeliness, transparency and regulatory compliance of reporting, and compliance with applicable rulings, laws and regulations.
6. This Statement is an integral part of TSMC's annual report and prospectus, and will be made public. Any falsehood, concealment, or other illegality in the content made public will entail legal liability under Articles 20, 32, 171, and 174 of the Securities and Exchange Law.
7. This Statement was passed by the Board of Directors in their meeting held on February 15, 2022, with none of the ten attending directors expressing dissenting opinions, and the remainder all affirming the content of this Statement.

Taiwan Semiconductor Manufacturing Company Limited



Mark Liu,
Chairman



C.C. Wei,
Chief Executive Officer

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

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

3.8.1 Resignation or Dismissal of Chairman, President, and Heads of Accounting, Finance, Internal Audit, Corporate Governance Officer and R&D in 2021 and as of the Date of this Annual Report: None.

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

Certification	Number of Employees	
	Internal Audit	Finance
Certified Public Accountants (CPA)	2	44
US Certified Public Accountants (US CPA)	3	12
Certified Internal Auditor (CIA)	13	3
Chartered Financial Analyst (CFA)	-	2
Certified Management Accountant (CMA)	-	2
Financial Risk Manager (FRM)	-	1
Certificate in Financial Management (CFM)	-	1
Certification in Control Self-Assessment (CCSA)	2	-
Certification in Risk Management Assurance (CRMA)	3	-
Certified Information Systems Auditor (CISA)	7	-
Certified Fraud Examiner (CFE)	2	-
BS7799/ISO 27001 Lead Auditor	2	-

3.9 Information Regarding TSMC's Independent Auditor

3.9.1 Audit Fees

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

Unit: NT$ thousands

Accounting Firm	Name of CPA	CPA's Audit Period	Audit Fee	Non-audit Fee (Note)	Total	Remark
Deloitte & Touche	Mei-Yen Chiang, Shang-Chih Lin, and others	01/01/2021 – 12/31/2021	60,122	27,021	87,143	-

Note: The fees were mainly related to the bond offering that was borne by the underwriter and audit of annual income tax returns.

3.9.2 CPA's information

(1) Former CPAs

Date of Change	Approved by BOD on November 10, 2020		
Reasons and Explanation of Changes	In compliance with regulatory requirements on rotation, the co-signing partner Yu-Feng Huang will be replaced by Shang-Chih Lin starting from 2021. The engagement partner will remain to be Mei-Yen Chiang.		
State Whether the Appointment is Terminated or Rejected by the Consignor or CPAs	Client / Status	CPA	Consignor
	Appointment terminated automatically	Not available	Not available
	Appointment rejected (discontinued)	Not available	Not available
The Opinions Other than Unmodified Opinion Issued in the Last Two Years and the Reasons for the Said Opinions	None		
Is There Any Disagreement in Opinion with the Issuer	Yes		Accounting principle or practice
			Disclosure of financial statements
			Auditing scope or procedures
			Others
	No	v	
	Explanation		
Supplementary Disclosure (Disclosures Specified in Article 10.6.1.4~7 of the Standards)	None		

(2) Successor CPAs

Accounting Firm	Deloitte & Touche
CPA	Mei-Yen Chiang and Shang-Chih Lin
Date of Engagement	Approved by BOD on November 10, 2020
Prior to the Formal Engagement, Any Inquiry or Consultation on the Accounting Treatment or Accounting Principles for Specific Transactions, and the Type of Audit Opinion that Might be Rendered on the Financial Report	None
Written Opinions from the Successor CPAs that are Different from the Former CPA's Opinions	None

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

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

3.9.4 Evaluation of the External Auditor's Independence

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

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

3.10 Material Information Management Procedure

TSMC has established relevant procedures for managing and disclosing material information. The responsible departments regularly remind all officers and employees about the need to comply with these procedures and other applicable regulations when they become aware of any potential material information and the possible need to publicly disclose such information. To ensure that our employees, managers and board directors are aware of and comply with these relevant regulations, TSMC has also established our "Insider Trading Policy". To reduce the risk of insider trading, on-line training programs is conducted periodically. In addition, employees can familiarize themselves with relevant internal policies and training articles by accessing TSMC intranet website.

1987
Enters market with **3.0-micron** and **2.5-micron** process technologies

1999
First foundry to offer **0.18-micron** copper technology

2002
Establishes "TSMC Academy"

2005
Leads industry in successfully producing **65nm** chips

2008
Launches "Open Innovation Platform®"

2011
Becomes first in the industry to begin mass production with **28nm** process technology

4. Capital and Shares

4.1 Capital and Shares

4.1.1 Capitalization

Unit: Share/NT$ As of 02/28/2022

Face Value Per Share	Authorized Share Capital		Capital Stock		Remark
	Shares	Amount	Shares	Amount	
10	28,050,000,000	280,500,000,000	25,930,380,458	259,303,804,580	•No change in Authorized Share Capital and Capital Stock in 2021 and as of 02/28/2022 •The Board of Directors approved the issuance of 1,387,000 common shares for 2021 Employee Restricted Stock Awards and set 03/01/2022 as the record date. In order to offset dilution from the increase of outstanding shares due to the above-mentioned issuance, the Board approved a share buyback program for TSMC to buy back its common shares on the Taiwan Stock Exchange. The shares purchased will be cancelled subsequently. •TSMC has completed 1,387,000 shares buyback as of 02/25/2022.

4.1.2 Capital and Shares

Unit: Share As of 02/28/2022

Type of Stock	Authorized Share Capital		Total
	Listed Shares	Unissued Shares	
Common Stock	25,930,380,458	2,119,619,542	28,050,000,000

Shelf Registration in Taiwan: None.

4.1.3 Composition of Shareholders

Common Share As of 12/22/2021 (Note)

Type of Shareholders	Government Agencies	Financial Institutions	Other Juridical Persons	Foreign Institutions and Natural Persons	Domestic Natural Persons	Total
Number of Shareholders	5	177	2,754	6,497	932,070	941,503
Shareholding	1,654,461,912	864,616,879	1,296,133,555	19,418,701,332	2,696,466,780	25,930,380,458
Shareholding Percentage	6.38%	3.33%	5.00%	74.89%	10.40%	100.00%

Note: Record date for the second quarter of 2021 cash dividend distribution.

Distribution of Shareholding

Common Share As of 12/22/2021 (Note)

Shareholding Range	Number of Shareholders	Shareholding	Shareholding Percentage
1-999	545,615	87,082,214	0.34%
1,000-5,000	317,689	601,885,248	2.32%
5,001-10,000	38,116	277,683,465	1.07%
10,001-15,000	13,224	163,170,054	0.63%
15,001-20,000	6,421	113,788,204	0.44%
20,001-30,000	6,265	153,622,977	0.59%
30,001-40,000	3,008	104,776,935	0.40%
40,001-50,000	1,829	82,437,788	0.32%
50,001-100,000	3,596	252,032,354	0.97%
100,001-200,000	1,892	263,134,854	1.02%
200,001-400,000	1,272	356,135,934	1.37%
400,001-600,000	531	258,004,260	1.00%
600,001-800,000	317	219,548,288	0.85%
800,001-1,000,000	200	180,201,938	0.69%
Over 1,000,001	1,528	22,816,875,945	87.99%
Total	941,503	25,930,380,458	100.00%

Note: Record date for the second quarter of 2021 cash dividend distribution.

Preferred Share: None.

4.1.4 Major Shareholders

Common Share As of 12/22/2021 (Note)

Shareholders	Shareholding	Shareholding Percentage
ADR-Taiwan Semiconductor Manufacturing Company, Ltd.	5,321,425,968	20.52%
National Development Fund, Executive Yuan	1,653,709,980	6.38%
Citibank (Taiwan) Ltd. in custody for Government of Singapore	649,496,949	2.50%
Citibank (Taiwan) Ltd. in custody for Norges Bank	362,567,229	1.40%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	313,909,748	1.21%
New Labor Pension Fund	279,407,855	1.08%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds	258,633,285	1.00%
Fubon Life Insurance Co., Ltd	233,718,221	0.90%
JPMorgan Chase Bank N.A., Taipei Branch in custody for EuroPacific Growth Fund	211,505,649	0.82%
iShares Core MSCI Emerging Markets ETF	209,297,000	0.81%

Note: Record date for the second quarter of 2021 cash dividend distribution.

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

Unit: Share

Title Name	2021		01/01/2022 - 02/28/2022	
	Net Change in Shareholding	Net Change in Shares Pledged	Net Change in Shareholding	Net Change in Shares Pledged
Chairman Mark Liu	-	-	-	-
Chief Executive Officer & Vice Chairman C.C. Wei	(1,300,000)	-	-	-
Director F.C. Tseng	(5,000,000)	-	-	-
Director National Development Fund, Executive Yuan	-	-	-	-
Representative: Ming-Hsin Kung	-	-	-	-
Independent Director Sir Peter L. Bonfield	-	-	-	-
Independent Director Stan Shih (Note 1)	-	-	-	-
Independent Director Kok-Choo Chen	-	-	-	-
Independent Director Michael R. Splinter	-	-	-	-
Independent Director Moshe N. Gavrielov	-	-	-	-
Independent Director Yancey Hai	-	-	-	-
Independent Director L. Rafael Reif (Note 2)				
Senior Vice President Lora Ho	-	1,000,000	-	-
Senior Vice President Wei-Jen Lo	-	-	-	-
Senior Vice President Rick Cassidy	-	-	-	-
Senior Vice President Y.P. Chin	-	-	-	-
Senior Vice President Y.J. Mii	-	-	-	-
Senior Vice President J.K. Lin	130,233	-	-	-
Senior Vice President J.K. Wang	20,000	-	-	-
Senior Vice President Cliff Hou	7,936	-	1,566	-
Senior Vice President Kevin Zhang	27,000	-	-	-
Vice President and General Counsel/Corporate Governance Officer Sylvia Fang	-	(50,000)	-	-
Vice President Connie Ma	56,000	-	-	-
Vice President Y.L. Wang	-	-	-	-
Vice President and TSMC Distinguished Fellow Doug Yu	25,000	-	-	-
Vice President and TSMC Fellow T.S. Chang	-	-	-	-
Vice President Michael Wu	-	-	-	-
Vice President Min Cao	-	-	-	-
Vice President Marvin Liao	30,000	70,485	-	-
Vice President Y.H. Liaw	-	-	-	-
Vice President Simon Jang	-	-	-	-
Vice President, Chief Financial Officer/Spokesperson Wendell Huang	143	-	16	-
Vice President C.S. Yoo	-	-	-	-
Vice President Jun He	7,000	-	1,000	-
Vice President Geoffrey Yeap	17,000	-	5,000	-
Vice President and Chief Information Officer Chris Horng-Dar Lin	6,000	-	10,000	-
Vice President Jonathan Lee (Note3)	3,663	-	626	-
Vice President Arthur Chuang (Note 4)	-	-	-	-
Vice President and TSMC Fellow L.C. Lu (Note 4)	15,000	-	5,000	-
Vice President K.C. Hsu (Note 5)	-	-	16,000	-

Note 1: Mr. Stan Shih's tenure expired on July 26, 2021. His shareholding is no longer required to disclose.
Note 2: Dr. L. Rafael Reif was elected as TSMC's independent director at TSMC's Annual Shareholders' Meeting on July 26, 2021. His shareholding was disclosed starting from that date.
Note 3: Mr. Jonathan Lee was promoted to Vice President, effective June 9, 2021. His shareholdings were disclosed starting from that date.
Note 4: Dr. Arthur Chuang and Dr. L.C. Lu were promoted to Vice President, effective August 10, 2021. Their shareholdings were disclosed starting from that date.
Note 5: Mr. K.C. Hsu was promoted to Vice President, effective November 9, 2021. His shareholdings were disclosed starting from that date.

4.1.6 Stock Trade with Related Party

Name	Reason of the Transfer	Transfer Date	Transferee	Relation with the Transferee	Shares	Transfer Price
C.C. Wei	Gifting	10/06/2021	Wei, Niou Ching-Rong	Spouse	1,000,000	-
F.C. Tseng	Gifting	12/10/2021	Tseng, Chen Hang	Spouse	5,000,000	-

4.1.7 Stock Pledge with Related Party: None.

4.1.8 Related Party Relationship among TSMC's 10 Largest Shareholders

Common Share

As of 12/22/2021 (Note)

Name	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Name and Relationship between TSMC's Shareholders	
	Shares	%	Shares	%	Shares	%	Name	Relationship
ADR-Taiwan Semiconductor Manufacturing Company, Ltd.	5,321,425,968	20.52%	N/A	N/A	N/A	N/A	None	None
National Development Fund, Executive Yuan	1,653,709,980	6.38%	N/A	N/A	N/A	N/A	None	None
Representative: Ming-Hsin Kung	779	0.00%	-	-	-	-	None	None
Citibank (Taiwan) Ltd. in custody for Government of Singapore	649,496,949	2.50%	N/A	N/A	N/A	N/A	None	None
Citibank (Taiwan) Ltd. in custody for Norges Bank	362,567,229	1.40%	N/A	N/A	N/A	N/A	None	None
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	313,909,748	1.21%	N/A	N/A	N/A	N/A	None	None
New Labor Pension Fund	279,407,855	1.08%	N/A	N/A	N/A	N/A	None	None
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds	258,633,285	1.00%	N/A	N/A	N/A	N/A	None	None
Fubon Life Insurance Co., Ltd	233,718,221	0.90%	N/A	N/A	N/A	N/A	None	None
Chairman: Richard M. Tsai	Not Available							
JPMorgan Chase Bank N.A. Taipei Branch in custody for EuroPacific Growth Fund	211,505,649	0.82%	N/A	N/A	N/A	N/A	None	None
iShares Core MSCI Emerging Markets ETF	209,297,000	0.81%	N/A	N/A	N/A	N/A	None	None

Note: Record date for the second quarter of 2021 cash dividend distribution.

4.1.9 Long-term Investment Ownership

As of 12/31/2021

Long-term Investment	Ownership by TSMC (1)		Ownership by Directors, Managers and Directly/Indirectly Owned Subsidiaries (2)		Total Ownership (1) + (2)	
	Shares	%	Shares	%	Shares	%
Equity Method:						
TSMC Partners, Ltd.	988,268,244	100%	-	-	988,268,244	100%
TSMC Global Ltd.	11,384	100%	-	-	11,384	100%
TSMC North America	11,000,000	100%	-	-	11,000,000	100%
TSMC Europe B.V.	200	100%	-	-	200	100%
TSMC Japan Limited	6,000	100%	-	-	6,000	100%
TSMC Korea Limited	80,000	100%	-	-	80,000	100%
TSMC Design Technology Japan, Inc.	15,000	100%	-	-	15,000	100%
TSMC Japan 3DIC R&D Center, Inc.	11,100	100%	-	-	11,100	100%
TSMC China Company Limited	Not Applicable (Note 1)	100%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	100%
TSMC Nanjing Company Limited	Not Applicable (Note 1)	100%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	100%
TSMC Arizona Corporation	770,001	100%	-	-	770,001	100%
Japan Advanced Semiconductor Manufacturing, Inc.	57,575 (Note 2)	100% (Note 2)	-	-	57,575 (Note 2)	100% (Note 2)
VisEra Technologies Company Ltd.	213,619,000	72.83%	-	-	213,619,000	72.83%
Systems on Silicon Manufacturing Co. Pte. Ltd.	313,603	38.79%	-	-	313,603	38.79%
Vanguard International Semiconductor Corp.	464,223,493	28.32%	275,614,145	16.82% (Note 3)	739,837,638	45.14%
Xintec Inc.	111,281,925	41.01%	-	-	111,281,925	41.01%
Global UniChip Corporation	46,687,859	34.84%	-	-	46,687,859	34.84%
VentureTech Alliance Fund II, L.P.	Not Applicable (Note 1)	98.00%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	98.00%
VentureTech Alliance Fund III, L.P.	Not Applicable (Note 1)	98.00%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	98.00%
Emerging Fund L.P.	Not Applicable (Note 1)	99.90%	Not Applicable (Note 1)	-	Not Applicable (Note 1)	99.90%

Note 1: Not applicable. These firms do not issue shares. TSMC's investments are measured as a percentage of ownership.
Note 2: Japan Advanced Semiconductor Manufacturing, Inc. increased its capital in January 2022. After the capital increase, shares owned by TSMC increased to 807,651 shares while TSMC's ownership decreased to 81.01% with Sony Semiconductor Solutions Corporation participating as a minority shareholder.
Note 3: TSMC's director, National Development Fund of Executive Yuan, held 16.72% while other directors and management held 0.10%.

4.1.10 Share Information

TSMC's earnings per share in 2021 increased 15.2% from 2020 to NT$23.01 per share. The following table details TSMC's market price, net worth, earnings, and dividends per common share, as well as other data regarding return on investment.

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

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

Item	2020	2021	01/01/2022 - 02/28/2022
Market Price Per Share (Note 1)			
Highest Market Price	530.00	673.00	683.00
Lowest Market Price	248.00	536.00	604.00
Average Market Price	378.65	597.73	642.67
Net Worth Per Share			
Before Distribution	71.33	83.62	-
After Distribution	68.83	80.87 (Note 5)	-
Earnings Per Share			
Weighted Average Shares (thousand shares)	25,930,380	25,930,380	-
Diluted Earnings Per Share	19.97	23.01	-
Dividends Per Share			
Cash Dividends	10.00	11 (Note 5)	-
Accumulated Undistributed Dividend	-	-	-
Return on Investment			
Price/Earnings Ratio (Note 2)	18.96	25.98	-
Price/Dividend Ratio (Note 3)	37.86	54.34 (Note 5)	-
Cash Dividend Yield (Note 4)	2.6%	1.8% (Note 5)	-

Note 1: Referred to TWSE website
Note 2: Price/Earnings Ratio = Average Market Price/ Diluted Earnings Per Share
Note 3: Price/Dividend Ratio = Average Market Price/Cash Dividends Per Share
Note 4: Cash Dividend Yield = Cash Dividends Per Share/Average Market Price
Note 5: Including the dividends amount for fourth quarter of 2021, which were approved by Board of Directors on February 15, 2022.

4.1.11 Dividend Policy and Distribution of Earnings

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

Pursuant to TSMC's Articles of Incorporation, the Company's Board of Directors is authorized to approve quarterly cash dividends after the close of each quarter. After the Company's Board of Directors approves quarterly cash dividends, TSMC will distribute the dividend within six months. The respective amounts and payment dates of 2021 quarterly cash dividends are demonstrated in the table below. TSMC intends to maintain a sustainable cash dividend on both an annual and quarterly basis.

2021 Quarterly Earnings Distribution

Unit: NT$

Period	Approved Date	Payment Date	Cash Dividends Per Share	Total Earnings Distribution Amount
First quarter of 2021	06/09/2021	10/14/2021	NT$2.75	71,308,546,260
Second quarter of 2021	08/10/2021	01/13/2022	NT$2.75	71,308,546,260
Third quarter of 2021	11/09/2021	04/14/2022	NT$2.75	71,308,546,260
Fourth quarter of 2021	02/15/2022	07/14/2022	NT$2.75	71,308,546,260

4.1.12 Compensation to Directors and Profit Sharing to Employees

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

As resolved by TSMC's Board of Directors on February 15, 2022, a profit sharing to employees was expensed based on a certain percentage of 2021 profit; compensation to directors was expensed based on the estimated amount of payment. If the actual amounts subsequently paid differ from the above estimated amounts, the differences will be recorded in the year paid as a change in accounting estimate.

2021 Directors' Compensation and Employees' Profit Sharing

	Board Resolution (02/15/2022)
	Amount (NT$ thousands)
Directors' Compensation (Cash)	487,537
Employee's Profit Sharing (Cash)	35,601,449

Note: NT$ 35,601,449 thousand business performance bonus was already distributed following each quarter of 2021. The above employees' profit sharing will be distributed in July, 2022.

2020 Directors' Compensation and Employees' Profit Sharing

	Board Resolution (02/09/2021)	Actual Result (Note)
	Amount (NT$ thousands)	Amount (NT$ thousands)
Directors' Compensation (Cash)	509,753	509,753
Employees' Profit Sharing (Cash)	34,753,184	34,606,262

Note: The above directors' compensation and employees' profit sharing were expensed under the Company's 2020 statement of comprehensive income and were approved by the Board of Directors at its meeting on February 9, 2021. However, due to employee turnover, the employees' profit sharing in the amount of NT$146,922 thousand was undistributed, and related expense was reversed in 2021.

4.1.13 Impact to 2022 Business Performance and EPS of Stock Dividend Distribution: Not applicable.

4.1.14 Buyback of Common Stock

TSMC's Board of Directors approved the issuance of 1,387,000 shares for 2021 employee restricted stock awards (RSAs) at its meeting on February 15, 2022. In order to offset dilution from the increase of outstanding shares due to the above-mentioned issuance, the Board of Directors approved a share buyback program for TSMC to buy back its common shares on the Taiwan Stock Exchange. The shares purchased will be cancelled subsequently. The implementation of the share buyback program was as follows.

(1) Completed Share Buyback Program

As of 02/28/2022

	5th Buyback Program
Purpose of the Share Buyback	For the shareholders' interests
Scheduled Buyback Period	02/16/2022 - 04/15/2022
Scheduled Buyback Price Range	NT$444 to NT$960 per share, while the buyback will still be carried out if the stock price falls below the aforementioned range
Type and Number of Shares Bought Back	Common shares: 1,387,000 shares
Total Monetary Amount of Shares Bought Back	NT$871,566,000
Number of Shares Bought Back as a Percentage of the Approved Number of Shares to be Bought Back (%)	100%
Number of Shares Cancelled and/or Transferred	0 share
Cumulative Number of the Company's Treasury Shares Held	1,387,000 shares
Cumulative Number of the Company's Treasury Shares as a Percentage of the Total Number of the Company's Issued Shares (%)	0.01%

(2) Uncompleted Share Buyback Program: None.

4.2 Issuance of Corporate Bonds

4.2.1 Corporate Bonds

NTD Corporate Bonds

As of 02/28/2022

Issuance		Domestic Unsecured Bond (101-3)	Domestic Unsecured Bond (101-4)	Domestic Unsecured Bond (102-1)	Domestic Unsecured Bond (102-2)	Domestic Unsecured Bond (102-4)	Domestic Unsecured Bond (109-1)	Domestic Unsecured Bond (109-2)	Domestic Unsecured Bond (109-3)	Domestic Unsecured Bond (109-4)	Domestic Unsecured Bond (109-5)
Issue Date		10/09/2012	01/04/2013	02/06/2013	07/16/2013	09/25/2013	03/23/2020	04/15/2020	05/29/2020	07/14/2020	09/03/2020
Denomination		NT$10,000,000									
Offering Price		Par									
Total Amount		NT$4,400,000,000	NT$23,600,000,000	NT$21,400,000,000	NT$13,700,000,000	NT$15,000,000,000	NT$24,000,000,000	NT$21,600,000,000	NT$14,400,000,000	NT$13,900,000,000	NT$15,600,000,000
Coupon (Per Annum)		1.53%	Tranche A: 1.23% Tranche B: 1.35% Tranche C: 1.49%	Tranche A: 1.23% Tranche B: 1.38% Tranche C: 1.50%	Tranche A: 1.50% Tranche B: 1.70%	Tranche A: 1.35% Tranche B: 1.45% Tranche C: 1.60% Tranche D: 1.85% Tranche E: 2.05% Tranche F: 2.10%	Tranche A: 0.58% Tranche B: 0.62% Tranche C: 0.64%	Tranche A: 0.52% Tranche B: 0.58% Tranche C: 0.60%	Tranche A: 0.55% Tranche B: 0.60% Tranche C: 0.64%	Tranche A: 0.58% Tranche B: 0.65% Tranche C: 0.67%	Tranche A: 0.50% Tranche B: 0.58% Tranche C: 0.60%
Tenure and Maturity Date		Tenure: 10 years Maturity: 10/09/2022	Tranche A: 5 years Maturity: 01/04/2018 Tranche B: 7 years Maturity: 01/04/2020 Tranche C: 10 years Maturity: 01/04/2023	Tranche A: 5 years Maturity: 02/06/2018 Tranche B: 7 years Maturity: 02/06/2020 Tranche C: 10 years Maturity: 02/06/2023	Tranche A: 7 years Maturity: 07/16/2020 Tranche B: 10 years Maturity: 07/16/2023	Tranche A: 3 years Maturity: 09/25/2016 Tranche B: 4 years Maturity: 09/25/2017 Tranche C: 5.5 years Maturity: 03/25/2019 Tranche D: 7.5 years Maturity: 03/25/2021 Tranche E: 9.5 years Maturity: 03/25/2023 Tranche F: 10 years Maturity: 09/25/2023	Tranche A: 5 years Maturity: 03/23/2025 Tranche B: 7 years Maturity: 03/23/2027 Tranche C: 10 years Maturity: 03/23/2030	Tranche A: 5 years Maturity: 04/15/2025 Tranche B: 7 years Maturity: 04/15/2027 Tranche C: 10 years Maturity: 04/15/2030	Tranche A: 5 years Maturity: 05/29/2025 Tranche B: 7 years Maturity: 05/29/2027 Tranche C: 10 years Maturity: 05/29/2030	Tranche A: 5 years Maturity: 07/14/2025 Tranche B: 7 years Maturity: 07/14/2027 Tranche C: 10 years Maturity: 07/14/2030	Tranche A: 5 years Maturity: 09/03/2025 Tranche B: 7 years Maturity: 09/03/2027 Tranche C: 10 years Maturity: 09/03/2030
Repayment		Bullet								Two equal installments in last two years	
Outstanding		NT$4,400,000,000	NT$3,000,000,000	NT$3,600,000,000	NT$3,500,000,000	NT$8,000,000,000	NT$24,000,000,000	NT$21,600,000,000	NT$14,400,000,000	NT$13,900,000,000	NT$15,600,000,000
Credit Rating		twAAA (Taiwan Ratings Corporation, 09/04/2012)	twAAA (Taiwan Ratings Corporation, 11/29/2012)	twAAA (Taiwan Ratings Corporation, 12/18/2012)	twAAA (Taiwan Ratings Corporation, 05/16/2013)	twAAA (Taiwan Ratings Corporation, 08/06/2013)	Not Applicable				
Underwriter (Lead Underwriter)		Not Applicable					Yuanta Securities Co., Ltd.	MasterLink Securities Co., Ltd.	Hua Nan Securities Co., Ltd.	Capital Securities Co., Ltd.	KGI Securities Co., Ltd.
Trustee		Taipei Fubon Commercial Bank Co., Ltd.									
Guarantor		None									
Legal Counsel		Modern Law Office					True Honesty International Law Offices				
Auditor		Deloitte & Touche					Deloitte & Touche				
Redemption or Early Repayment Clause		None									
Covenants		None									
Other Rights of Bondholders	Conversion Right	None									
	Amount of Converted or Exchanged Common Shares, ADRs or Other Securities	Not Applicable									
Dilution Effect and Other Adverse Effects on Existing Shareholders		None									
Custodian		None									

(Continued)

Issuance		Domestic Unsecured Bond (109-6, Green Bond)	Domestic Unsecured Bond (109-7)	Domestic Unsecured Bond (110-1)	Domestic Unsecured Bond (110-2)	Domestic Unsecured Bond (110-3)	Domestic Unsecured Bond (110-4)	Domestic Unsecured Bond (110-6)	Domestic Unsecured Bond (110-7)	Domestic Unsecured Bond (111-1, Green Bond)
Issue Date		12/02/2020	12/29/2020	03/30/2021	05/03/2021	06/25/2021	08/19/2021	10/05/2021	12/09/2021	01/12/2022
Denomination		NT$10,000,000								
Offering Price		Par								
Total Amount		NT$12,000,000,000	NT$18,500,000,000	NT$21,100,000,000	NT$19,200,000,000	NT$19,700,000,000	NT$21,600,000,000	NT$16,300,000,000	NT$16,700,000,000	NT$5,400,000,000
Coupon (Per Annum)		Tranche A: 0.40% Tranche B: 0.44% Tranche C: 0.48%	Tranche A: 0.36% Tranche B: 0.41% Tranche C: 0.45%	Tranche A: 0.50% Tranche B: 0.55% Tranche C: 0.60%	Tranche A: 0.50% Tranche B: 0.58% Tranche C: 0.65%	Tranche A: 0.52% Tranche B: 0.58% Tranche C: 0.65%	Tranche A: 0.485% Tranche B: 0.50% Tranche C: 0.55% Tranche D: 0.62%	Tranche A: 0.535% Tranche B: 0.54% Tranche C: 0.60% Tranche D: 0.62%	Tranche A: 0.65% Tranche B: 0.675% Tranche C: 0.72%	Tranche A: 0.63% Tranche B: 0.72%
Tenure and Maturity Date		Tranche A: 5 years Maturity: 12/02/2025 Tranche B: 7 years Maturity: 12/02/2027 Tranche C: 10 years Maturity: 12/02/2030	Tranche A: 5 years Maturity: 12/29/2025 Tranche B: 7 years Maturity: 12/29/2027 Tranche C: 10 years Maturity: 12/29/2030	Tranche A: 5 years Maturity: 03/30/2026 Tranche B: 7 years Maturity: 03/30/2028 Tranche C: 10 years Maturity: 03/30/2031	Tranche A: 5 years Maturity: 05/03/2026 Tranche B: 7 years Maturity: 05/03/2028 Tranche C: 10 years Maturity: 05/03/2031	Tranche A: 5 years Maturity: 06/25/2026 Tranche B: 7 years Maturity: 06/25/2028 Tranche C: 10 years Maturity: 06/25/2031	Tranche A: 4 years Maturity: 08/19/2025 Tranche B: 5 years Maturity: 08/19/2026 Tranche C: 7 years Maturity: 08/19/2028 Tranche D: 10 years Maturity: 08/19/2031	Tranche A: 4.5 years Maturity: 04/05/2026 Tranche B: 5 years Maturity: 10/05/2026 Tranche C: 7 years Maturity: 10/05/2028 Tranche D: 10 years Maturity: 10/05/2031	Tranche A: 5 years Maturity: 12/09/2026 Tranche B: 5.5 years Maturity: 06/09/2027 Tranche C: 7 years Maturity: 12/09/2028	Tranche A: 5 years Maturity: 01/12/2027 Tranche B: 7 years Maturity: 01/12/2029
Repayment		Two equal installments in last two years		Bullet						
Outstanding		NT$12,000,000,000	NT$18,500,000,000	NT$21,100,000,000	NT$19,200,000,000	NT$19,700,000,000	NT$21,600,000,000	NT$16,300,000,000	NT$16,700,000,000	NT$5,400,000,000
Credit Rating		Not Applicable								
Underwriter (Lead Underwriter)		Capital Securities Co., Ltd.	KGI Securities Co., Ltd.	Capital Securities Co., Ltd.	SinoPac Securities Co., Ltd.	Yuanta Securities Co., Ltd.	KGI Securities Co., Ltd.	Capital Securities Co., Ltd.	Capital Securities Co., Ltd.	Yuanta Securities Co., Ltd.
Trustee		Taipei Fubon Commercial Bank Co., Ltd.								
Guarantor		None								
Legal Counsel		True Honesty International Law Offices								
Auditor		Deloitte & Touche								
Redemption or Early Repayment Clause		None								
Covenants		None								
Other Rights of Bondholders	Conversion Right	None								
	Amount of Converted or Exchanged Common Shares, ADRs or Other Securities	Not Applicable								
Dilution Effect and Other Adverse Effects on Existing Shareholders		None								
Custodian		None								

Onshore USD Corporate Bonds

As of 02/28/2022

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

Offshore USD Corporate Bonds

As of 02/28/2022

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

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

4.2.2 Convertible Bond: None.

4.2.3 Exchangeable Bond: None.

4.2.4 Shelf Registration in Taiwan: None.

4.2.5 Bond with Warrants: None.

4.3 Preferred Shares

4.3.1 Preferred Shares: None.

4.3.2 Preferred Shares with Warrants: None.

4.4 Issuance of American Depositary Shares

Issue Date	10/08/1997	11/20/1998	01/12/1999 - 01/14/1999	07/15/1999	08/23/1999 - 09/09/1999	02/22/2000 - 03/08/2000	04/17/2000	06/07/2000 - 06/15/2000	05/17/2001 - 06/11/2001	11/27/2001	02/07/2002 - 02/08/2002	11/21/2002 - 12/19/2002	07/14/2003 - 07/21/2003	11/14/2003	08/10/2005 - 09/08/2005	05/23/2007
Total Amount (US$ million)	595	185	36	296	159	379	225	1,168	539	321	1,002	160	909	1,077	1,402	2,563
Offering Price Per ADS (US$)	24.78	15.26	17.75	24.516	28.964	57.79	56.16	35.75	20.63	16.03	16.75	8.73	10.40	10.77	8.60	10.68
Units Issued	24,000,000	12,094,000	2,000,000	12,094,000	5,486,000	6,560,000	4,000,000	32,667,800	26,110,000	20,000,000	59,800,000	18,348,000	87,357,200	100,000,000	163,027,500	240,000,000
Common Shares Represented	Each unit of ADS represents five TSMC Common Shares.															
Underlying Securities	TSMC Common Shares from Selling Shareholders							Cash Offering and TSMC Common Shares from Selling Shareholders	TSMC Common Shares from Selling Shareholders							
Apportionment of Expenses for Issuance and Maintenance	(Note 3)							(Note 4)	(Note 3)							
Issuance and Listing	NYSE															
Rights and Obligations of ADS Holders	Same as those of Common Share Holders															
Trustee	Not Applicable															
Depositary Bank	Citibank, N.A. – New York															
Custodian Bank (Note 1)	Citibank, N.A. – Taipei Branch															
ADSs Outstanding (Note 2)	As of February 28, 2022, total number of outstanding ADSs was 1,064,100,627.															
Terms and Conditions in the Deposit Agreement and Custody Agreement	See Deposit Agreement and Custody Agreement for Details															
Closing Price Per ADS (US$; source: Bloomberg)	01/01/2021 - 12/31/2021	High	140.05													
		Low	108.12													
		Average	118.84													
	01/01/2022 - 02/28/2022	High	140.66													
		Low	107.01													
		Average	123.81													

Note 1: Citibank, N.A., Taipei Branch changed its name to "Citibank Taiwan Limited" in 2009.
Note 2: TSMC has in aggregate issued 813,544,500 ADSs since 1997, which, if taking into consideration stock dividends distributed over the period, would amount to 1,147,835,205 ADSs. Stock dividends distributed in 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 and 2009 were 45%, 23%, 28%, 40%, 10%, 8%, 14.08668%, 4.99971%, 2.99903%, 0.49991%, 0.50417% and 0.49998%, respectively. As of February 28, 2022, total number of outstanding ADSs was 1,064,100,627 after 83,734,578 were redeemed.
Note 3: All fees and expenses related to issuance of ADSs were paid by the selling shareholders, while maintenance expenses were borne by TSMC.
Note 4: All fees and expenses related to issuance of ADSs were paid proportionately by TSMC and the selling shareholders, while maintenance expenses were borne by TSMC.

4.5 Status of Employee Stock Option Plan

4.5.1 Issuance of Employee Stock Options: None.

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

4.6 Status of Employee Restricted Stock

4.6.1 Status of Employee Restricted Stock

As of 03/12/2022 (Note)

Type of Employee Restricted Stock	Employee Restricted Stock Awards for Year 2021
Date of Effective Registration	08/06/2021
Issue Date	03/01/2022
Number of Employee Restricted Stock Issued	1,387,000 shares
Issued Price	None
Employee Restricted Stock as a Percentage of Shares Issued	0.00535%
Vesting conditions of Employee Restricted Stock	1. The RSAs granted to an executive can only be vested if (a) the executive remains employed by the Company on the last date of each vesting period; (b) during the vesting period, the executive may not breach any agreement with the Company or violate the Company's work rules; and (c) certain executive performance metrics (a year-end performance rating of at least "S" (Note) or above for the year immediately preceding the expiration of each vesting period) and the Company's business performance metrics are met. (Note: "S" stands for "Successful") 2. The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of the Company's business performance metrics, as detailed in the following point. 3. The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on the Company's relative TSR (Note) achievement (see table below) to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation Committee's evaluation of the Company's ESG achievements. The number of shares so calculated should be rounded down to the nearest integral.

The Company's TSR Relative to the TSR of S&P 500 IT Index	Ratio of Shares to Be Vested
Above the Index by X percentage points	50% + X＊2.5%, with the maximum of 100%
Equal to the Index	50%
Below the Index by X percentage points	50% - X＊2.5%, with the minimum of 0%

Note: TSR: Total Shareholder Return (including capital gains and dividends)

Restricted Rights of Employee Restricted Stock	1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the executives cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means. 2. During each vesting period, no executives granted RSAs may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs. 3. Subject to the restrictions mentioned above, the rights of the executives with regard to the unvested RSAs granted under these Rules before the fulfillment of the vesting conditions, including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of the Company. The relevant matters shall be handled in accordance with the RSA trust/custody agreement. 4. Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and any other shareholder rights shall be exercised by the engaged trustee/custodian on the executives' behalf. 5. During each vesting period, if the Company conducts a capital reduction for cash return, capital reduction for loss offset, or other non-statutory capital reduction, the unvested RSAs shall be cancelled proportionally by the ratio of such capital reduction. If the Company conducts a capital reduction for cash return, the returned cash shall be deposited in a trust/custody account and shall not be delivered to the executives until the vesting conditions are fulfilled; otherwise, the cash will be returned to the Company.
Custody Status of Employee Restricted Stock	1. Upon the grant of the RSAs, the RSAs shall be deposited in a trust/custody account. Before the vesting conditions are fulfilled, the executives cannot request the trustee/custodian to return to them the RSAs for any reasons or by any means. 2. During the period when the granted RSAs are deposited in a trust/custody account, each executive must enter into an agreement authorizing the Company to, among others, negotiate, execute, modify, extend, rescind, and terminate the trust/custody agreement with the trustee/custodian, and give instructions to deliver, use, and dispose of any of the properties under the trust/custody, on their behalf, with full power and authority.

(Continued)

Measures to be Taken Where Employees Fail to Meet the Vesting Conditions	1. The Company will reclaim the granted RSAs and cancel the same at no extra cost to the Company, where an executive fails to meet the vesting conditions. 2. Voluntary Separation, separation with a severance, or involuntary discharge: Any unvested RSAs will be forfeited on the effective date of separation due to a voluntary separation, separation with a severance, or involuntary discharge of such executives. The Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 3. Leave Without Pay: All the rights and obligations in connection with the unvested RSAs will not be affected as a result of executives taking extended leave without pay. However, the actual number of shares that may be vested will not only be calculated according to the vesting conditions but also be prorated based on the number of months of their service during the year prior to the applicable vesting day. If such executives are on leave without pay on any vesting day, it shall be deemed that they fail to meet the vesting conditions, and the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 4. Retirement: All the rights and obligations in connection with the unvested RSAs will not be affected as a result of an employee's retirement. However, the actual number of shares that may be vested shall be calculated according to the vesting condition, and the performance rating granted to them shall be deemed "S". 5. Employment Termination Due to Death or Physical Disability Caused by Occupational Accidents: The unvested RSAs shall be deemed immediately vested in the case of death or physical disability due to an occupational accident, where the RSAs vested shall be based on the assumption that the Company's TSR equals to the TSR of S&P 500 IT Index and there is no further adjustment for the Company's ESG achievements. In the case of death, the respective heir(s) may apply for entitlement to those inheritable shares after completing all necessary legal procedures and providing relevant supporting documents. In the case of physical disability caused by occupational injury, the vested RSAs will be received by such executives. 6. Position Transfer: Where any executives apply for transferring to any of the Company's subsidiaries, affiliates, or other companies, the measures to be taken with respect to their unvested RSAs will be the same as those specified in "Voluntary Separation". Where any executives are assigned by the Company to a position in any of the Company's subsidiaries, affiliates, or other companies, all the rights and obligations in connection with the unvested RSAs will not be affected as a result. However, subject to the vesting conditions, such executives shall continue working in the assigned subsidiaries, affiliates, or other companies on the vesting dates. Otherwise, they will be considered to fail to meet the vesting conditions, and the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. With respect to the evaluation of the achievement of individual performance goals, Chairman and Chief Executive Officer will determine whether the vesting conditions are met by reviewing the evaluation of the executives' performance provided by the assigned subsidiaries, affiliates, or other companies. 7. Where any executives declare to voluntarily relinquish the granted RSAs with a written statement, the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 8. Where any executives, after being granted the RSAs, breach any agreement with the Company employment agreement or violate the Company's work rules, the Company will reclaim the RSAs granted to them and cancel the same at no extra cost to the Company. 9. Where any executives terminate or revoke their authorization given to the Company regarding the executive's RSA trust/custody account, the Company will reclaim their unvested RSAs and cancel the same at no extra cost to the Company.
Number of Employee Restricted Stock Which Have Been Reclaimed	0 share
Number of Released Employee Restricted Stock	0 share
Number of Unreleased Employee Restricted Stock	1,387,000 shares
Ratio of Unreleased Employee Restricted Stock to Total Issued Shares	0.00535%
Impact on Shareholders' Interest	The potential dilution of the Company's EPS is minimal; therefore, there is no material impact on shareholders' interest.

Note: The printed date of this Annual Report.

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

Unit: Share

As of 03/12/2022 (Note 1)

	Title	Name	No. of Employee Restricted Stock Granted	Employee Restricted Stock as a Percentage of Shared Issued (Note 2)	Restrictions Released				Restrictions Unreleased			
					No. of Shares	Issued Price (NT$)	Issued Amount (NT$ thousands)	Released Shares as a Percentage of Shares Issued (Note 2)	No. of Shares	Issued Price (NT$)	Issued Amount (NT$ thousands)	Unreleased Shares as a Percentage of Shares Issued (Note 2)
Management Team and Employee	Chief Executive Officer	C.C. Wei	1,387,000	0.00535%	0	0	0	0%	1,387,000	0	0	0.00535%
	Vice President, Chief Financial Officer/Spokesperson	Wendell Huang										
	Senior Vice President	Lora Ho										
	Senior Vice President	Wei-Jen Lo										
	Senior Vice President	Y.P. Chin										
	Senior Vice President	Y.J. Mii										
	Senior Vice President	J.K. Lin										
	Senior Vice President	J.K. Wang										
	Senior Vice President	Cliff Hou										
	Senior Vice President	Kevin Zhang										
	Vice President and General Counsel/ Corporate Governance Officer	Sylvia Fang										
	Vice President	Connie Ma										
	Vice President	Y.L. Wang										
	Vice President and TSMC Distinguished Fellow	Doug Yu										
	Vice President and TSMC Fellow	T.S. Chang										
	Vice President	Michael Wu										
	Vice President	Min Cao										
	Vice President	Marvin Liao										
	Vice President	Y.H. Liaw										
	Vice President	Simon Jang										
	Vice President	C.S. Yoo										
	Vice President	Jun He										
	Vice President	Geoffrey Yeap										
	Vice President and Chief Information Officer	Chris Horng-Dar Lin										
	Vice President	Jonathan Lee										
	Vice President	Arthur Chuang										
	Vice President and TSMC Fellow	L.C. Lu										
	Vice President	K.C. Hsu										
	Employee	Y.C. Huang										

Note 1: The printed date of this Annual Report.
Note 2: The number of shares issued is based on the amended number of total shares approved by Ministry of Economic Affairs on November 23, 2021.

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

4.8 Funding Plans and Implementation

The funds raised by TSMC through issuances of domestic corporate bonds are used in accordance with respective funding plans and actual needs. As of the end of the fourth quarter of 2021, the implementation of uncompleted plan was as follows:

Projects	Gross Proceeds	Use of Proceeds	Implementation Status
Unsecured Corporate Bond (109-6, Green Bond)	NT$12 billion	Green buildings and environmental protection related expenditures	As of the end of the fourth quarter of 2021, the actual completion rate was 75.65% (calculated based on actual payments), as compared to the original plan of 72.75% due to spending earlier than schedule. The funds were used in accordance with the original plans and there was no major difference between the expected benefits and the actual ones.



1998
Establishes SSMC joint venture with Royal Philips Electronics and EDB Investments in Singapore

2012
Initiates "TSMC Grand Alliance"

2016
Establishes TSMC Nanjing Company Limited

2017
Transforms its Volunteer Club into the TSMC Charity Foundation, chaired by Mrs. Sophie Chang

2020
Becomes the first semiconductor company in the world to join "RE100"

2020
Announces the construction and operation of an advanced semiconductor fab in Arizona that will use 5nm process technology for semiconductor wafer fabrication

5. Operational Highlights

5.1 Business Activities

5.1.1 Business Scope

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

5.1.2 Customer Applications

TSMC manufactured 12,302 different products for 535 customers in 2021. These chips were used across a broad spectrum of electronic applications, including computers and peripherals, information appliances, wired and wireless communication systems, high-performance computing servers and data centers, automotive and industrial equipment, as well as consumer electronics such as digital TVs, game consoles, digital cameras, AI-enabled IoT and wearables, and many other devices and applications.

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

5.1.3 Consolidated Shipments and Net Revenue in 2021 and 2020

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

		2021		2020	
		Shipments	Net Revenue	Shipments	Net Revenue
Wafer	Domestic (Note 1)	2,562	172,814,551	2,038	113,838,353
	Export	11,617	1,232,485,722	10,360	1,064,617,920
Others (Note 2)	Domestic (Note 1)	N/A	13,055,166	N/A	12,452,935
	Export	N/A	169,059,598	N/A	148,345,603
Total	Domestic (Note 1)	2,562	185,869,717	2,038	126,291,288
	Export	11,617	1,401,545,320	10,360	1,212,963,523

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

5.1.4 Production in 2021 and 2020

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

Wafers			
Year	Capacity	Output	Amount
2021	13-14	14-15	791,459
2020	12-13	12-13	643,051

5.2 Technology Leadership

5.2.1 R&D Organization and Investment

In 2021, TSMC continued to invest in research and development, with total R&D expenditures amounting to 7.9% of revenue, a level that equals or exceeds the R&D investment of many other leading high-tech companies.

Faced with the continuous challenge to significantly scale up semiconductor computing power every two years, thereby extending Moore's Law, the Company has focused its R&D efforts on contributing to customers' product success by offering leading-edge technologies and design solutions. In 2021, the Company started risk production of 3nm technology, the sixth generation platform to make use of 3D transistors, while continuing the development of 2nm, the leading-edge technology in the semiconductor industry today. Furthermore, the Company's research efforts pushed forward with exploratory studies for nodes beyond 2nm.

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

- Qualifying the fifth generation (Gen-5) chip on wafer on substrate (CoWoS®) with Si interposer area up to 2,500mm^2, which can accommodate at least two SoC logic and eight HBM (high bandwidth memory) chiplet stacks
- Successfully qualifying InFO-PoP Gen-7 for mobile applications with enhanced thermal performance
- Initiating high-volume manufacturing of integrated fan-out on substrate (InFO-oS) Gen-3, which provides more chip partition integration with larger package size and higher bandwidth
- Expanding the 12-inch Bipolar-CMOS-DMOS (BCD) technology portfolio on 90nm, 55nm, 40nm and 22nm, targeting a variety of fast-growing applications of mobile power management ICs with various levels of integration
- Maintaining stable high yield and achieving technical qualification of 28nm eFlash for consumer electronics grade and automobile electronics grade-1 applications
- Entering volume production of 40nm resistive random access memory (RRAM), 28nm and 22nm nodes ready for production as a low-cost solution for the price sensitive IoT market
- Increasing productivity of 22nm magnetic random access memory (MRAM), and achieved technical qualification in 2021, for next generation embedded memory MCUs, automotive devices, IoT and AI applications
- Achieving 13% pixel size scaling down on Quad Phase Detection (QPD) CMOS image sensors structure for the mobile imaging market.

In 2021, TSMC developed or introduced the following technologies:

Logic Technology

- 3nm fin field-effect transistor (FinFET) (N3) technology development is on track and making good progress. Volume production is expected to start in the second half of 2022.
- N3E technology, an enhanced version of N3 technology, development is on track and making good progress. This technology will continue to provide industry-leading advantages for both mobile and high-performance computing applications. N3E volume production is scheduled for one year after N3.
- 4nm FinFET (N4) technology, an enhanced version of 5nm FinFET (N5) technology, started risk production for customer products in 2021 and volume production is expected in 2022.
- 4nm FinFET Plus (N4P) technology development is on track and making good progress. Risk production is expected to start in 2022.
- N4X technology, introduced in 2021, is TSMC's first high performance computing (HPC)-focused technology, representing the ultimate performance and maximum clock frequencies in TSMC's 5-nanometer family. Risk production is expected in the first half of 2023.
- 5nm FinFET Plus (N5P) technology, a performance-enhanced version of 5nm technology (N5), started volume production in 2021.
- 6nm FinFET (N6) technology, which started volume production in 2020, was widely adopted in mobile, high performance computing, and consumer products in 2021.
- 7nm FinFET (N7) and 7nm FinFET plus (N7+), which have been in volume production for customers' 5G and high-performance computing products for several years, expanded to consumer and automotive products in 2021.
- 12nm FinFET compact plus (12FFC+) technology started volume production in the first quarter of 2021.
- N12e™ technology, which leverages TSMC's 12FFC+ baseline and IP ecosystem, introduced new ultra-low-leakage extreme high threshold voltage (eHVT) devices in 2021.

- 22nm ultra-low leakage (22ULL) technology introduced new enhanced low leakage and cost-effective devices in 2021, further enriching this platform to support customers in broader applications.

Specialty Technology

- 5nm automotive foundation IPs development is on track and making good progress. These IPs are expected to complete AEC-Q100 Grade-2 qualification in 2022.
- N6 radio frequency (N6 RF) technology completed development in 2021. Customer product tape-outs are expected to start in 2022.
- 16FFC FinFET compact (16FFC) RF technology received multiple customer tape-outs in 2021.
- 22ULL RF technology started volume production in 2021, covering consumer and automotive applications.
- 22ULL embedded RRAM technology, TSMC's second generation RRAM solution, features balanced cost and reliability. Several customers qualified products with this technology and ready for production in 2021.
- 22ULL embedded MRAM technology IPs completed qualification for over one million cycles endurance and reflow capability in 2021. This technology demonstrated automotive AEC-Q100 Grade-1 capability and has started volume production for customer wearable products for several years.
- 28nm ULL eFlash technology, which completed AEC-Q100 Grade-1 reliability qualification, qualified security products in 2021 for customer volume production.
- 40nm Silicon on Isolator (N40SOI) technology on 12-inch wafers, which provides industry-leading competitive advantages, received multiple customer tape-outs in 2021 and is expected to start volume production in 2022.
- 12-inch 90nm Bipolar-CMOS-DMOS (BCD) Plus technology passed qualification in 2021. TSMC helped customers complete new tape-outs and started volume production for this technology in 2021.
- Gallium Nitride (GaN)-on-Silicon Gen-1 technology platform was further enhanced in 2021 to support customers' various market applications. Gen-2 technology is under development and with completion planned for 2022.
- CMOS Image Sensor (CIS) technology was further refined to support the strong demand in advanced smartphone cameras. In 2021, TSMC helped customers roll out products with the smallest pixel size in the world.
- TSMC successfully used piezoelectric MEMS (micro electro-mechanical systems) technology to support customers in delivering single chip MEMS speakers in 2021.

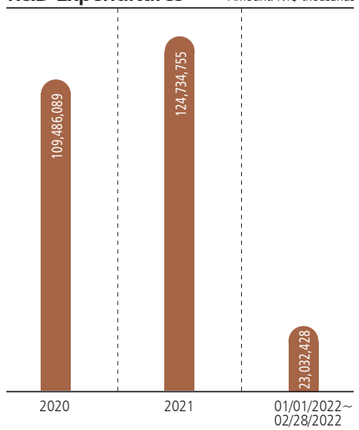
3DFabric™ - TSMC 3D Silicon Stacking and Advanced Packaging Technologies

- For TSMC-SoIC™ (System on Integrated Chip) for 3D silicon die stacking technologies, TSMC successfully demonstrated Chip on Wafer (CoW) technology with good electrical performance on heterogeneous integration of SRAM with logic on a customer product in 2021.
- CoWoS®-S (Chip on Wafer on Substrate with silicon interposer), featuring a new embedded deep trench capacitor (eDTC) option and an interposer up to 3-reticle size, was qualified to enable more logic and high band width memory (HBM) integration for customers' high performance computing applications in 2021.
- CoWoS®-R (Chip on Wafer on Substrate with redistribution layer interposer) technology was qualified in 2021.
- Fine pitch copper (Cu) bump technology for flip chip packaging on N4 silicon successfully entered risk production in 2021.

In 2021, TSMC maintained strong partnerships with many world-class research institutions, including SRC in the U.S. and IMEC in Belgium. The Company also continued to expand research collaboration with leading universities throughout the world for two grand purposes: the advancement of semiconductor technologies and the nurturing of human talent for the future.

R&D Expenditures

Amount: NT$ thousands



5.2.2 R&D Accomplishments in 2021

Highlights

- 3nm Technology

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

- 2nm Technology

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

- Lithography Technology

In 2021, TSMC R&D achieved solid imaging with improved wafer yield for 3nm risk production. The Company also enhanced EUV application, material quality and planarization for 2nm technology development. In addition, TSMC R&D worked on reduction of mask defects in EUV scanner and overlay errors, while lowering overall cost.

The Company's EUV program continued to make breakthroughs in EUV power output and stability, thereby further boosting productivity, with further progress made in EUV lithography process control, photoresist materials mask pellicle and mask manufacturing quality, thus improving yield to achieve HVM (high volume manufacturing) requirements. In the future, the Company will continue the research of next generation product manufacturing and energy saving opportunities for the EUV program's long-term goal of Net Zero Emissions by 2050.

- Mask Technology

In 2021, R&D focused on improving Critical Dimension and overlay performance of EUV masks to meet the lithography requirement of the 3nm node. Continuous advancement was made for EUV mask technology by fundamental development of mask materials and mask processes for the 2nm node.

Integrated Interconnect and Packaging

TSMC has named its fine pitch chip-to-chip connection leveraging existing wafer processes, the 3DFabric™, which includes Integrated Fan-Out (InFO) with chips embedded before interconnection, CoWoS® with chips placed onto pre-made RDL (re-distribution interconnection), and SoIC with chip-on-chip direct stacking.

TSMC offers a universal wafer level system integration (WLSI) technology family, including SoIC, system-on-wafer (SoW), and system-on-integrated-substrate (SoIS) to meet future computing systems integration scaling needs.

- 3DIC and TSMC-SoIC™

TSMC-SoIC™ is an innovative wafer-level frontend 3DIC chip stacking platform with outstanding bonding density, interconnect bandwidth, power efficiency, and thin profile. It extends Moore's Law through system-level scaling with sustainable performance gains and corresponding cost benefits. A SoIC integrated chip can be subsequently assembled using conventional packages or using TSMC's new 3DFabric™ technologies, such as CoWoS® or InFO, for next generation HPC, AI and mobile applications. Currently, TSMC's SoIC process is targeted to complete initial qualification in the second half of 2022. TSMC will continue pursue the scaling of SoIC technologies to align with the Company's advanced Si technologies for further gains in transistor density, system PPA (power, performance, area) and cost.

- Chip-Last CoWoS®

CoWoS® with Si interposer is the leading 2.5D technology for high-end HPC and AI product applications. The technology features a Si interposer with sub-micron routing layers and iCap (integrated capacitors), so that various chiplets such as SoC and high bandwidth memory (HBM) can be placed on it. The CoWoS® Gen-5 with a Si interposer area up to 2,500mm^2 to accommodate at least two SoC logic and eight HBM stacks was qualified in 2021. The new HBM3 (third generation HBM) certification on CoWoS® will be a major focus for TSMC in 2022.

- Chip-First InFO

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

• Advanced Interconnect

By enabling leading-edge technologies, TSMC's advanced interconnect continues to help our customers to strengthen their competitiveness. In 2021, development of novel materials enabled line resistance and capacitance reduction, which led to a boost in chip performance. In addition, innovative interconnect design on signal routing and power was proposed, which not only improves chip performance but also reduces cost.

Corporate Research

Innovation in devices and materials continues to drive higher performance and reduced power consumption in advanced logic technologies. In 2021, in collaboration with two leading universities, TSMC successfully demonstrated a contact with record low resistance between semi-metallic bismuth (Bi) and semiconducting monolayer two-dimensional (2D) transition metal dichalcogenides (TMDs), which enabled demonstration of the highest on-state current density for a monolayer MoS_2 2D transistor. News of this breakthrough was published in the May 2021 issue of *Nature*, one of the world's leading science journals. At the 2021 International Electron Device Meeting (IEDM), TSMC showcased another contact with further improved thermal stability, comparably low contact resistance, which also received good press coverage.

TSMC continues to research emerging high-density, non-volatile memory devices and hardware accelerators for AI and HPC applications. In close collaboration with key U.S. universities, several papers on the use of RRAM for compute-in-memory were presented at high-profile conferences including the International Solid-State Circuits Conference (ISSCC) and the Symposia on VLSI Technology and Circuits (Symp. VLSI). A memory selector is a key device to enable high density non-volatile memories. At the 2021 Symp. VLSI, TSMC demonstrated a high-performance arsenic-free Germanium-Carbon-Tellurium (GeCTe)-based threshold-type selector with record high endurance over 10^{11} cycles together with low threshold voltage ~1.3V and low leakage current ~5nA. At the 2021 IEDM, TSMC further introduced a nitrogen doped GeCTe selector that is BEOL (back end of line) compatible and has ultra-low cycle-to-cycle variation of threshold voltage. Also at the 2021 Symp. VLSI, the Company presented several novel techniques to achieve the multi-level cell (MLC) data storage for neural network applications, including an MLC phase change memory (PCM) with retention time improved by a factor of 100,000 while keeping the inference accuracy degradation within 3%.

Specialty Technologies

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

• Mixed Signal/Radio Frequency (MS/RF)

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

• Power IC/Bipolar-CMOS-DMOS (BCD)

In 2021, TSMC expanded its 12-inch BCD technology portfolio on 90nm, 55nm, 40nm and 22nm, targeting a variety of fast-growing applications for mobile power management ICs, such as dedicated 5V power switches to handle increasing power demands driven by Li-ion batteries. Production of 90nm BCD technology started smoothly, covering a wide spectrum of applications from 5V to 35V, as did mass production of 40nm BCD 20/24V technology with ultra-low-power baseline, integrated RRAM module. The Company plans to continue developing 28V and 5-16V HV devices to cover more PMIC applications.

• Micro-Electromechanical Systems (MEMS)

TSMC's piezoelectric MEMS technology was qualified to produce MEMS speakers with high audio quality and fast response in 2021. Future plans include the development of next-generation high-sensitivity piezoelectric microphones, total solutions for MEMS optical image stabilization (OIS) systems on 12-inch wafer, medical single chip ultrasound probes and automotive MEMS applications.

• Gallium Nitride (GaN)

In 2021, TSMC qualified an improved version of the first generation of 650V enhanced GaN high electron mobility transistors (E-HEMT) and went into full load mass production with over 130 adaptors launched in the market. The Company continues to expand production capacity to meet customer demand. The second generation of 650V and 100V power E-HEMT, both with 50% FOM (figure of merit) improvement, will start production in 2022. The 100V depleted GaN high electron mobility transistor (D-HEMT) completed device development and will start production in 2022. In addition, TSMC started the development of the third generation 650V power E-HEMT with delivery expected in 2025.

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

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

• Embedded Flash/Emerging Memory

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

The Company also made several major accomplishments in embedded MRAM technology. Productivity was increased in the mass production of 22nm node MRAM by simplifying integration processes, with technical qualification in 2021. Stable high yield was maintained in the 16nm node for automotive applications, with technical qualification expected in 2023. Meanwhile, TSMC achieved proof of feasibility of multi-function MRAM to meet customer requirements for high-speed and low power consumption in MCUs, AI, and VR applications.

5.2.3 Technology Platform

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

For the latest advanced technologies such as 3nm, 4nm, 5nm and TSMC 3DFabric™, the Company provides EDA tools, features and IP solutions for adoption at various design stages by customers for system innovation to meet their product requirements. To help customers plan new product tape-outs incorporating library/IP from the Company's Open Innovation Platform® (OIP) ecosystem, the OIP ecosystem features a portal to connect customers to solution providers from 16 EDA partners, six Cloud partners, 46 IP partners, 22 design center alliance (DCA) and eight value chain aggregator (VCA) partners.

5.2.4 Design Enablement

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

Tech Files and PDKs

EDA tool certification, an essential element for IP and customer designs to ensure that features meet TSMC process technology requirements, can be found on TSMC-Online™. Corresponding tech files and PDKs are available for customers to download and use with certified EDA tools. TSMC provides a broad range of PDKs for digital logic, mixed-signal, radio frequency (RF), high-voltage driver, CMOS image sensor (CIS) and embedded flash technologies across a range of nodes from 0.5μm to 3nm. In addition, the Company provides tech files for design rule checking (DRC), layout verification of schematic (LVS), resistance-capacitance (RC) extraction, automatic place and route, and a layout editor to ensure that process technology information is accurately represented in EDA tools. By 2021, TSMC had provided customers more than 38,000 tech files and 2,600 PDKs.

Library and IP

Silicon intellectual property (IP) is the basic building block of IC designs. Various IP types are available to support different customer design applications including: foundation, analog/mixed-signal, embedded memory, interface and soft IP. TSMC and its alliance partners offer customers a rich portfolio of reusable IPs, which are building blocks for many circuit designs. To support 3DIC customer needs, TSMC introduced 3DIC IP in 2019. In 2021, the Company expanded its library and silicon IP portfolio to contain more than 40,000 items, a 14% increase over 2020.

Design Methodology and Flow

Design reference flows are built on top of certified EDA tools to provide additional design flow methodology innovations that can help boost productivity. In 2021, TSMC addressed critical design challenges associated with the new 3nm and 4nm technologies through OIP collaboration and announced the availability of design reference flows for mobile and HPC platforms. In addition to process technology advancements, the Company continued to develop and offer TSMC 3DFabric™ design solutions for both 3D chip stacking and 2.5D advanced packaging technologies. For 3D chip stacking, the Company offers TSMC-SoIC™ design solutions; for 2.5D advanced packaging, TSMC updated its InFO and CoWoS® design solutions to improve design productivity. These design reference flows feature FinFET-specific and 3DFabric™ design solutions to optimize PPA (performance, power and area).

5.2.5 Intellectual Property

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

TSMC's comprehensive patent management system includes: Patent management strategies, such as Global patent deployment, Exploratory invention mining, Patent portfolio expansion, and Patent exploitation and exercise; and Patent management rules, such as Tier-based IP evaluation, Patent competition rewards, Educational patent promotion, and Patent professional training. We have established technological patent road maps by way of innovative patent strategy, strict management and risk-control measures; analyzed and monitored competitors by using intelligent patent maps; conducted core technology mining through invention workshops; expanded patent families on key technologies; filed and maintained patents by tier-based management, further enhanced patent protection through quality control on patent applications and continued to construct massive global patent portfolio with high quality; and, diversified exploitation of patent assets. In terms of patent filings, TSMC has accumulated more than 71,000 patent applications worldwide as of end of 2021, including 8,800+ applications filed in 2021. TSMC ranked No.3 among global US patent applicants, and No.1 among patent applicants in Taiwan. In terms of patent grants, TSMC has accumulated 50,000+ patents worldwide as of end of 2021, including 5,100 global patents received. TSMC ranked No.4 among U.S. Patentees, and No.1 among patent patentees in Taiwan. In terms of patent quality, the allowance rate of TSMC's U.S. applications approached 100%.

In 2013, TSMC pioneered the trade secret registration (TSR) system and the Golden Trade Secret Awards. Meanwhile, TSMC continues to consistently innovate trade secret management (TSM) services and methods. The TSR system records a wealth of technological inventions and innovations, and is a patent mining treasure trove. The TSR system also contains business trade secrets relating to capacity planning, pricing strategy, etc. The TSR system strengthens the Company's overall competitive advantage by operating in tandem with the Company operating systems, including the Contract Management System and Human Resource Management System to maximize synergy. TSMC presents the coveted "Golden Trade Secret Award" to distinguished innovators of registered trade secret cases, selected only after rigorous review to effectively promote the Company's innovative culture. As of the end of 2021, more than 1,900 Golden Trade Secret Awards have been granted and over 160,000 technical or commercial trade secrets have been registered on the TSR system. Through the following innovative measures, implemented in 2021, TSMC has continued to realize its vision of sustainable operations: (1) A "Green Trade Secret Award" initiative has been launched to encourage more innovation and registration of trade secrets with significant contribution to the area of energy management, water management, waste management, air pollution prevention; (2) A "Supply Chain Strategic Partners' Trade Secret Management Sharing" public service project has been initiated to strengthen the soft power of a sustainable supply chain. Meanwhile, TSMC also shares and promotes its TSM system and experiences with members of the Taiwan Semiconductor Industry Association to raise the industry's awareness and effectiveness of TSM. As a good corporate social citizen, TSMC will continue to initiate TSM innovation, and promote further sharing in the future.

TSMC received a AAA (the highest tier) certificate by Taiwan Intellectual Property Management System (TIPS) in December 2021, valid for 3 years.

TSMC's IP team works closely with technical teams from R&D in early stage to mass production, and actively constructs IP portfolio for each key innovative technology, including the latest 3nm and 2nm technology nodes, so as to ensure Company's technology leadership in semiconductor field; TSMC's revenue reached historical highs for 12 consecutive years, and we utilize patents and trade secrets as dual tracks to successfully protect Company's main business including process technologies, designs, manufacturing and sales, and have been strategically utilized for defense and cross-license negotiation, so as to secure freedom of business operation worldwide.

5.2.6 TSMC University Collaboration Programs

In recent years TSMC has collaborated closely with a number of prestigious universities in Taiwan to carry out a variety of joint research projects. These collaborations encourage more university professors to conduct leading-edge semiconductor research in areas such as novel devices, process and materials technologies, semiconductor manufacturing and engineering, and specialty technologies for electronic applications. Meanwhile, these projects provide hands-on training for interested students to prepare for and join the semiconductor industry after graduation. Back in 2013, TSMC established research centers at four top universities in Taiwan – National Yang Ming Chiao Tung University, National Taiwan University, National Cheng Kung University and National Tsing Hua University. In the past eight years, more than 3,200 students with backgrounds in the disciplines of electronics, physics, materials, chemistry, chemical engineering, and mechanical engineering have joined the research centers. TSMC also proactively supports the establishment of research colleges at four top universities and will continuously sponsor advanced research in the semiconductor field as well as professor recruitment. In 2019, the Company jointly launched TSMC-NTHU Semiconductor Program to enhance the quality and number of domestic semiconductor students and attract more outstanding students to a career in the semiconductor industry. In 2021, the list of school partners had grown to eight universities, including National Taiwan University, National Cheng Kung University, National Yang Ming Chiao Tung University, National Taipei University of Technology, National Taiwan University of Science and Technology, National Central University, and National Sun Yet San University, and had attracted more than 2,000 students to enroll in the program. In addition, TSMC conducts strategic research projects at top overseas universities such as Stanford, MIT, UC Berkeley and so on. The focus is on innovative capabilities in transistors, interconnect, materials, device simulation and circuit design.

TSMC University Shuttle Program

The TSMC University Shuttle Program was established to provide professors at leading research universities worldwide with access to the advanced silicon process technologies needed to develop innovative circuit design concepts. In 2021, as the COVID-19 pandemic continued to spread, remote and contactless work accelerated global industrial transformation, but it also worsened the global chip shortage. Nevertheless, TSMC continued the University Shuttle Program that links motivated professors and graduate students with enthusiastic managers at TSMC in order to promote excellence in the development of advanced silicon design technologies and to nurture new generations of engineering talents in the semiconductor field. The University Shuttle Program provides access to TSMC silicon process technologies for digital and analog/mixed-signal circuits, RF designs, non-volatile memory design and ultra-low power designs. TSMC and the University Shuttle Program participants enjoy a win-win collaboration through the program, which allows graduate students to implement exciting designs and achieve silicon proof points for innovation in various end-applications.

5.2.7 Future R&D Plans

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

Summary of TSMC's Major Future R&D Projects

Project Name	Description	Risk Production (Estimated Target Schedule)
3nm logic technology platform and applications	6th generation 3D CMOS technology platform for SoC	2021
Beyond-3nm logic technology platform and applications	3D CMOS technology platform for SoC	2024
3DIC	Cost-effective solutions with better form factor and performance for System-in-Package (SiP)	2018 - 2022
Next-generation lithography	EUV lithography and related patterning technology to extend Moore's Law	2018 - 2022
Long-term research	Specialty SoC technology (including new NVM, MEMS, RF, analog) and transistors with 8 to 10 years horizon	2018 - 2026

The projects above account for roughly 80% of the total R&D budget for 2022. Total R&D budget is estimated to be around 8% of 2022 revenue.

5.3 Manufacturing Excellence

5.3.1 GIGAFAB® Facilities

Maintaining reliable production capacity is TSMC's key manufacturing strategy. The Company currently operates four 12-inch GIGAFAB® facilities – Fab 12, 14, 15 and 18. The combined capacity of the four facilities exceeded ten million 12-inch wafers in 2021. Production within these facilities support 0.13μm, 90nm, 65nm, 40nm, 28nm, 20nm, 16nm, 10nm, 7nm and 5nm process technologies, including each technology's sub-nodes. 3nm risk production is currently on track at Fab 18, with plans to start volume production in the second half of 2022. Besides, an additional portion of capacity is built at Fab 12 for R&D work on leading-edge manufacturing technologies, which currently supports the technology development of 2nm nodes and beyond.

The GIGAFAB® facilities are coordinated by a centralized management system known as super manufacturing platform (SMP) to provide customers with consistent quality and reliability, improved flexibility to cope with demand fluctuations, faster yield learning and time-to-volume production, as well as lower-cost product requalification.

5.3.2 Engineering Performance Optimization

As advanced technology continues to evolve and IC geometry keeps shrinking, the need for tighter process and quality control becomes extremely challenging for manufacturing. TSMC's unique manufacturing infrastructure is tailored to handle a diversified product portfolio, which uses strict process control to attain tightened specs and meet higher product quality, performance and reliability requirements. To achieve excellence in both quality and manufacturing, TSMC's process control systems have been integrated with numerous intelligent functions. Through intelligent detection, smart diagnosis, and cognitive action, the Company has demonstrated remarkable results in yield enhancement, quality assurance, workflow improvement, fault detection, cost reduction and shortening of the R&D cycle.

In the meantime, with the advent of the 5G era's stricter quality requirements for mobile, high performance computing (HPC), automotive and the Internet of Things (IoT), TSMC has further implemented artificial intelligence (AI) and machine learning technologies and integrated foundry know-how to build up a knowledge-based engineering analysis platform and leverage digital transformation to continuously optimize engineering performance.

5.3.3 Agile and Intelligent Operations

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

5.3.4 Digital Transformation

To meet the strong, pent-up demand of the ongoing pandemic era, TSMC continues to implement technology to transform the "automatic fab" into the "intelligent fab," with the simultaneous improvement of the product quality, equipment capacity, and personnel effectiveness. Intelligent fab has integrated the domain knowledge of semiconductor manufacturing, kept the system self-learning, and expanded the application of AI and machine learning, which includes dispatching, equipment tuning, process control, equipment diagnosis and maintenance, and quality inspection. As the result, today's engineers can focus on problem solving. This digital transformation platform will free up the limitations of workplace, combine the expertise of those in different locations, and make centralized management of global manufacturing a reality.

5.3.5 Raw Materials and Supply Chain Management

In 2021, TSMC continued to review and resolve supply issues and quality issues as well as potential supply chain risks through the collaboration of teams formed by fab operations, quality control and business organizations. TSMC also worked with suppliers to further advance material and process innovation, improve quality and create recycling savings with benefits from win-win solutions.

Raw Materials Supply

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

Suppliers Accounting for at Least 10% of Annual Consolidated Net Procurement

Unit: NT$ thousands

Supplier	2021			2020		
	Procurement Amount	As % of 2021 Total Net Procurement	Relation to TSMC	Procurement Amount	As % of 2020 Total Net Procurement	Relation to TSMC
Company A	14,469,081	20%	None	13,144,243	20%	None
Company B	13,352,067	19%	None	11,010,731	17%	None
Company C	7,784,013	11%	None	6,445,912	10%	None
Others	35,181,148	50%	-	35,959,770	53%	-
Total Net Procurement	70,786,309	100%	-	66,560,656	100%	-

- **Reason for Increase or Decrease:** No significant change.

5.3.6 Quality and Reliability (Q&R)

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

In the technology development stage, the Q&R organization helps customers design in superior product reliability. In 2021, Q&R worked with R&D in advanced logic, specialty and advanced packaging technologies throughout development and qualification stages continuously to ensure meeting commitments to customers for device characteristics, process yield and product reliability.

For advanced logic technology, Q&R in 2021 successfully certified technology quality and reliability for risk production of 4nm FinFET, an enhanced version from 5nm. For specialty technologies, Q&R successfully completed IP qualification of 40nm embedded RRAM (resistive random access memory). In high voltage technologies, Q&R qualified second generation 0.5μm 650V GaN. In addition, TSMC's advanced packaging solutions enabled system improvement of the wafer level process by integrating the frontend wafer process and the backend chip packaging. In 2021, Q&R achieved qualification of the TSMC 3DFabric™ technology platform and successfully qualified larger scale InFO and CoWoS® technologies for HPC products and to provide better system level integration through heterogeneous chip package interaction.

To continuously reduce product defects, enhance process controls, facilitate early detection of abnormalities and prevent quality problems, Q&R collaborates with other operational entities to establish real-time defense systems using advanced statistical methods and quality tools. Since 2017, the Company's Q&R and fabs have worked together on enhancements for automotive product quality improvement, including design rule implementation and migration to Automotive Quality System 2.0. This covers process capability requirements to tighten in-line and wafer acceptance testing in fabs and the handling of maverick wafers and lots. Q&R also provides dedicated resources for field/line return analysis and timely physical failure analysis (PFA) for process improvement to meet automotive customers' stringent DPPM (defective parts per million) requirements.

To stimulate employee problem-solving and develop related quality systems and methodologies, Q&R held several company-wide symposia and training programs on total quality excellence (TQE) and quality audit in 2021. Q&R is also accelerating digital transformation in area of raw materials management, statistical process control (SPC), metrology and laboratory analysis. Use of machine learning to identify correlation has enabled intelligent which helped overcome the impact of the COVID-19 pandemic and make seamless quality control across worldwide fab network a reality. In 2022, Q&R will continue the development of employee capabilities by promoting quality methods and professional trainings and applying machine learning to enhance TSMC competitiveness.

Q&R is committed to green manufacturing, responsible supply chain and sustainable management practices. In 2021, Q&R set up a new advanced chemical laboratory to enhance continuous quality monitoring of raw materials. This helped R&D make significant innovations in materials and it provided services to enhance the technologies in the industry supply chain. Q&R collaborates with the corporate ESH organization to ask suppliers to declare that their materials to ensure compliance with international regulation for carcinogenic, mutagenic and reprotoxic (CMR) substances and to classify all risky materials and carry out test sampling. In 2020, Q&R had 100% inspection capability for CMR substances and shared its inspection methods and capabilities with major material suppliers to enhance monitoring of hazardous substances and control capability in the supply chain. Furthermore, in 2021 Q&R assisted TSMC subsidiaries in setting up inspection capability for hazardous substances to enhance corresponding monitoring and control capability for industry supply chain. At the same time, Q&R provided state of art material analysis and applied the best knowledge management method to assist the capacity expansion of new raw material production lines or new suppliers with quality fundamental to optimize the balance between quality and capacity.

Q&R also worked with manufacture teams for the recycling and reuse of chemical acids and successfully achieved several impurity improvements in recycling chemical acids during 2020 and enabled several recycling chemicals to achieve the quality level for electronic grade in 2021. In 2022, Q&R will continue sharing its technical knowledge to assist chemical suppliers in developing further recycling and reuse projects and will work with operations to implement engineering validation for recycling chemicals to achieve TSMC's quality requirements and the sustainable goal of friendly environment. Q&R is also committed to the continual improvement of local supply chains and developing local talent. In 2021, Q&R again collaborated with Semiconductor Equipment and Materials International (SEMI) to hold the third Strategic Materials Conference (SMC) in Taiwan to motivate talented domestic personnel and share the win-win strategy for technology and sustainable development as well as ESG (environmental, social, and governance) in TSMC and industrial wide topics to elevate the competitiveness of the local supply chain.

TSMC fully supports continuous improvement programs to strengthen the work culture, improve product quality and production efficiency, reduce production costs, and improve customer satisfaction. These programs encourage colleagues to strive for excellence, drive cross-departmental observation and learning, and enhance their innovative and problem-solving abilities – all traits that greatly contribute to achieving a win-win outcome of honing TSMC's competitive edge and building customer satisfaction. In addition to internal cross-organizational learning and exchange, TSMC participates in the Taiwan Continuous Improvement Competition to promote the development of other local industries by sharing its experience, and to enhance the problem-solving and innovation ability of its colleagues by observing the improvement methods of other industries. In 2021, TSMC's outstanding performance was recognized with five gold awards, three silver awards and one "best improvement and innovation" award. In addition to Operations organizations that were recognized, the IT (information technology) organization participated in the competition for the first time and was also awarded a gold award. That is consistent with our continue focus to proliferate total quality culture from technology and production to every organization in TSMC. At the same time, Q&R coached domestic material suppliers to participate in the competition for local suppliers' quality culture and capability enhancement. In 2021, Q&R encouraged 67% of backend material suppliers to participate in the competition to promote the quality culture of continual improvement.

Thanks to qualification in technology development, real-time defense systems and innovative applications in semiconductor manufacturing services, as well as its continuous quality improvement culture, TSMC had no major product recalls in 2021. Meanwhile, a third-party audit verified the effectiveness of TSMC's quality management systems in compliance with IATF 16949: 2016 and IECQ QC 080000: 2017 certificates requirements. In 2021, TSMC's four backend Fabs also acquired the certification of American National Standards Institute ANSI/ESD (Electrostatic Discharge) S20.20 standard for the first time. Regular customer feedback indicates that products shipped from TSMC have consistently met or exceeded all field quality and reliability requirements. In these ways, TSMC helps customers improve time-to-market delivery and competitiveness with excellent, reliable products for the five major growth markets the Company serves: mobile communications, high performance computing (HPC), the Internet of Things (IoT), automotive and digital consumer electronics.

5.4 Customer Trust

5.4.1 Customers

TSMC's customers make a wide variety of products that deliver excellent performance across the semiconductor industry. Customers include fabless semiconductor companies, system companies, and integrated device manufacturers such as Advanced Micro Devices, Inc., Broadcom Inc., Intel Corporation, MediaTek Inc., NVIDIA Corporation, NXP Semiconductors N.V., OmniVision Technology, Inc., Qualcomm Incorporated, Renesas Electronics Corporation, and many more worldwide.

Customer Service

TSMC is committed to providing the best possible service, which is critical to customer satisfaction, retention, relationship enhancement and attracting new customers. TSMC has established a dedicated service team that strives to provide world-class services to support customers in product design, mask making, wafer manufacturing, and backend services, hence TSMC can increase customer satisfaction and win customer trust in order to maintain sales and profitability of the company.

To improve customer interaction on a real-time basis, TSMC-Online™ offers a suite of web-based applications to provide more proactive customer service and support in design, engineering and logistics. Customers thus have 24-7 access to critical information and are able to create customized reports. TSMC-Online™ facilitates design collaboration by maintaining data availability and accessibility and providing customers with accurate up-to-date information at each stage of design process. Engineering collaboration includes engineering lots, wafer yields and wafer acceptance test analysis, as well as quality and reliability data. Logistics collaboration includes information on wafer fabrication, backend processes, and order shipments.

Customer Satisfaction

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

Customer Information Protection

TSMC complies with applicable regulations and international standards in terms of customer information protection and has received ISO 27001 international information security certification. Relevant proprietary information protection policies and standard work process are established to ensure only authorized personnel can access the engineering and production data of a specific customer.

Customers Accounting for at Least 10% of Annual Consolidated Net Revenue

Unit: NT$ thousands

Customer	2021			2020		
	Net Revenue	As % of 2021 Total Net Revenue	Relation to TSMC	Net Revenue	As % of 2020 Total Net Revenue	Relation to TSMC
Customer A	405,402,955	26%	None	336,775,511	25%	None
Customer B	153,740,831	10%	None	N/A (Note)	N/A	None
Customer C	N/A	N/A	None	167,390,758	12%	None
Others	1,028,271,251	64%	-	835,088,542	63%	-
Total Net Revenue	1,587,415,037	100%	-	1,339,254,811	100%	-

Note: Revenue less than 10% of the Company's net revenue.

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

5.4.2 Open Innovation Platform® Initiative

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

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

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

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

- the foundry segment's earliest and most comprehensive electronic design automation (EDA) certification program, delivering timely design tool enhancement required by new process technologies;
- the foundry segment's largest, most comprehensive and most robust silicon-proven IP (intellectual properties) and library portfolio; and
- comprehensive design ecosystem alliance programs covering market-leading EDA, IP, and design service partners.

TSMC's OIP alliance consists of 16 EDA partners, six Cloud partners, 46 IP partners, 22 design center alliance (DCA) partners, and eight value chain aggregator (VCA) partners. TSMC and partners work together proactively and engage much earlier and deeper than ever before in order to address mounting design challenges at advanced technology nodes. Through this early and intensive collaboration effort, TSMC's OIP is able to deliver the needed design infrastructure with timely enhancement of EDA tools, early availability of critical IPs and quality design services when customers need them. Taking full advantage of the process technologies once they reach production-ready maturity is critical to customers' success. Hence, this helps to achieve design technology co-optimization (DTCO) among TSMC process technologies, OIP design solutions and customer product designs.

TSMC's OIP partner management portal facilitates communication with ecosystem partners for efficient business productivity. Designed with a highly intuitive interface, this portal can be accessed via a direct link from TSMC-Online™.

TSMC held its online OIP Ecosystem Forum in October 2021. This annual event demonstrates how TSMC and its ecosystem partners jointly develop design solutions on top of TSMC's advanced technologies through OIP collaboration. It is also a good opportunity to maintain contact with customers and ecosystem partners during the COVID-19 pandemic. At the forum, TSMC made key presentations on 3nm that continues the full-node Power Performance Area (PPA) scaling trend together with the offering of high density and high performance libraries and design solutions for the support of smartphone and HPC design applications. The Company also made presentations on 4nm and 5nm design solutions and ecosystems that have already been applied to actual customer chip production. Other presentation topics included: N12e™, featuring further enhancement to support 0.4V operation with design solutions for IoT products that can further reduce power consumption; comprehensive automotive design enablement platform (ADEP) with design solutions and ecosystems previously developed for 16nm and 7nm and the same ADEP in 5nm, already under development; comprehensive RF technology portfolio to support general RF, millimeter Wave and RF frontend products; and TSMC 3DFabric™ design solutions that include TSMC-SoIC™ for 3D chip stacking, and InFO (Integrated FanOut) and CoWoS® (Chip on Wafer on

Substrate) for 2.5D advanced packaging currently available to support chip, package, system integration, implementation and verification for improved system performance. The availability of the aforementioned design ecosystem solutions will help customers successfully pursue opportunities in all major markets: mobile, high performance computing, the IoT, automotive and digital consumer electronics.

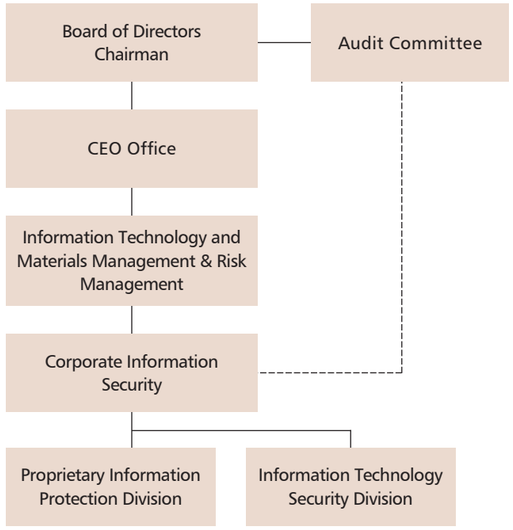
5.5 Information Security Management

5.5.1 Information Security Policy and Organization

Technology leadership, manufacturing excellence, and customer trust are the key advantages for TSMC's continued growth. The Company is committed to information security and confidentiality protection for its customers, shareholders, and partners. To this end, TSMC has clearly formulated relevant policies, management procedures, and regulations to achieve complete information security and confidentiality protection. TSMC adheres to the spirit of corporate sustainable management, and has issued the "Information Security Declaration" declaring the Company's determination to promote and actively strengthen information security and confidential information protection mechanisms, all for the purpose of defending the interests of its customers and partners.

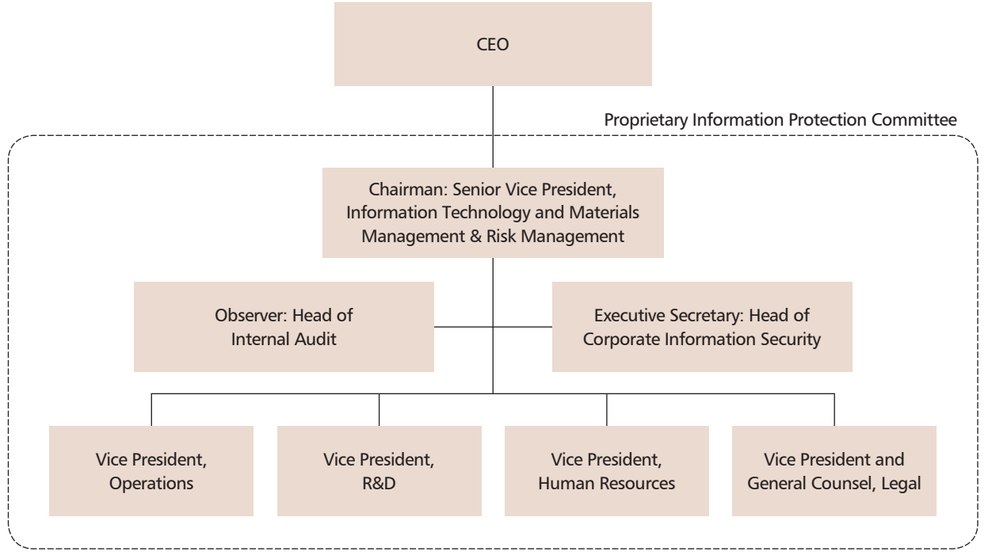
In order to achieve excellent governance of TSMC's information security, in 2019 TSMC established the Corporate Information Security (CIS) organization, which is responsible for formulating and planning company information security policies and implementation procedures. Through policy implementation and regulatory compliance checks, TSMC continuously reviews the effectiveness of information security risk control mechanisms, and is constantly strengthening the Company's information security. The head of CIS reports to the Audit Committee every six months on the implementation plan and result.

Corporate Information Security Organization Structure



TSMC executives are involved in planning the direction and implementation of TSMC's information security strategy with the goal of achieving excellent information security management. The Company has established an Exclusive Information Protection Committee, chaired by the Senior Vice President of Information Technology and Materials & Risk Management. The Vice Presidents of Legal, Human Resources, R&D, and Operations are also members of this Committee, and the head of CIS serves as its Executive Secretary. The Committee holds quarterly meetings to review and decide information security and information protection policies to ensure the realization of TSMC's goals and commitments in this area.

Proprietary Information Protection Committee Structure



5.5.2 Information Security Management Strategy and Resources

CIS actively strengthens security and confidentiality protection mechanisms to maintain TSMC's competitiveness. To achieve TSMC's information security management goals, CIS sets clear regulations, standards, and practices, enhances continuously the Company's management system and technology, and implements comprehensive risk controls. CIS regularly performs information security risk assessments and sets its priorities based on the magnitude and probability of a risk, and the cost in reducing such risk. CIS adopts the plan-do-check-act (PDCA) methodology to structure multi-layer information security defenses and establish information security key performance indicators (KPI). In 2021, TSMC invested in excess of NT$1 billion to strengthen information security, employs currently more than 500 employees for information security-related activities, and has more than 1,000 external security personnel engaging in the physical aspects of information security related services.

5.5.3 Information Security Incident Handling and Notification

TSMC has established enterprise risk management mechanism and information security incident handling procedures. The mechanism and procedures define relevant process and measures including information security incident notification procedure, designation of personnel responsible for handling material information security incidents, assessment of losses suffered and additional measures needed, assessment of impact of information security risks on the Company's financial and operations, and proposed countermeasures to information security risks. In 2021 and as of the date of this Annual Report, TSMC has not suffered any losses due to material information security incidents.

5.6 Human Capital

Human capital is TSMC's most treasured asset. Provide employees with meaningful work content, continuous learning, safe and fun work environment, high-quality compensation and benefits, and build the company into a diverse and inclusive environment. TSMC goes beyond this, however, by actively encouraging employees to nurture and enjoy a healthy family life, develop personal interests, expand social participation, and, in general, live a happy life.

5.6.1 Human Rights Policy and Specific Actions

TSMC believes that respecting human rights and promoting a decent work environment are important throughout the Company and its supply chain. TSMC abides by local laws and regulations in all countries and regions where we operate, and upholds the human rights of all workers, including regular, contract and temporary employees, and interns. We also require our suppliers to act in the same fashion, as addressing human rights issue in complex supply chains is a shared responsibility. We support the *UN Universal Declaration of Human Rights (UDHR)*, and are committed to treating all workers with dignity and respect as understood by international human rights standards, including *The International Bill of Human Rights*, The International Labour Organization's (ILO) *Declaration on Fundamental Principles and Rights at Work*, *The UN Guiding Principles on Business and Human Rights (UNGPs)*, *The OECD Guidelines for Multinational Enterprises* and *The Ten Principles of The United Nations Global Compact (UNGC)*. We also align our actions with the *Responsible Business Alliance (RBA) Code of Conduct*. The guiding principles for TSMC's Human Right Policy are as follows, and *TSMC's Supplier Code of Conduct* requires all of our suppliers to follow the same standards.

Guiding Principles

- Embed respect for economic, social, cultural, civil, and political rights, as well as the right to development, in the way we operate
- Provide a safe and secure work environment that is free of harassment
- Eliminate unlawful discrimination and ensure equality in the workplace
- Zero tolerance for child labor
- Forbid forced labor
- Commit to responsible sourcing of minerals
- Protect labor rights of vulnerable groups or marginalized groups such as indigenous peoples, women, migrant workers, contracted labor and persons with disabilities
- Comply with all applicable wage laws and regulations, and legal limits to working hours
- Provide fair living wage and pay in full and on time with pay slips to state legitimate deductions
- Enable a communication-friendly environment and maintain an open-style management system
- Support the physical and psychological well-being of employees, and the balance between work and life
- Make diverse open dialogue channels available for stakeholders such as suppliers, business partners, and others to report concerns or suspected violations to the Company, including ways to report anonymously
- Monitor and assess relevant risks, practices, and impacts regularly to respond to evolving situations and stakeholders' needs

In 2021, the Company used the Responsible Business Alliance's Self-Assessment Questionnaire (SAQ) to identify the greatest risks regarding "labor, health and safety, environment, and ethics" matters and to formulate substantive actions and managerial response. The SAQ scores of each of TSMC's operating fabs were in the low risk range, defined as 88 points or above.

In 2021, TSMC held a course on "TSMC Human Rights Policy: Anti-Harassment." A total of 58,904 colleagues completed the training with the pass rate for the post-exam of 100%. The total number of training hours for all human rights related training in 2021 was 181,314 hours with a total of 62,822 colleagues completed the training, accounting for 96% of all employees. As for the person-times of participants, the total number is more than 150,000.

TSMC respects the rights of employees to form and join labor unions of their own choosing. The Company regularly holds labor-management meetings and listens to employee concerns through diverse internal communication channels to ensure a harmonious relationship between labor and management.

5.6.2 Diversity and Inclusion

TSMC firmly believes in the value of a diverse workplace and cultivates future semiconductor talents in an inclusive fashion enabling our industry to unlock the full potential of all human resources available. TSMC further believes that the mix of employees should reflect that of society. A diversified management and employee composition will help the Company strengthen its competitive advantages and achieve sustainable development.

In 2021, TSMC established a women's employee resource group – "Women@TSMC", to provide a platform for female employees to support each other, strengthen the network within the Company, and encourage female employees to dare to pursue their career goals and personal development. The Company has set the goals that 30% of newly hired technical employees be female and 20% of managers be female by 2030.

5.6.3 Workforce Structure

At the end of 2021, TSMC had 65,152 employees worldwide, including 6,635 managers, 31,920 professionals, 6,620 assistants and 19,977 technicians. The following two tables summarizes the makeup of TSMC's workforce and female in management as of the end of February 2022:

Workforce Structure

		12/31/2020	12/31/2021	02/28/2022
Job	Managers	5,857	6,635	6,741
	Professionals	27,767	31,920	32,161
	Assistant Engineer/Clerical	4,832	6,620	6,865
	Technician	18,375	19,977	20,164
Total		56,831	65,152	65,931
Gender	Male (%)	62.9%	64.6%	64.8%
	Female (%)	37.1%	35,4%	35.2%
Education	Ph.D.	4.4%	4.1%	4.1%
	Master's	46.7%	47.3%	47.2%
	Bachelor's	25.7%	27.6%	27.8%
	Other Higher Education	9.8%	8.9%	8.9%
	High School	13.3%	12.0%	12.0%
Average Years of Age		36.4	36.0	36.0
Average Years of Service		9.1	8.6	8.6

Female Ratio in Management

	12/31/2020	12/31/2021	02/28/2022
Female Ratio in Junior Management	13.0%	13.4%	13.6%
Female Ratio in Senior Management	11.8%	12.5%	12.6%
Female Ratio in Top Management	10.0%	8.3%	8.3%

Note: Junior management positions include first-line managers; top management positions include Vice Presidents and higher as well as CEO.

5.6.4 Recruitment

Key elements of TSMC's success and growth depend on a common vision and values shared by the Company's employees. To strengthen growth momentum, the Company is committed to recruiting top-notch professionals in all positions. TSMC is an equal opportunity employer and practices open and fair recruitment. The hiring principles are "integrity" and "ability," and the Company evaluates all candidates according to their qualifications as related to the requirement of each position without regard to race, gender, age, religion, nationality or political affiliation.

TSMC adheres to its core values and continues to move forward with a lofty vision. It has always attracted the attention of many young and new blood in Taiwan. In 2021, "The New Generation's Most Yearning Enterprise" was held by *Cheers Magazine*. In the survey, it has won the championship for five consecutive years. In order to meet the continuous growth of operations, TSMC employed over 12,000 colleagues worldwide in 2021.

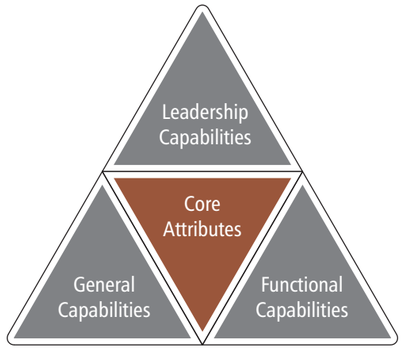
5.6.5 People Development

Employee development is an integral and critical factor for the growth of any company, and at TSMC it is goal oriented, disciplined and planned. The Company is committed to expanding and fulfilling employee potential by providing meaningful work in a world-class workplace. TSMC is also committed to cultivating a consistent and diverse learning environment. To this end, the Company has initiated the TSMC Employee Training and Education Procedure to ensure that the development objectives of both the Company and the individual can be achieved through the integration of internal and external training resources.

TSMC talent development strategies include equipping people with future capabilities and unleashing learning momentum. The Company attaches great importance to the

early development of employees' potential and actively seeks to fill the talent pipeline. Based on "TSMC Capability Model," employees' specific development needs are integrated and implemented through experience learning (70%), feedback and guidance (20%) and education and training (10%). At the same time, TSMC integrates diverse and multiple classroom and online learning resources to enhance employee awareness of independent learning opportunities to continuously promote employee growth. The Company provides on-the-job training, classroom training, e-learning, coaching, mentoring and job rotation and strives to create a learning-rich atmosphere.

TSMC Capability Model



Using TSMC capability model as the basis for talent development, the Company emphasizes core attributes (Character, Perseverance, Resilience, Initiative, Innovation, Judgement and Broadness of Mind & Breadth/Depth of Knowledge) in talent selection and development. Different training roadmaps for leadership and functional capabilities are provided for employees in different positions. At the same time, TSMC also provides a series of training courses on leadership and functional and general capabilities, allowing employees to choose independently according to their individual development needs and preferences.

TSMC provides the following training programs:

Leadership Capabilities

- Management – management development programs, including mandatory, elective and other learning programs, are tailored to the needs of managers at all levels based on their managerial capabilities and responsibilities.

Functional Capabilities

- Professional/functional – technical and professional training required by different functions within the Company. TSMC offers training courses on equipment engineering, process engineering, accounting, information technology and so forth.
- Direct labor – for production-line employees to acquire the knowledge, skills and approaches they need to perform their jobs well and to pass certification for operating equipment. Includes direct labor skill training, "Train the Trainer" training, and manufacturing leadership training.

General Capabilities

- New employee – basic training and job orientation. In addition, the newcomers' managers and a well-established buddy system are in place to support new hires in their assimilation process regarding both corporate culture and work requirements.
- General training as required by government regulations and/or the Company policies, focused on basic subjects for all employees as well as courses tailored to specific job functions. Topics include industry-specific safety, workplace health and safety, ethics and regulatory compliance, human rights, sexual harassment prevention, quality, and fab emergency response.
- English enhancement program – including online English webinars, English one-on-one consulting services, business English workshops, and the English learning zone to strengthen employees' English capability in support of TSMC's global business goals.
- Personal effectiveness training addressing topics related to professional skill sets including presentation skills, innovation, motivation and teamwork.
- Customized programs tailored to the needs of the organization and/or the employee's individual development plan.

In 2021, TSMC conducted over 1,344 internal training sessions and provided over 3.18 million hours of training and a total of more than 2.24 million attendees participated. Based on the Company's 65,152 total employment, average annual training time per employee increased to 48.9 hours. TSMC training expense reached to over NT$131 million.

Apart from internal training resources, TSMC employees are also subsidized when pursuing external short-term courses, for-credit classes and degrees.

5.6.6 Competitive Overall Compensation

TSMC employees enjoy a comprehensive compensation and benefits program above the industry average. TSMC provides a diversified compensation program that is competitive externally, fair internally, and adapted locally. TSMC adheres to the philosophy of sharing wealth with employees in order to attract, retain, develop, motivate and reward employees. Thanks to solid business results over the past years, the actual total compensation received by employees has stayed above the industry average.

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

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

The same philosophy applies to TSMC's compensation programs in overseas subsidiaries. In addition to providing employees with a locally competitive base salary, annual bonuses are granted as a part of total compensation, in line with local regulations, market practices, and the overall operating performance of each subsidiary, to promote employee commitment and development.

TSMC believes that the long-term ownership of company shares by corporate officers helps align their interests with those of all shareholders, therefore, the Company formulated Corporate Officer Shareholding Guidelines in 2020. The required value for Chairman, CEO, and other corporate officers' holding of TSMC shares is proportional to their annual base salary (18 times for Chairman and CEO, 9 times for other officers in Taiwan, and 3 times for overseas officers). Officers shall fulfill the required value within 3 years of appointment. Officers keep the required value for the entire period of employment. Furthermore, to attract and retain corporate executives and to link their compensation with shareholder interests and Environmental, Social, Governance (ESG) achievements, TSMC established Employee Restricted Stock Awards Rules in 2021.

5.6.7 Employee Benefit System Superior to Statute

TSMC encourages employees to strive towards long-term Company development. For example, in addition to twelve national holidays per year, seven memorial days are provided as holidays. The Company also provides comprehensive group insurance plans to employees free of charge. Coverage includes life insurance, accident insurance, hospital insurance, cancer insurance, and business travel insurance. Employees also have the flexibility to participate in group insurance for their families at lower prices. The group insurance coverage is extended to employees on legal unpaid leaves. To better support new hires, TSMC offers one day of annual leave for every two months of service in the first year. In addition, TSMC provides pensions, financial assistance for emergencies, subsidies for marriage, childbirth and funerals, as well as discounts in designated shops.

To provide support in their personal and work lives, TSMC offers employees parental leave in accordance with local laws and regulations, provides comprehensive leave management system, and has set up four kindergartens for fabs in Taiwan. Employees have flexibility in making use of their vacation days to take care of their children. Employees who need to take long leaves of absence for military service or severe injuries can also apply for unpaid leave, and then apply for reinstatement after the expiration of the period.

All TSMC facilities are equipped with 24-hour health centers, where healthcare management professionals and appointed onsite physicians provide quality services beyond those required legally. The health centers work with hospitals and Employee Assistance Program services providers to offer comprehensive support for the emotional and physical well-being of employees. Annual checkups for all employees are provided as well. The company encourages employees to exercise regularly by subsidizing 63 sports clubs, improving exercise facilities, and holding regular sports events to help employees find peers with similar sports interests and balance their work and life.

- Convenient onsite services and amenities such as in-fab cafeterias, convenience stores, and other services
- Comprehensive health management services, including in-fab clinic services, post health-exam follow-up activities, and employee assistance programs
- Diverse employee welfare programs: leisure and art events, encouraging employees to participate in hobby clubs; vibrant sports center and onsite preschool service to meet employees' needs for child care; festival bonuses and emergency subsidies are also available to address employees' needs

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

5.6.8 Diverse Employee Recognition

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

The award programs include:

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

Apart from above recognitions, there are function-wide awards dedicated to innovation, such as the Idea Forum, the Total Quality Excellence Award and the ESG Award, which recognize employee initiative and continuous implementation of innovative practices. In addition, TSMC encourages employees to participate in external talent activities and competitions. In 2021, distinguished TSMC employees continued to be recognized through a host of awards, such as the Model Labor Award, the Excellent Young Engineers Award, the Outstanding Engineer Award, the Taiwan Continuous Improvement Awards, the National Manager Excellence Award and the National Industrial Awards.

5.6.9 Employee Engagement

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

Employee Communication

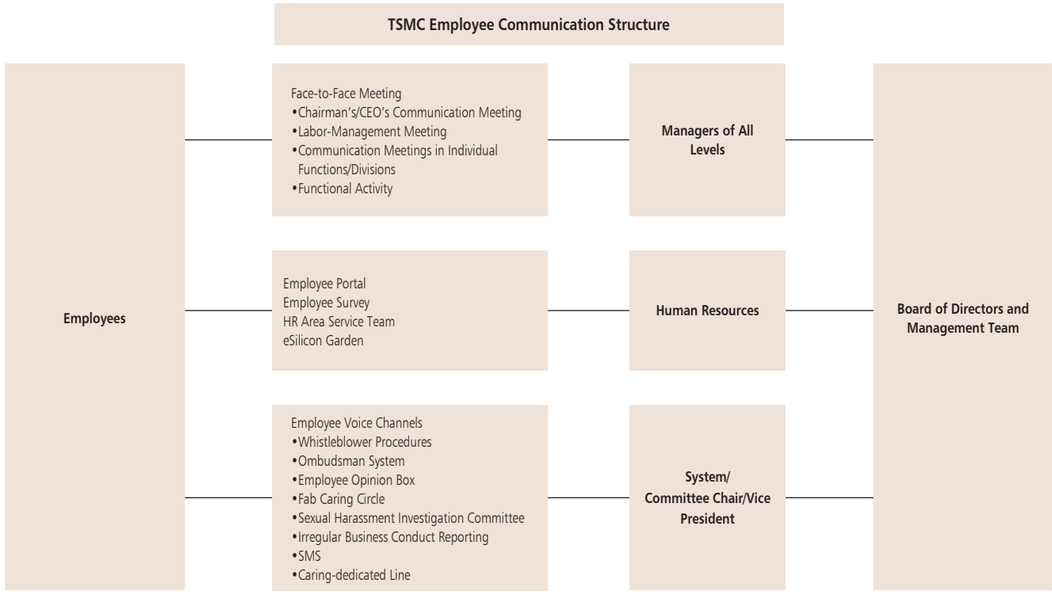
TSMC values employee communication and is committed to keeping communication channels open and transparent for management, subordinates and peers. The Company is committed to ensuring that employees are able to communicate openly and share ideas and concerns with management regarding work conditions and management practices without fear of discrimination, reprisal, intimidation or harassment.

TSMC makes continuous efforts to listen to the voice of employees and to facilitate mutual and timely employee communication, based on multiple channels and platforms, which in turn fosters harmonious labor relations.

TSMC supports a host of various communication channels, including:

- Communication meetings for various levels of managers and employees; for example, the executives communication meeting, skip levels and communication meetings in individual functions/divisions
- Quarterly labor-management meetings to provide business updates and discuss issues of concern for employees
- "Employee survey on Core Values" taken biennially to understand the Company's implementation of core values and employees' commitment
- "Global Employee Engagement Survey" taken biennially to systematically understand the work experience of employees, and to enhance employees' engagement and sense of belonging toward company
- Periodic employee pulse surveys and service satisfaction surveys to selected employees, with follow-up actions based on survey findings
- myTSMC employee portal, an internal website featuring the Founder's, Chairman's, and CEO's talks, corporate messages, executive interviews, and other activities of interest to employees
- *eSilicon Garden*, TSMC's newsletters providing real-time updates on major activities of the Company, as well as inspirational content featuring outstanding teams or individuals
- Two channels for reporting complaints regarding managerial, financial, auditing, ethics and business conduct issues:
  - The whistleblower reporting system administered by the Audit Committee
  - The ombudsman system administered by a senior manager appointed by the CEO
- The Employee Opinion Box, which provides an opportunity to submit suggestions or opinions regarding work and the overall work environment
- The Fab Caring Circle in each fab, which addresses issues related to employees' work and personal life; the system is dedicated mainly to the Company's direct laborers
- Sexual harassment investigation committee, a channel dedicated to ensuring a work environment free from the threat of sexual harassment; the committee consists of three directors appointed by the CEO, one from human resources, one from legal affairs, and the third from other organizations

Employee Communication Channels



During 2021 and as of the date of this Annual Report, TSMC has not incurred any labor-dispute related losses. However, the Company was fined for the following labor inspection results: NT$20,000 issued on 01/06/2021 due to clerical errors resulting in wages not being paid in full directly to an employee (Labor Standards Act Article 22 Paragraph 2). NT$80,000 issued on 04/20/2021 for overtime wages not being timely paid (Labor Standards Act Article 24 Paragraph 1). NT$20,000 issued on 07/14/2021 for overtime applications not being timely processed (Labor Standards Act Article 23 Paragraph 1). NT$50,000 issued on 07/14/2021 for the extension of working hours combined with the regular working hours exceeding twelve hours a day (Labor Standards Act Article 32 Paragraph 2). NT$20,000 issued on 07/14/2021 for employees not having a break for at least thirty minutes after having worked for four consecutive hours (Labor Standards Act Article 35). NT$360,000 issued on 08/04/2021 for overtime applications not being timely processed and the extension of working hours combined with the regular working hours exceeding twelve hours a day (Labor Standards Act Article 24 Paragraph 1 and Article 32 Paragraph 2). The Company has reviewed its working hour management process, established working hour management indices, additionally defined break time in Work Rules to provide flexibility for employees, and strengthened the communication of these matters and promotion of the policies to managers and employees.

5.6.10 Retention

The Global Employee Engagement Survey was launched in 2021. Based on WTW's High Performance Employee Experience (HPEX) Model, it strives to systematically understand TSMC employees' work experience and identify the Company's areas of strengths and opportunities. The Company and each department develop actions from the survey results in order to create win-win solutions for the Company and all its colleagues.

The survey scope in 2021 included TSMC's Taiwan Fabs, TSMC (China), TSMC (Nanjing), WaferTech, TSMC North America, TSMC Canada, TSMC Europe B.V, TSMC Japan, and TSMC Korea. VisEra was not included in the survey due to its different industrial background. The valid response rate was 93% with a total of 55,491 respondents.

The survey results showed that employees agree TSMC has strong competitiveness in the market who can quickly respond to market dynamic and is able to provide innovative products and services to enable the value creation of our customers. Colleagues are also very positive about the speed of decision-making and the continuous pursuit of improvements in working process or organizational efficiency. In addition to above significant advantages of TSMC, we are continuously enhancing the following:

1. To keep communication channels open and to create mutual respectful environment, so that our colleagues are encouraged to put forward their ideas, and supervisors are able to accept different opinions and make corresponding changes in a timely manner.
2. Enable supervisors to unleash potential of our employees, in order to encourage and inspire our colleagues find out the joy of work, feel more involved, and to gain the high level of accomplishment.
3. Encourage supervisors better utilize non-monetary reward tools to recognize and retain talents.

TSMC's employee turnover rate was 6.8% in 2021 which was higher compared to 2020 yet it still falls in the defined healthy range of 5% - 10%.

5.6.11 Retirement Policy

TSMC's retirement policy is set according to the labor standard laws and labor pension practices of various respective regions. Thanks to the Company's sound financial condition, it is able to ensure solid pension contributions and payments, which encourages employees to make long-term career plans and further deepen their commitment to TSMC.

5.7 Material Contracts

TSMC is not currently a party to any material contracts, other than those entered into in the ordinary course of its business. The Company's "Significant Contingent Liabilities and Unrecognized Commitments" are disclosed in Annual Report section (II), Financial Statements, page 70-71.

1987
Leases 6-inch fab (Fab 1) from the Ministry of Economic Affairs and ITRI

1992
Fab 2 Module B begins production

1993
Begins construction on Fab 3, TSMC's first 8-inch fab

1997
Fab 4 & Fab 5 begin production

1999
Breaks ground on the first full-scale 12-inch fab, Fab 12, in Hsinchu Science Park

2000
Fab 6 begins production



6. Financial Highlights and Analysis

6.1 Financial Highlights

6.1.1 Condensed Balance Sheet

Condensed Balance Sheet from 2017 to 2021 (Consolidated)

Unit: NT$ thousands

Item \ Year	2017	2018	2019	2020	2021
Current Assets	857,203,110	951,679,721	822,613,914	1,092,185,308	1,607,072,907
Long-term Investments (Note 1)	41,569,074	29,304,796	30,172,039	27,728,208	29,384,701
Property, Plant and Equipment	1,062,542,322	1,072,050,279	1,352,377,405	1,555,589,120	1,975,118,704
Right-of-use Assets	0	0	17,232,402	27,728,382	32,734,537
Intangible Assets	14,175,140	17,002,137	20,653,028	25,768,179	26,821,697
Other Assets (Note 2)	16,371,997	20,091,105	21,756,244	31,712,208	54,370,909
Total Assets	1,991,861,643	2,090,128,038	2,264,805,032	2,760,711,405	3,725,503,455
Current Liabilities					
Before Distribution	358,706,680	340,542,586	590,735,701	617,151,048	739,503,358
After Distribution	566,149,724	547,985,630	655,561,652	681,976,999	810,811,904 (Note 3)
Noncurrent Liabilities	110,395,320	72,089,056	51,973,905	292,938,358	815,266,892
Total Liabilities					
Before Distribution	469,102,000	412,631,642	642,709,606	910,089,406	1,554,770,250
After Distribution	676,545,044	620,074,686	707,535,557	974,915,357	1,626,078,796 (Note 3)
Equity Attributable to Shareholders of the Parent					
Capital Stock	259,303,805	259,303,805	259,303,805	259,303,805	259,303,805
Capital Surplus	56,309,536	56,315,932	56,339,709	56,347,243	64,761,602
Retained Earnings					
Before Distribution	1,233,362,010	1,376,647,841	1,333,334,979	1,588,686,081	1,906,829,661
After Distribution	1,025,918,966	1,169,204,797	1,268,509,028	1,523,860,130	1,835,521,115 (Note 3)
Others	(26,917,818)	(15,449,913)	(27,568,369)	(54,679,873)	(62,608,515)
Equity Attributable to Shareholders of the Parent					
Before Distribution	1,522,057,533	1,676,817,665	1,621,410,124	1,849,657,256	2,168,286,553
After Distribution	1,314,614,489	1,469,374,621	1,556,584,173	1,784,831,305	2,096,978,007 (Note 3)
Noncontrolling Interests	702,110	678,731	685,302	964,743	2,446,652
Total Equity					
Before Distribution	1,522,759,643	1,677,496,396	1,622,095,426	1,850,621,999	2,170,733,205
After Distribution	1,315,316,599	1,470,053,352	1,557,269,475	1,785,796,048	2,099,424,659 (Note 3)

Note 1: Long-term investments as of December 31, 2017 include noncurrent held-to-maturity financial assets, financial assets carried at cost and investments accounted for using equity method. Starting from 2018, upon initial application of IFRS 9 "Financial Instruments", the category includes noncurrent financial assets at fair value through other comprehensive income, noncurrent financial assets at amortized cost, and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.
Note 3: The amount approved by Board of Directors on February 15, 2022.

Condensed Balance Sheet from 2017 to 2021 (Unconsolidated)

Unit: NT$ thousands

Item \ Year	2017	2018	2019	2020	2021
Current Assets	436,769,337	469,966,106	355,118,125	580,949,248	783,205,937
Long-term Investments (Note 1)	464,401,415	550,524,494	559,380,999	565,432,338	603,640,944
Property, Plant and Equipment	1,016,355,970	1,025,286,941	1,310,900,634	1,511,784,556	1,889,970,529
Right-of-use Assets	0	0	15,030,020	25,184,827	30,123,052
Intangible Assets	9,870,127	12,429,930	16,271,444	21,733,597	22,910,400
Other Assets (Note 2)	11,992,542	17,253,537	18,774,850	28,420,547	48,644,283
Total Assets	1,939,389,391	2,075,461,008	2,275,476,072	2,733,505,113	3,378,495,145
Current Liabilities					
Before Distribution	308,383,240	328,060,518	605,540,547	680,529,735	704,833,370
After Distribution	515,826,284	535,503,562	670,366,498	745,355,686	776,141,916 (Note 3)
Noncurrent Liabilities	108,948,618	70,582,825	48,525,401	203,318,122	505,375,222
Total Liabilities					
Before Distribution	417,331,858	398,643,343	654,065,948	883,847,857	1,210,208,592
After Distribution	624,774,902	606,086,387	718,891,899	948,673,808	1,281,517,138 (Note 3)
Equity					
Capital Stock	259,303,805	259,303,805	259,303,805	259,303,805	259,303,805
Capital Surplus	56,309,536	56,315,932	56,339,709	56,347,243	64,761,602
Retained Earnings					
Before Distribution	1,233,362,010	1,376,647,841	1,333,334,979	1,588,686,081	1,906,829,661
After Distribution	1,025,918,966	1,169,204,797	1,268,509,028	1,523,860,130	1,835,521,115 (Note 3)
Others	(26,917,818)	(15,449,913)	(27,568,369)	(54,679,873)	(62,608,515)
Total Equity					
Before Distribution	1,522,057,533	1,676,817,665	1,621,410,124	1,849,657,256	2,168,286,553
After Distribution	1,314,614,489	1,469,374,621	1,556,584,173	1,784,831,305	2,096,978,007 (Note 3)

Note 1: Long-term investments as of December 31, 2017 include financial assets carried at cost and investments accounted for using equity method. Starting from 2018, upon initial application of IFRS 9 "Financial Instruments", the category includes noncurrent financial assets at fair value through other comprehensive income and investments accounted for using equity method.
Note 2: Other assets consist of deferred income tax assets, refundable deposits, and other noncurrent assets.
Note 3: The amount approved by Board of Directors on February 15, 2022.

6.1.2 Condensed Statement of Comprehensive Income

Condensed Statement of Comprehensive Income from 2017 to 2021 (Consolidated)

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

Item \ Year	2017	2018	2019	2020	2021
Net Revenue	977,447,241	1,031,473,557	1,069,985,448	1,339,254,811	1,587,415,037
Gross Profit	494,826,402	497,874,253	492,701,896	711,130,120	819,537,266
Income from Operations	385,559,223	383,623,524	372,701,090	566,783,698	649,980,897
Non-operating Income and Expenses	10,573,807	13,886,739	17,144,246	17,993,482	13,145,417
Income before Income Tax	396,133,030	397,510,263	389,845,336	584,777,180	663,126,314
Net Income	343,146,848	351,184,406	345,343,809	518,158,082	597,073,134
Other Comprehensive Income (Loss) for the Year, Net of Income Tax	(28,821,631)	9,836,976	(11,823,562)	(30,321,802)	(7,619,456)
Total Comprehensive Income for the Year	314,325,217	361,021,382	333,520,247	487,836,280	589,453,678
Net Income Attributable to:					
Shareholders of the Parent	343,111,476	351,130,884	345,263,668	517,885,387	596,540,013
Noncontrolling Interests	35,372	53,522	80,141	272,695	533,121
Total Comprehensive Income Attributable to:					
Shareholders of the Parent	314,294,993	360,965,015	333,440,460	487,563,478	588,918,059
Noncontrolling Interests	30,224	56,367	79,787	272,802	535,619
Basic/ Diluted Earnings Per Share (Note)	13.23	13.54	13.32	19.97	23.01

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

Condensed Statement of Comprehensive Income from 2017 to 2021 (Unconsolidated)

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

Item \ Year	2017	2018	2019	2020	2021
Net Revenue	969,136,109	1,023,925,713	1,059,646,793	1,314,793,013	1,574,745,881
Gross Profit	478,937,691	492,955,501	480,143,141	682,004,023	788,629,037
Income from Operations	374,690,117	384,027,838	365,923,992	543,465,507	629,632,836
Non-operating Income and Expenses	18,626,059	12,170,315	22,821,227	39,153,435	30,869,355
Income before Income Tax	393,316,176	396,198,153	388,745,219	582,618,942	660,502,191
Net Income	343,111,476	351,130,884	345,263,668	517,885,387	596,540,013
Other Comprehensive Income (Loss) for the Year, Net of Income Tax	(28,816,483)	9,834,131	(11,823,208)	(30,321,909)	(7,621,954)
Total Comprehensive Income for the Year	314,294,993	360,965,015	333,440,460	487,563,478	588,918,059
Basic/ Diluted Earnings Per Share (Note)	13.23	13.54	13.32	19.97	23.01

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

6.1.3 Financial Analysis

Financial Analysis from 2017 to 2021 (Consolidated)

		2017	2018	2019	2020	2021
Capital Structure Analysis	Debts Ratio (%)	23.55	19.74	28.38	32.97	41.73
	Long-term Fund to Property, Plant and Equipment (%)	153.70	163.20	123.79	137.80	151.18
Liquidity Analysis	Current Ratio (%)	238.97	279.46	139.25	176.97	217.32
	Quick Ratio (%)	217.94	248.76	124.92	154.35	190.61
	Times Interest Earned (Times)	119.95	131.28	120.92	281.95	123.48
Operating Performance Analysis	Average Collection Turnover (Times)	7.74	8.19	7.95	9.35	9.20
	Days Sales Outstanding	47.16	44.57	45.91	39.04	39.67
	Average Inventory Turnover (Times)	7.88	6.02	6.20	5.70	4.65
	Average Inventory Turnover Days	46.32	60.63	58.87	64.04	78.49
	Average Payment Turnover (Times)	16.82	16.56	15.48	15.45	17.10
	Property, Plant and Equipment Turnover (Times)	0.95	0.97	0.88	0.92	0.90
	Total Assets Turnover (Times)	0.50	0.51	0.49	0.53	0.49
Profitability Analysis	Return on Total Assets (%)	17.84	17.34	15.99	20.69	18.56
	Return on Equity attributable to Shareholders of the Parent (%)	23.57	21.95	20.94	29.84	29.69
	Operating Income to Paid-in Capital Ratio (%)	148.69	147.94	143.73	218.58	250.66
	Pre-tax Income to Paid-in Capital Ratio (%)	152.77	153.30	150.34	225.52	255.73
	Net Margin (%)	35.11	34.05	32.28	38.69	37.61
	Basic Earnings Per Share (NT$)	13.23	13.54	13.32	19.97	23.01
	Diluted Earnings Per Share (NT$)	13.23	13.54	13.32	19.97	23.01
Cash Flow	Cash Flow Ratio (%)	163.17	168.54	104.13	133.30	150.39
	Cash Flow Adequacy Ratio (%)	112.41	113.11	106.60	100.74	97.84
	Cash Flow Reinvestment Ratio (%)	11.08	9.06	8.45	11.24	13.56
Leverage	Operating Leverage	2.16	2.28	2.41	1.97	2.05
	Financial Leverage	1.01	1.01	1.01	1.00	1.01
Industry Specific Key Performance Indicator	Advanced Technologies (7-nanometer and below) Percentage of Wafer Sales (%)	-	9	27	41	50
	Sales Growth (%)	3.11	5.53	3.73	25.17	18.53
	Net Income Growth (%)	2.65	2.34	-1.67	50.00	15.19

Analysis of deviation of 2021 vs. 2020 over 20%:
1. Debts ratio increased by 27% mainly due to increase in bonds payable and other noncurrent liabilities.
2. Current ratio increased by 23% mainly due to increase in cash and cash equivalents and inventories.
3. Quick ratio increased by 23% mainly due to increase in cash and cash equivalents.
4. Times interest earned decreased by 56% mainly due to increase in interest expenses.
5. Average inventory turnover days increased by 23% mainly due to a higher level of inventories of 5nm technology.
6. Cash flow reinvestment ratio increased by 21% as a result of increase in cash provided by operating activities.

Note: Capacity includes wafers committed by Vanguard and SSMC.

* Glossary

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

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

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

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

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

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

Financial Analysis from 2017 to 2021 (Unconsolidated)

		2017	2018	2019	2020	2021
Capital Structure Analysis	Debt Ratio (%)	21.52	19.21	28.74	32.33	35.82
	Long-term Fund to Property, Plant and Equipment Ratio (%)	160.48	170.43	127.39	135.80	141.47
Liquidity Analysis	Current Ratio (%)	141.63	143.26	58.64	85.37	111.12
	Quick Ratio (%)	118.68	113.07	45.81	65.93	84.33
	Times Interest Earned (Times)	144.04	137.46	122.80	330.85	261.58
Operating Performance Analysis	Average Collection Turnover (Times)	7.86	8.45	8.32	9.80	9.80
	Days Sales Outstanding	46.44	43.21	43.88	37.24	37.23
	Average Inventory Turnover (Times)	8.39	6.31	6.65	6.13	4.98
	Average Inventory Turnover Days	43.49	57.89	54.91	59.58	73.23
	Average Payment Turnover (Times)	16.39	16.22	15.10	14.89	17.06
	Property, Plant and Equipment Turnover (Times)	0.97	1.00	0.91	0.93	0.93
	Total Assets Turnover (Times)	0.51	0.51	0.49	0.52	0.52
Profitability Analysis	Return on Total Assets (%)	18.29	17.62	16.00	20.74	19.59
	Return on Equity (%)	23.57	21.95	20.94	29.84	29.69
	Operating Income to Paid-in Capital Ratio (%)	144.50	148.10	141.12	209.59	242.82
	Pre-tax Income to Paid-in Capital Ratio (%)	151.68	152.79	149.92	224.69	254.72
	Net Margin (%)	35.40	34.29	32.58	39.39	37.88
	Basic Earnings Per Share (NT$)	13.23	13.54	13.32	19.97	23.01
	Diluted Earnings Per Share (NT$)	13.23	13.54	13.32	19.97	23.01
Cash Flow	Cash Flow Ratio (%)	184.45	173.17	98.00	114.56	153.79
	Cash Flow Adequacy Ratio (%)	99.42	113.52	106.59	99.88	97.62
	Cash Flow Reinvestment Ratio (%)	10.98	9.23	8.23	10.93	14.20
Leverage	Operating Leverage	2.22	2.28	2.46	2.04	2.11
	Financial Leverage	1.01	1.01	1.01	1.00	1.00

Analysis of deviation of 2021 vs. 2020 over 20%:
1. Current ratio increased by 30% mainly due to increase in cash and cash equivalents and inventories.
2. Quick ratio increased by 28% mainly due to increase in cash and cash equivalents.
3. Times interest earned decreased by 21% mainly due to increase in interest expenses.
4. Average inventory turnover days increased by 23% mainly due to a higher level of inventories of 5nm technology.
5. Cash flow ratio increased by 34% and cash flow reinvestment ratio increased by 30% as a result of increase in cash provided by operating activities.

* Glossary

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

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

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

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

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

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

6.1.4 Auditors' Opinions from 2017 to 2021

Year	CPA	Audit Opinion
2017	Yih-Hsin Kao, Yu-Feng Huang	An Unmodified Opinion
2018	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2019	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2020	Mei Yen Chiang, Yu-Feng Huang	An Unmodified Opinion
2021	Mei Yen Chiang, Shang Chih Lin	An Unmodified Opinion

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

6.1.5 Audit Committee's Review Report

The Board of Directors has prepared the Company's 2021 Business Report, Financial Statements, and proposal for allocation of quarterly earnings. The CPA firm of Deloitte & Touche was retained to audit TSMC's Financial Statements and has issued an audit report relating to the Financial Statements. The Business Report, Financial Statements, and quarterly earnings allocation proposal have been reviewed and determined to be correct and accurate by the Audit Committee members of Taiwan Semiconductor Manufacturing Company Limited. According to relevant requirements of the Securities and Exchange Act and the Company Law, we hereby submit this report.

Taiwan Semiconductor Manufacturing Company Limited

Chairman of the Audit Committee: Sir Peter L. Bonfield



February 15, 2022

6.1.6 Financial Difficulties

The Company should disclose the financial impact to the Company if the Company and its affiliated companies have incurred any financial or cash flow difficulties in 2021 and as of the date of this Annual Report: None.

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

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

6.2 Financial Status and Operating Results

6.2.1 Financial Status

Consolidated

Unit: NT$ thousands

Item	2021	2020	Difference	%
Current Assets	1,607,072,907	1,092,185,308	514,887,599	47%
Long-term Investments (Note 1)	29,384,701	27,728,208	1,656,493	6%
Property, Plant and Equipment	1,975,118,704	1,555,589,120	419,529,584	27%
Right-of-use Assets	32,734,537	27,728,382	5,006,155	18%
Intangible Assets	26,821,697	25,768,179	1,053,518	4%
Other Assets (Note 2)	54,370,909	31,712,208	22,658,701	71%
Total Assets	3,725,503,455	2,760,711,405	964,792,050	35%
Current Liabilities	739,503,358	617,151,048	122,352,310	20%
Noncurrent Liabilities	815,266,892	292,938,358	522,328,534	178%
Total Liabilities	1,554,770,250	910,089,406	644,680,844	71%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	64,761,602	56,347,243	8,414,359	15%
Retained Earnings	1,906,829,661	1,588,686,081	318,143,580	20%
Others	(62,608,515)	(54,679,873)	(7,928,642)	-15%
Equity Attributable to Shareholders of the Parent	2,168,286,553	1,849,657,256	318,629,297	17%
Total Equity	2,170,733,205	1,850,621,999	320,111,206	17%

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

- **Analysis of Deviation over 20%**

Increase in current assets: The increase was mainly due to increase in cash and cash equivalents and inventories.
Increase in property, plant and equipment: The increase was mainly due to increase in equipment under installation and construction in progress.
Increase in other assets: The increase in other assets was mainly due to increase in deferred income tax assets.
Increase in total assets: The increase in total assets was mainly due to increase in current assets and property, plant and equipment.
Increase in current liabilities: The increase was mainly due to increase in short-term loans and accrued expenses and other current liabilities.
Increase in noncurrent liabilities: The increase was mainly due to issuance of corporate bonds in 2021 and increase in other noncurrent liabilities.
Increase in total liabilities: The increase was mainly due to increase in noncurrent liabilities.
Increase in retained earnings: The increase was mainly due to net income of 2021, partially offset by distribution of earnings.

- **Major Impact on Financial Position**

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

- **Future Plan on Financial Position:** Not applicable.

Unconsolidated

Unit: NT$ thousands

Item	2021	2020	Difference	%
Current Assets	783,205,937	580,949,248	202,256,689	35%
Long-term Investments (Note 1)	603,640,944	565,432,338	38,208,606	7%
Property, Plant and Equipment	1,889,970,529	1,511,784,556	378,185,973	25%
Right-of-use Assets	30,123,052	25,184,827	4,938,225	20%
Intangible Assets	22,910,400	21,733,597	1,176,803	5%
Other Assets (Note 2)	48,644,283	28,420,547	20,223,736	71%
Total Assets	3,378,495,145	2,733,505,113	644,990,032	24%
Current Liabilities	704,833,370	680,529,735	24,303,635	4%
Noncurrent Liabilities	505,375,222	203,318,122	302,057,100	149%
Total Liabilities	1,210,208,592	883,847,857	326,360,735	37%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	64,761,602	56,347,243	8,414,359	15%
Retained Earnings	1,906,829,661	1,588,686,081	318,143,580	20%
Others	(62,608,515)	(54,679,873)	(7,928,642)	-15%
Total Equity	2,168,286,553	1,849,657,256	318,629,297	17%

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

- **Analysis of Deviation over 20%**

Increase in current assets: The increase was mainly due to increase in cash and cash equivalents and inventories.
Increase in property, plant and equipment: The increase was mainly due to increase in equipment under installation and construction in progress.
Increase in right-of-use assets: The increase was mainly due to increase in leases of land.
Increase in other assets: The increase in other assets was mainly due to increase in deferred income tax assets.
Increase in total assets: The increase in total assets was mainly due to increase in current assets and property, plant and equipment.
Increase in noncurrent liabilities: The increase was mainly due to issuance of corporate bonds in 2021 and increase in other noncurrent liabilities.
Increase in total liabilities: The increase was mainly due to increase in noncurrent liabilities.
Increase in retained earnings: The increase was mainly due to net income of 2021, partially offset by distribution of earnings.

- **Major Impact on Financial Position**

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

- **Future Plan on Financial Position:** Not applicable.

6.2.2 Financial Performance

Consolidated

Unit: NT$ thousands

Item	2021	2020	Difference	%
Net Revenue	1,587,415,037	1,339,254,811	248,160,226	19%
Cost of Revenue	767,877,771	628,124,691	139,753,080	22%
Gross Profit	819,537,266	711,130,120	108,407,146	15%
Operating Expenses	169,222,934	145,056,549	24,166,385	17%
Other Operating Income and Expenses, Net	(333,435)	710,127	(1,043,562)	-147%
Income from Operations	649,980,897	566,783,698	83,197,199	15%
Non-operating Income and Expenses	13,145,417	17,993,482	(4,848,065)	-27%
Income before Income Tax	663,126,314	584,777,180	78,349,134	13%
Income Tax Expenses	66,053,180	66,619,098	(565,918)	-1%
Net Income	597,073,134	518,158,082	78,915,052	15%
Other Comprehensive Loss, Net of Income Tax	(7,619,456)	(30,321,802)	22,702,346	75%
Total Comprehensive Income for the Year	589,453,678	487,836,280	101,617,398	21%
Total Net Income Attributable to Shareholders of the Parent	596,540,013	517,885,387	78,654,626	15%
Total Comprehensive Income Attributable to Shareholders of the Parent	588,918,059	487,563,478	101,354,581	21%

• Analysis of Deviation over 20%

Increase in cost of revenue: The increase was mainly due to higher sales.

Decrease in other operating income and expenses, net: The decrease was mainly due to a net loss on disposal of property, plant and equipment in 2021 compared to a net gain on disposal of property, plant and equipment in 2020.

Decrease in non-operating income and expenses: The decrease was mainly due to lower interest income and higher interest expenses in 2021.

Decrease in other comprehensive loss, net of income tax: The decrease was mainly due to decrease in currency exchange loss arising from translation of foreign operations in 2021.

Increase in total comprehensive income for the year and total comprehensive income attributable to shareholders of the parent: The increase was mainly due to higher net income in 2021.

• Sales Volume Forecast and Related Information

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

• Major Impact on Financial Performance

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

• Future Plan on Financial Performance: Not applicable.

Unconsolidated

Unit: NT$ thousands

Item	2021	2020	Difference	%
Net Revenue	1,574,745,881	1,314,793,013	259,952,868	20%
Cost of Revenue	786,116,844	632,788,990	153,327,854	24%
Gross Profit	788,629,037	682,004,023	106,625,014	16%
Operating Expenses	158,667,757	139,285,510	19,382,247	14%
Other Operating Income and Expenses, Net	(328,444)	746,994	(1,075,438)	-144%
Income from Operations	629,632,836	543,465,507	86,167,329	16%
Non-operating Income and Expenses	30,869,355	39,153,435	(8,284,080)	-21%
Income before Income Tax	660,502,191	582,618,942	77,883,249	13%
Income Tax Expenses	63,962,178	64,733,555	(771,377)	-1%
Net Income	596,540,013	517,885,387	78,654,626	15%
Other Comprehensive Loss, Net of Income Tax	(7,621,954)	(30,321,909)	22,699,955	75%
Total Comprehensive Income for the Year	588,918,059	487,563,478	101,354,581	21%

• Analysis of Deviation over 20%

Increase in net revenue: The increase was mainly attributed to rise in average selling price due to higher advanced technology revenue weighting and increase in wafer shipments during 2021, partially offset by the unfavorable impact of change in foreign exchange rate.

Increase in cost of revenue: The increase was mainly due to higher sales.

Decrease in other operating income and expenses, net: The decrease was mainly due to a net loss on disposal of property, plant and equipment in 2021 compared to a net gain on disposal of property, plant and equipment in 2020.

Decrease in non-operating income and expenses: The decrease was mainly due to lower share of profits of subsidiaries and associates in 2021.

Decrease in other comprehensive loss, net of income tax : The decrease was mainly due to decrease in currency exchange loss arising from translation of foreign operations in 2021.

Increase in total comprehensive income for the year: The increase was mainly due to higher net income in 2021.

• Sales Volume Forecast and Related Information

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

• Major Impact on Financial Performance

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

• Future Plan on Financial Performance: Not applicable.

6.2.3 Cash Flow

Consolidated

Unit: NT$ thousands

Cash Balance 12/31/2020	Net Cash Provided by Operating Activities in 2021	Net Cash Used in Investing Activities in 2021	Net Cash Generated by Financing Activities in 2021	Effect of Exchange Rate Changes on Cash and Cash Equivalents in 2021	Cash Balance 12/31/2021	Remedy for Liquidity Shortfall	
						Investment Plan	Financing Plan
660,170,647	1,112,160,722	(836,365,863)	136,608,438	(7,583,752)	1,064,990,192	None	None

- Analysis of Cash Flow

NT$1,112.2 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.
NT$836.4 billion net cash used in investing activities: primarily for capital expenditures.
NT$136.6 billion net cash generated by financing activities: mainly for issuance of corporate bonds, partially offset by cash dividend payment.

- Remedial Actions for Liquidity Shortfall

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

- **Cash Flow Projection for Next Year:** Not applicable.

Unconsolidated

Unit: NT$ thousands

Cash Balance 12/31/2020	Net Cash Provided by Operating Activities in 2021	Net Cash Used in Investing Activities in 2021	Net Cash Used in Financing Activities in 2021	Cash Balance 12/31/2021	Remedy for Liquidity Shortfall	
					Investment Plan	Financing Plan
303,165,717	1,083,932,185	(799,191,132)	(191,612,529)	396,294,241	None	None

- Analysis of Cash Flow

NT$1,083.9 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.
NT$799.2 billion net cash used in investing activities: primarily for capital expenditures.
NT$191.6 billion net cash used in financing activities: mainly for decrease in short-term loans and cash dividend payment, partially offset by issuance of corporate bonds.

- Remedial Actions for Liquidity Shortfall

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

- **Cash Flow Projection for Next Year:** Not applicable.

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

Unit: NT$ thousands

Plan	Actual or Planned Source of Capital	Total Amount for 2021 and 2020	Actual Use of Capital	
			2021	2020
Production Facilities, R&D and Production Equipment	Cash flow generated from operations and issuance of corporate bonds	1,327,249,575	831,096,598	496,152,977
Others	Cash flow generated from operations	19,184,855	8,099,110	11,085,745
Total		1,346,434,430	839,195,708	507,238,722

Based on capital expenditures listed above, TSMC's annual production capacity increased by approximately 0.9 million 12-inch equivalent wafers in 2021.

6.2.5 Long-term Equity Investment Policy and Results

TSMC's long-term equity investments, accounted for using the equity method, were all made for strategic purposes. In 2021, the gains from these investments amounted to 5,603,084 thousand on a consolidated basis, up from the previous year mainly due to increases in product demand. In the future, TSMC's long-term equity investments, accounted for using the equity method, will continue to focus on strategic purposes through prudent assessments.

6.3 Risk Management

The Board of Directors plays a key role in helping TSMC identify and manage risks. According to the Audit Committee's charter, approved by the Board of Directors, the Audit Committee is authorized to review TSMC's enterprise risk management (ERM), including business continuity management policy and plans, ERM procedures and implementation status. The risk management organization annually briefs the Audit Committee on TSMC's ever-changing risk environment, the key points of TSMC's ERM, and risk assessment and mitigation efforts. The Audit Committee's Chairperson also reports to the Board of Directors on the risk environment and risk mitigation measures to be taken.

TSMC operates an ERM program based on its corporate vision and its long-term, sustainable responsibility to both industry and society, integrating and managing potential sustainability risks including strategic, operational, financial and hazardous risks. ERM seeks to provide the appropriate management of risks on behalf of all stakeholders. TSMC applies a risk management framework (including risk identification and assessment, risk control and mitigation, risk response, risk monitoring and reporting) and a risk map to assess the risk levels by defining likelihood and impact severity of events on TSMC's operations, and to prioritize controls and implement corresponding mitigation measures.

Scope of Risk Management

Strategic Perspective
- Changes in technology (including IT security) and industry
- Decrease in demand and average selling price
- Competition
- Changes in the government policies and regulatory environment

Operational Perspective
- Capacity expansion
- Construction of new fabs
- Sales concentration
- Purchasing concentration
- Intellectual property rights
- Litigious and non-litigious matters
- Mergers and acquisitions
- Recruiting quality personnel
- Future R&D plans and expected R&D spending
- Change in corporate reputation
- Change in management

Financial Perspective
- Interest rate fluctuation, foreign exchange volatility, inflation, and amendments to tax regulations or implementation of new tax laws
- External financing
- High-risk/highly leveraged investments; lending, endorsements, and guarantees for other parties; and financial derivative transactions
- Impairment charges

Hazardous Event Perspective
- Earthquakes and natural disaster
- Fire or chemical spills
- Climate change
- Pandemics
- Utility supply disruption

Enterprise Risk Management Framework

Risk Identification and Assessment
- RM Steering Committee and Audit Committee of the Board of Directors review and approve implementation of risk management strategy and prioritization of risk controls
- RM Executive Council adopts risk map which assesses likelihood and impact of risk events on operations

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Risk Control and Mitigation
- RM Program conducts cross-functional risk communication to facilitate each function for enhancing risk prevention and mitigation controls
- RM Executive Council implements risk controls and improves continuously
- Each department includes the effectiveness of risk controls into annual self-assessment

↓

Risk Response
- RM task forces establish crisis management and business continuity plans
- RM Program plans and implements the response and exercise for material crisis events
- Each department implements the planning and execution of business continuity plan

↓

Risk Monitoring and Reporting
- Risk management organization reports to RM Steering Committee and Audit Committee on the focus of enterprise risk management, risk assessment, and mitigation efforts

To mitigate the TSMC's operational impacts of crisis events, TSMC's risk management organization conducts pre-crisis risk assessment and identifies feasible strategies for crisis prevention. Response procedures and recovery plans are established for various scenarios. For specific severe crisis events involving multiple TSMC manufacturing sites, the cross-functional central crisis command center, composed of operations and support functions, is responsible for direction and internal coordination to speed up TSMC's response time to crisis event and proactively communicate with stakeholders. To raise risk awareness and strengthen the risk management culture in TSMC, RM task forces have been formed to enhance risk assessment and conduct crisis response exercises for potential critical events such as fire, earthquake, IT service disruption, IT security breach, supply chain disruption, major yield loss, and utility supply disruption. In order to continuously mitigate corporate risks, crisis response exercises are used to test the integrity of ERM and effectiveness of risk controls.

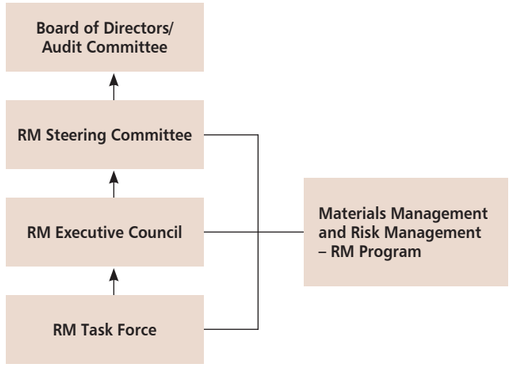
To mitigate supply chain disruption risks, TSMC has created a task force comprised of members of fab operations, materials management, risk management and quality systems management to work with suppliers to develop business continuity plans and enhance supply chain resilience. Partly as a result of these efforts, there were no interruptions in TSMC's supply chain in 2021.

As production capacity continues to expand with more advanced technology, TSMC has initiated and implemented seismic protection engineering design, risk treatment practices and green manufacturing projects during the design phase of all new fabs.

6.3.1 Risk Management Organization and Implementation Status

The TSMC risk management organization is composed of the RM steering committee, the RM executive council, the RM program and the RM task force. The role and responsibility of the risk management organization and its implementation status are summarized as follows:

Risk Management Organization Chart



RM Steering Committee
- Consist of functional heads, with internal audit head sitting in as an observer
- Report to the Audit Committee of the Board of Directors
- Advise and approve risk control prioritization
- Supervise continuous improvements for risk management

RM Executive Council
- Consist of director-level representatives from each function
- Identify and implement risk control plans
- Continuously improve risk management practices and effectiveness

RM Program
- Consolidate ERM reports and update the RM Steering Committee
- Coordinate and facilitate the RM Executive Council's risk management activities
- Facilitate RM task forces to enhance the effectiveness of risk controls

RM Task Force
- Identify potential scenarios and business impacts
- Plan and execute risk prevention and mitigation actions in accordance with various scenarios
- Establish crisis management procedures and conducts exercises

The Implementation in 2021

Systemic Risk Management Enhancement
- In addition to current risk identification and assessment, compliance check, lessons learned from internal and external incidents, and benchmarking, a series of risk interviews and analysis are conducted to identify any unknown systemic risks and risk control measures to be enhanced. TSMC continuously improves the effectiveness of risk controls and risk culture through cross-functional collaborations.

Continue Existing Risk Management Organization's Activities
- For enterprise risks, each RM task forces conduct risk assessment and lesson-learned from incidents, identify potential risk scenarios continuously, plan and implement risk prevention and mitigation measures, emergency response, crisis management and corresponding exercises.
- The RM executive council reviews and follows up on the progress and results of RM task force activities, including the response to systemic risks and emerging risks, improving opportunities identified from compliance checks, and sharing and learning of best practices.
- The RM steering committee advises and approves the risk map and the prioritization of risk controls and review the continuous improvement in managing systemic risks.

6.3.2 Strategic Risks

Risks Associated with Changes in Technology and Industry

- Industry Developments

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

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

- Changes in Technology

The semiconductor industry and its technologies are constantly changing. TSMC competes by developing process technologies using increasingly advanced nodes and on manufacturing products with more functions. The Company also competes by developing new derivative technologies. If TSMC does not anticipate these changes in technologies and rapidly develop new and innovative technologies, or the Company's competitors unforeseeably gain sudden access to additional technologies, TSMC may not be able to provide foundry services on competitive terms. In addition, TSMC's customers have significantly decreased the time in which their products or services are launched into the market. If TSMC is unable to meet these shorter product time-to-market, it risks losing these customers. These factors have also been intensified by the shift of the global technology market to consumer driven products, such as smartphones, and increasing competition and concentration of customers (all further discussed separately among these risk factors).

Also, the uncertainty and instability inherent in advanced technologies also impose challenges for achieving expected product quality and product yield. If TSMC fails to maintain quality, it may result in loss of revenue and additional cost, as well as loss of business or customer trust. For example, in January 2019, the Company discovered yield problems in 12-nanometer and 16-nanometer wafers caused by a batch of photoresist, which resulted in delayed delivery of products and had a negative effect on TSMC's gross margin and operating margin in the first quarter of 2019. To reduce future risks of such incidences, the Company has since strengthened inline wafer inspection and tightened control of incoming material to deal with the increasing complexity of leading-edge technologies. If TSMC is unable to innovate new technologies that meet the demand of its customers or overcome the above factors, it may become less competitive and its revenue may decline significantly.

Regarding the response measures for the above-mentioned risks, please refer to "2.2.4 TSMC Position, Differentiation and Strategy" on pages 14-16 of this Annual Report.

- IT Security

Even though TSMC has established a comprehensive internet and computing security network, the Company cannot guarantee that its computing systems which control or maintain vital corporate functions, such as its manufacturing operations and enterprise accounting, would be completely immune to crippling cyberattacks. In the event of a serious cyberattack, TSMC's systems may lose important corporate data or its production lines may be shut down pending the resolution of such attack. Major cyberattacks could also lead to loss or divulgence of trade secrets and other sensitive information, such as proprietary information of our customers and other stakeholders and personal information of our employees. While TSMC seeks to continuously review and assess its cybersecurity policies and procedures to ensure their adequacy and effectiveness, the Company cannot guarantee

that it will not be susceptible to new and emerging risks and attacks in the evolving landscape of cybersecurity threats.

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

In the past, TSMC experienced and may in the future be subject to attacks by malicious software contained in the equipment the Company purchases and installs. TSMC has implemented and continually updates rigorous cybersecurity measures to prevent and minimize harm caused by such attacks. Such measures include advanced virus scanning tools to prevent a fab from installing virus-infected software, strengthening firewall and network controls to prevent computer viruses from spreading among tools and fabs, the installation of anti-virus and advanced malware detection solutions across Company computer devices, and enhancement of data center security through faster patch cycle times. In addition, TSMC has deployed secure PCs and laptops, developed a public cloud security policy with monitoring, defined and regularly reviewed the security key performance indicators (KPI), introduced new technology for data protection, and improved email phishing detection and regularly performed employee awareness testing. TSMC also established an integrated and automatic security operation platform, enhanced the automation of cybersecurity event detection and response, enhanced internal assessment automation, practiced the response to ransomware attacks and conducted external security risk assessments. In addition, to reduce supply chain risks, through collaboration, TSMC helped major suppliers improve their security maturity with KPI monitoring and share with them industry security events and best practices on demand and by schedule. Moreover, TSMC led the SEMI standard taskforce to formulate and release information security standards for semiconductor equipment (SEMI E187) to help improve the resilience of semiconductor supply chain. While these ongoing enhancements further improve Company's cybersecurity defense solutions, there can be no assurance that the Company is immune to cyberattacks.

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

Risks Associated with Decrease in Demand and Average Selling Price

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

Risks Associated with Competition

The markets for TSMC's foundry services are highly competitive. The Company competes with other foundry service providers, as well as a number of integrated device manufacturers. Some of these companies may have access to more advanced technologies than TSMC. Other companies may have greater financial and other resources than TSMC, such as the possibility of receiving direct or indirect government subsidies, economic stimulus funds, or other incentives that may be unavailable to TSMC. For example, Chinese companies are expected to be key players for new semiconductor fab development and fab equipment spending in part due to various incentives provided by the Chinese government. The governments of Europe, the United States, South Korea, and Japan also have incentive programs to incentivize developments of their domestic semiconductor industries. Although governments in certain of the countries or regions where TSMC is currently expanding or planning to expand its production capacity have extended or may in the future extend certain financial incentives to the Company, there is no assurance that TSMC will be able to apply for or receive such financial incentives at the levels TSMC expects or at all. Additionally, any financial incentives the Company receive may be subject to strict conditions, or the grantors could seek to recover any funds provided to TSMC, or cancel, reduce or deny our requests subsidies or grants in the future. This could materially increase TSMC's operating costs and adversely affect its results of operations.

Furthermore, the Company's competitors may, from time to time, also decide to undertake aggressive pricing initiatives in one or several technology nodes. These competitive activities may decrease TSMC's customer base or its ASP, or both. If TSMC is unable to compete effectively with such new and aggressive competitors on technology, manufacturing capacity, product quality and customer satisfaction, it risks losing customers to such new contenders.

Risks Associated with Changes in the Government Policies and Regulatory Environment

TSMC management closely monitors all domestic and foreign governmental policies and regulations that might impact TSMC's business and financial operations. In 2021 and as of the date of this Annual Report, there were no governmental policies or regulatory changes would materially impact TSMC's operations or financial condition.

6.3.3 Operational Risks

Risks Associated with Capacity Expansion

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

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

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

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

Risks Associated with Construction of New Fabs

The Company has multiple expansion projects that are currently underway, including the design and construction of new fabs worldwide. Labor shortages, interruptions in the supply chains for various building materials, and construction issues could substantially delay the completion of our expansion projects. Any prolongation of such delays could result in us incurring substantial additional costs or failing to meet our capacity expansion plans. In addition, future expansions of its operations in the R.O.C. could be limited by the limited availability of commercial-use land.

Risks Associated with Sales Concentration

Over the years, the profile of the Company's customers and the nature of the Company's customers' business have changed dramatically. While TSMC generates revenue from hundreds of customers worldwide, TSMC's ten largest customers in 2019, 2020 and 2021 accounted for approximately, 71%, 74% and 71% of TSMC's net revenue in the respective year. TSMC's largest customer in 2019, 2020 and 2021 accounted for 23%, 25% and 26% of the Company's net revenue in the respective year. TSMC's second largest customer in 2019, 2020 and 2021 accounted for 14%, 12% and 10% of TSMC's net revenue in the respective year.

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

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

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

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

Risks Associated with Purchasing Concentration

• Raw Materials

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

Given that qualified backup suppliers are hard to find, TSMC engages early and extensively with primary suppliers on managing quality and capacity issues so as to be prepared for any unexpected need to ramp up or curtail production when the Company lacks sufficient time to re-tune its production process. For leading technology nodes, TSMC not only adopts world-class processes and facilities but also requires world-class materials. To streamline supply chain risk, the Company has increased supplier site audits and meetings to extend supply chain best practices to its upstream suppliers. In addition, in response to the rapid increase or decrease in production capacity of new products, TSMC has continued to improve its inventory monitoring system to achieve more accurate demand forecasts and ensure that the supply chain maintains sufficient inventory levels. The Company has established a supply chain risk assessment to ensure that critical suppliers meet various standards in labor, ethics, ESH (environmental, safety and health) and BCP (business continuity plan). Onsite audits are conducted regularly to encourage suppliers to take responsibility for their supply chain, as any regulatory violations or adverse environmental impact event, or failure to meet sustainability requirements could result in business reduction or termination.

• Equipment

The Company's operations and ongoing expansion plans depend on its ability to obtain an appropriate amount of equipment and related services from a limited number of suppliers in a market that is characterized from time to time by limited supply and long delivery cycles. During such times, supplier-specific or industry-wide lead times for delivery can be longer than previously expected and the cost of ownership may intrinsically increase.

To better manage its supply chain, the Company has implemented various collaborative business models and risk management contingencies with suppliers to ensure supply and shorten the procurement lead times. However, if TSMC is unable to timely acquire the equipment and parts needed, the Company may fail to successfully implement its capacity expansion plans and exploit time sensitive business opportunities. Additionally, ongoing trade tensions or protectionist measures could result in increased prices for, or even unavailability of, key equipment, including as a result of necessary export licenses being delayed or denied, additional export control measures, and other tariff or non-tariff barriers. If TSMC is unable to obtain equipment in a timely manner to fulfill its customers' demand on technology and production capacity, or at a reasonable cost, its financial condition and results of operations could be negatively impacted.

Risks Associated with Intellectual Property Rights

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

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

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

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

Risks Associated with Litigious and Non-litigious Matters

As is the case with many companies in the semiconductor industry, the Company has received from time to time communications from third parties asserting that its technologies, its manufacturing processes, or the design of the semiconductors made by TSMC or the use of those semiconductors by its customers may infringe upon their patents or other intellectual property rights. These assertions

have at times resulted in litigation by or against the Company and settlement payments by the Company. Irrespective of the validity of these claims, the Company could incur significant costs in the defense thereof or could suffer adverse effects on its operations. The Company is also subject to antitrust compliance requirements and scrutiny by governmental regulators in multiple jurisdictions. Any adverse results of such proceeding or other similar proceedings that may arise in those jurisdictions could harm TSMC's business and distract its management, and thereby have a material adverse effect on its results of operations or prospects, and subject the Company to potential significant legal liability.

In 2021 and as of the date of this Annual Report, TSMC is not currently a party to any material legal proceedings.

Risks Associated with Mergers and Acquisitions
In 2021 and as of the date of this Annual Report, TSMC had not conducted any merger or acquisition.

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

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

Future R&D Plans and Expected R&D Spending
For additional details, see "5.2.7 Future R&D Plans" on pages 95-96 of this Annual Report.

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

In 2021, TSMC was honored with numerous awards for achievements in operations, corporate governance, patents, profit growth, investor relations, environmental protection, corporate sustainability and other fields. These included: the inaugural Terra Carta Seal Award launched by HRH The Prince of Wales' Sustainable Markets Initiative; the Taiwan Institute for Sustainable Energy 2021 Taiwan Corporate Sustainability Awards' Most Prestigious Sustainability Award – Top Ten Domestic Corporates, Best Sustainability Report Award, Cyclical Economy Leadership Award, Supply Chain Leadership Award, and Information Security Leadership Award; First Place in *CommonWealth Magazine*'s Excellence in Corporate Social Responsibility Award for Large-Cap companies; ranked top 5% in the Taiwan Stock Exchange corporate governance evaluation; member of *Fortune Magazine*'s 2021 World's Most Admired Companies and the 2021 Global 500; the R.O.C. Ministry of Economic Affairs Industrial Development Bureau's Energy Conservation Benchmark Award; the R.O.C. Environmental Protection Administration's Enterprise Green Procurement Award; membership in the *Corporate Knights* 100 Most Sustainable Corporations for 2021; membership in the 2021 Carbon Clean 200 list by *Corporate Knights* and As You Sow; and membership in the *Time Magazine* 100 Most Influential Companies. In addition, TSMC was selected as a part of the Dow Jones Sustainability Indices for the 21st consecutive year.

As TSMC strives to excel in corporate social responsibility, the Company also encourages employees to make innovative breakthroughs in how they think about things and do things, as well as nurture their empathy and broaden their horizons. In 2021, the ESG Steering Committee, led by Chairman Dr. Mark Liu, held the second "TSMC ESG AWARD," taking tangible action to encourage all employees to propose ideas for sustainability in the five ESG strategic directions, including green manufacturing, building a responsible supply chain, creating a diverse & inclusive workplace, talent development, and caring for the disadvantaged. The award further motivates TSMC colleagues to think innovatively about their work and implement corporate social responsibility. Compared with 785 sustainability proposals in the first year, the second annual ESG Award received 1,257 innovative ideas, adding new energy to the Company's culture of sustainability.

With its global reputation in mind, TSMC employs numerous preventative measures to address potential risks from earthquakes, fires, IT service disruption, yield loss, information security, supply chain disruption, pandemics, environmental events, and utility supply disruption. TSMC sets crisis response and recovery measures according to possible crisis events and maintains a "TSMC crisis command center control instruction" as well as a "TSMC emergency response procedure" to establish its emergency response command structure. TSMC also performs regular exercises for crisis scenarios to ensure that crisis response procedures are comprehensive. In 2021, TSMC received a rating of "low risk" from the Sustainalytics ESG Risk Rating.

TSMC holds monthly meetings of the Environment, Safety and Health Committee, which coordinates relevant departments in each fab to conduct regular emergency response drills and continuously improve their notification and operational procedures to ensure clear channels of communication to stakeholders in crisis management, with the public relations department serving as the designated gateway for external communications.

In the event of an emergency, all departments immediately deploy emergency response measures to eliminate or minimize impact on personnel safety, the surrounding environment, company property and manufacturing operations. Responders also alert the public relations department at the earliest stages of response to ensure timely, clear and consistent communication regarding the situation.

Risks Associated with Change in Management
In 2021 and as of the date of this Annual Report, there were no such risks for TSMC.

6.3.4 Financial Risks

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

- **Interest Rate Fluctuation**

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

The objective of TSMC's investment policy is to achieve a return that will allow the Company to preserve principal and support liquidity requirements. The policy generally requires the Company to invest in investment grade securities and limits the amount of credit exposure to any one issuer. TSMC's cash and cash equivalents, as well as fixed income investments in both fixed- and floating-rate securities, carry a degree of interest rate risk. The majority of TSMC's fixed income investments are fixed-rate securities, which are classified as financial assets at fair value through other comprehensive income, and may have their fair value adversely affected due to a rise in interest rates. At the same time, if interest rates fall, cash and cash equivalents as well as floating-rate securities may generate less interest income than expected.

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

All of the Company's short-term debt is floating-rate, hence a rise in interest rates may result in higher interest expense than expected. The majority of its long-term debt is fixed-rate and measured at amortized cost and, as such, changes in interest rates would not affect future cash flows or the carrying amount.

Certain of TSMC's fixed income investments are primarily based on the London Interbank Offered Rate (LIBOR), which will be replaced by alternative benchmark rates after June 30, 2023. The transition from LIBOR to alternative benchmark rates might result in a reduction in TSMC's interest income.

- **Foreign Exchange Volatility**

Substantially all of TSMC's sales are denominated in U.S. dollars and over half of its capital expenditures are denominated in currencies other than the NT dollar, primarily in U.S. dollars, Euros and Japanese yen. As a result, any significant fluctuations to its disadvantage in the exchange rate of the NT dollar against such currencies, in particular a weakening of the U.S. dollar against the NT dollar, would have an adverse impact on the Company's revenue and operating profit as expressed in NT

dollars. For example, every one percent depreciation of the U.S. dollar against the NT dollar would result in an approximately 0.4 percentage point decrease in the Company's operating margin based on its 2021 results.

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

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

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

- Inflation

If inflation continues running higher, the Federal Reserve would take tightening monetary policy which could result in higher interest rates, adversely affecting the fair value of TSMC's fixed income investments and causing higher interest expenses of future debt issuance. In order to control the interest rate risk, TSMC closely monitors the market development and monetary policy. TSMC has entered – and may in the future enter – into interest rate derivatives to partially hedge the interest rate risk on its fixed income investments and anticipated debt issuance.

- Amendments to Tax Regulations or Implementation of New Tax Laws

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

While the Company is subject to tax laws and regulations in various jurisdictions in which it operates or conducts business, TSMC's principal operations are in the R.O.C. and it is exposed primarily to taxes levied by the R.O.C. government. Any unfavorable changes of tax laws and regulations in this jurisdiction could increase TSMC's effective tax rate and have an adverse effect on its operating results. Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting (BEPS) project that was undertaken by the Organisation for Economic Cooperation and Development (OECD). These changes may increase tax uncertainty and have an adverse effect on TSMC's operating results.

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

Risks Associated with External Financing

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

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

In 2021 and as of the date of this Annual Report, TSMC made no high-risk or highly leveraged financial investments. All financial derivative transactions engaged by TSMC were strictly for hedging and not for trading or speculative purposes. All guarantees and intercompany loans provided by TSMC and TSMC's subsidiaries were solely for TSMC and/or TSMC's wholly-owned subsidiaries. All guarantees and intercompany loans were in compliance with relevant rules and regulations.

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

Risks Associated with Impairment Charges

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

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

6.3.5 Hazardous Risks

The frequency and severity of disruptive events, including damaging earthquakes, other natural disasters and extreme weather, have been increasing in part due to climate change or systemic regional geological changes. TSMC has manufacturing and other operations, and is expanding its production capacity, in locations that may experience 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, which in turn could disrupt operations. In addition, TSMC's suppliers and customers also have operations in such locations. For example, most of TSMC's production facilities, as well as those of many of its suppliers and customers and upstream providers of complementary semiconductor manufacturing services, are located in Taiwan and Japan, areas susceptible to earthquakes, tsunamis, flooding, typhoons, and droughts from time to time that may cause shortages of electricity or water, or interruptions to TSMC's operations.

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

In 2021, Taiwan faced one of the worst droughts in decades. To cope with such severe weather events, the government placed restrictions on the supply and usage of water by industrial companies such as TSMC, which could also disrupt TSMC's operations. In response, TSMC implemented its business continuity plans, including water conservation measures, the use of more secured water sources, water supplied by tank cars, stress tests and various exercises. As a result, there was no material impact to TSMC's business or operational performance.

TSMC 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. Some of these 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 by 2025. If the TSMC is unable to secure reliable and uninterrupted supply of electricity to power its manufacturing fabs within Taiwan, its ability to fill customers' orders would be severely jeopardized.

If such events were to occur over prolonged periods of time, TSMC's operations and financial performance may be materially adversely affected.

TSMC's future capacity expansions in the R.O.C. and elsewhere could be curtailed by shortages in water and electricity.

The ongoing COVID-19 pandemic may materially adversely affect TSMC's business and results of operations in several ways, including but not limited to: (1) interruption of the operations of TSMC's supply chains for equipment, parts and materials in terms of manufacturing, logistics, and manpower arrangements for tool installation; (2) significant fluctuation in TSMC customers' demands for certain products, leading to uncertainties for TSMC's capacity planning and also for meeting customer demand, which may harm TSMC's business with its customers and subject TSMC to the risk of legal disputes; and (3) potential production delays for TSMC's products due to forced factory or office closures or partial operation.

TSMC has formed an "Epidemic Prevention Committee" to identify, implement and monitor actions stemming from the dynamic exigencies of the pandemic, including but not limited to, health management of TSMC's employees, splitting operation and work from home arrangements, identification and control of high risk individuals, rapid investigation of confirmed cases, management of production inventory, supply chain management, and capacity management for demand changes. In 2021 and as of the date of this Annual Report, TSMC's current business and results of operations have not been materially affected by the pandemic. However, there is no certainty that the measures TSMC has taken will be sufficient

to mitigate further risks posed by the COVID-19 pandemic, and TSMC's ability to perform critical functions and to meet customers' needs could be materially adversely affected as a result. In addition, there is also a risk that any post-pandemic downward changes in consumers' demand for electronic products may, in turn, lead to reduced demand for and place downward pressure on the price of our products and services.

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

TSMC has further strengthened its business continuity management, which includes periodic risk assessment, risk mitigation, and the establishment of emergency taskforces when necessary, combined with the preparation of a thorough analysis of an emergency, its impact, alternative actions, and solutions for each possible scenario together with appropriate precautionary and/or recovery measures. Each taskforce is given the responsibility of ensuring TSMC's ability to minimize personal injury, business disruption and financial impact under the circumstances. TSMC periodically reviews its business continuity plans and revises them according to exercise results and implementation.

In response to the impact of the earthquake that occurred in Taiwan, TSMC continued to improve its earthquake emergency response, tool anchorage and seismic isolation facilities, and readiness for tool salvage and production recovery. These improvements have also been integrated into new fab design. TSMC's business continuity procedures were further enhanced through the compliance with ISO 22301.

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

6.3.6 Risks Regarding Non-Compliance with Export Control, Environmental and Climate Change Related Laws, Regulations and Accords, and Failure to Timely Obtain Requisite Approvals Necessary for Conducting Business

Because TSMC engages in manufacturing activities in multiple jurisdictions and conducts business with its customers located worldwide, such activities are subject to a myriad of governmental regulations. For example, the manufacturing, assembling and testing of TSMC's products require the use of metals, chemicals, and materials that are subject to environmental, climate-related, health and safety, and humanitarian conflict-free sourcing laws, regulations and guidelines issued worldwide.

The Company's failure to comply with any such laws or regulations, as amended from time to time, or its failure to comply with any information or document sharing requests from the relevant authorities in a timely manner could result in:

- significant penalties and legal liabilities, such as the denial of import or export permits, or third-party private lawsuits, criminal or administrative proceedings;
- the temporary or permanent suspension of production of the affected products;
- the temporary or permanent inability to procure or use certain production critical chemicals or materials;
- unfavorable alterations in TSMC's manufacturing, fabrication and assembly and test processes;
- challenges from its customers that place TSMC at a significant competitive disadvantage, such as loss of actual or potential sales contracts in case the Company is unable to satisfy the applicable legal standard or customer requirement;
- restrictions on TSMC's operations or sales;
- loss of tax benefits, including termination of current tax incentives, disqualification of tax credit application and repayment of the tax benefits that the Company are not entitled to; and
- damages to TSMC's goodwill and reputation.

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

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

TSMC believes that climate change should be regarded as a significant corporate risk that must be managed to improve competitiveness. For TSMC's climate change related risks and control measures, see the "Climate Change and Energy Management" section under "7.2.1 Environmental Protection" on page 146-147 of this Annual Report.

6.3.7 Other Risks

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

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

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

Risks of Trade Policies

As TSMC's revenue is primarily derived from sales to customers in major global markets (please refer to "2.2.4 TSMC Position, Differentiation and Strategy" on page 14-16 of this annual report), any changes in the trade policies of major economic regions – such as the increase of tariffs on certain products, the implementation of import and export controls, or the adoption of other trade barriers – could affect TSMC sales or those of its customers and thereby affect the Company's operating results. TSMC continues to monitor the recent shifts in trade policies and measures among the relevant major economies and will take appropriate actions in accordance with subsequent developments.

In May 2020 and again in August 2020, the U.S. tightened its export control measures against Huawei Technology Co. Ltd. and its affiliates (collectively, "Huawei"), including an expanded license requirement for providing Huawei with items subject to the U.S. export control jurisdiction. To comply with relevant laws and regulations, we have discontinued shipment of products to Huawei since September 15, 2020. On the other hand, measures adopted by an affected country to counteract impacts of another country's actions or regulations could lead to significant legal liability to multinational corporations including our own. For example, in January 2021, China adopted a blocking statute that, among other matters, entitles Chinese entities incurring damages from a multinational's compliance with foreign laws to seek civil remedies. Additionally, in February 2022, several countries and regions began to impose various measures, including sanctions and export controls, against Russia, including certain individuals and entities, as a result of the military conflict in Ukraine. Imposition of trade barriers, including protectionist measures, sanctions and import and export controls, could increase our manufacturing costs, limit our access to certain supplies and make our pricing less competitive.

In 2021 and as of the date of this annual report, our current results of operations have not been materially affected. Nevertheless, depending on future developments of global trade tensions, such relevant regulations, rules, or measures may have an adverse impact on our business and operations, and we may incur significant legal liability and financial losses as a result.

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

Other Material Risks

In 2021 and as of the date of this Annual Report, TSMC's management was not aware of any other risk that could potentially have a material impact on the financial status of the Company.

2004
TSMC China Company Limited begins production

2004
Fab 14 Phase 1 begins production

2018
TSMC Nanjing Company Limited begins production

2011
Fab 15 Phase 1 begins production

2020
Fab 18 Phase 1 and Phase 2 begin production



7. Environmental, Social and Governance (ESG)

7.1 Overview

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

Guidance for the Implementation of ESG

In keeping with its vision of Uplifting Society, TSMC's ESG policy is the overarching guiding principle for sustainable development. The ESG Matrix, set by TSMC's founder Dr. Morris Chang, clearly defines the scope of the Company's ESG responsibility. The horizontal axis shows the seven areas where TSMC strives to demonstrate its ESG commitment: morality, business ethics, economy, rule of law, sustainability, work/life balance and happiness, and philanthropy. On the vertical axis are actions that TSMC has taken to fulfill these commitments.

TSMC ESG Matrix

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

ESG Management

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

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

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

Stakeholder Engagement

TSMC respects all stakeholders' rights and interests in sustainability issues. The Company thus deploys multiple communication venues for stakeholders to express ESG opinions and concerns including the "Contact Us" section of the corporate website, the ESG website and the ESG mailbox, the Irregular Business Conduct Reporting System, as well as the Supply Chain Worker Grievance Channel. Through identification, prioritization and validation, TSMC manages and addresses stakeholders' concerns.

Stakeholders and Communication Channels in 2021

Stakeholders	Communication Channels
Employees	•Communications and working meetings throughout all levels and all units of the Company •Corporate intranet, internal emails, and other announcement channels (such as promotion posters at facilities) •Human resources team •Employee training and classroom courses •Regular and ad-hoc communication meetings, such as Manager Development Consulting Committee, Operations Engineer Training Committee, Manufacturing Department Technical Committee, Proprietary Information Protection (PIP) Committee, etc. •Employee suggestion channels, such as immediate response system, employee opinion box, Wellness Center, wellness website, employee PIP & IT Security mailbox and hot line, etc. •Ombudsman system •Whistleblower procedures •Employee Welfare Committee event questionnaire survey •The biennial "Employee Opinion Survey on Company Core Values" and "Employee Engagement Survey" •TSMC Human Rights Policy courses •Annual "Ethics and Compliance" training course online regulatory compliance program that includes Insider Trading, Export Control & Antitrust (unfair competition)
Shareholders/Investors	•Annual general meeting of shareholders •Quarterly earnings conference call •Investor conferences •Face-to-face meetings, video conference call and telephone conference call •Emails •Annual reports, Sustainability reports, 20-F filings to US SEC •Material announcements to Taiwan Stock Exchange, and corporate press releases on the Company's website
Customers	•Customer satisfaction survey •Customer meetings •Customer audits •Business and technology assessment •Email responses to the issues that customers are concerned
Suppliers/Contractors	•Supplier meetings •Supply Chain Security Association Meetings •Environmental, Safety, and Health Training Program - Experience Sharing Workshops •Supplier Ethics and Code of Conduct Promotion •On-site consult and audit •Supply Online 360 - Global responsible supply chain management platform •Supplier self-assessment questionnaire (SAQ) •Supplier ethics survey •Supply Chain Worker Grievance Channel
Government	•Official correspondence and visits •Industry experience and advice sharing, and keynote speeches •Meetings (such as communication meetings, public hearings, forums, seminars or social gatherings) •Communication platforms of the industry associations and NGOs
Society	•Arts events in the communities •Sponsorship of youth development events •Sponsorship of charity projects and emergency aid •Sponsorship of non-profit organizations to support educational projects •Professorship endowments and student scholarships at universities •Project collaboration and visits •Support of non-profit organizations and institutions via monetary and in-kind donation, as well as providing necessary manpower for a good cause •Volunteer activities and services •TSMC ESG website, newsletters, mailbox and Facebook page •TSMC Education and Culture Foundation and TSMC Charity Foundation websites •"Sending Love" charity platform

Responsibilities of ESG Steering Committee and ESG Committee Members

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

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

TSMC has issued an annual non-financial report for the 23rd consecutive year. The TSMC Sustainability Report (formerly the Corporate Social Responsibility Report) discloses ESG material issues identified following the Global Reporting Initiative (GRI) standards and aligned with stakeholders' feedback. Integrating Enterprise Risk Management (ERM) with ESG management, TSMC demonstrates how the Company implements risk mitigation measures, addresses international & industry trends, and operates sustainably at TSMC Taiwan Facilities (headquarters, wafer fabs, back-end packaging fabs, and testing fabs located in Taiwan), TSMC China, TSMC Nanjing, WaferTech in the United States, VisEra and other subsidiaries. In addition to GRI, the report also adopts the Task Force on Climate-related Financial Disclosures (TCFD Recommendations) framework, Sustainability Accounting Standards Board (SASB) reporting standards, AA 1000 Accountability Principle and is assured by DNV GL Business Assurance Co. Ltd. in accordance with DNV VeriSustain™ protocol and GRI standards.

The Company will continue to operate responsibly and with integrity regardless of future challenges. TSMC has adopted nine UN Sustainable Development Goals (SDGs), set 2030 long-term goals, and implemented approaches accordingly. Anchored in the concept of Global Partnerships, SDG 17, TSMC collaborates with stakeholders as well as business partners of the value chain to create sustainable value for its stakeholders and is the only semiconductor company chosen for the Dow Jones Sustainability World Indices for the past 21 consecutive years.

2021 ESG Awards and Ratings

Category	Organization	Awards and Ratings
Overall ESG	Dow Jones Sustainability Indices (DJSI)	•Dow Jones Sustainability World Index for the 21st consecutive year •Dow Jones Sustainability Emerging Markets Index
	MSCI ESG Indexes	•MSCI ACWI ESG Leaders Index component •MSCI ESG Research – AAA Ratings •MSCI ACWI SRI Index component •MSCI ACWI Islamic Index component •MSCI Emerging Markets ESG Leaders Index
	Sustainalytics	•Company ESG Risk Ratings: Low ESG Risk – Semiconductor Industry
	ISS ESG	•"Prime" Rated by ISS ESG Corporate Rating
	Terra Carta Seal	•The Sustainable Markets Initiative
	FTSE4Good Index	•FTSE4Good Emerging Index component •FTSE4Good All-World Index component •FTSE4Good TIP Taiwan ESG Index component
	Corporate Knights	•Global 100 Most Sustainable Corporations
	World Benchmarking Alliance (WBA)	•SDG 2000 – The 2,000 Most Influential Companies
	RobecoSAM (S&P Global)	•The Sustainability Yearbook Award 2021 – Silver Class
	CommonWealth Magazine	•Excellence in Corporate Social Responsibility Award – Large cap –1st Place
	Taiwan Institute of Sustainable Energy	•The Most Prestigious Sustainability Awards – Top Ten Domestic Corporates for the 6th consecutive year •Sustainability Action Awards – Gold Award •Best Sustainability Report Award •English Report – Gold Award •Cyclical Economy Leadership Award •Information Security Leadership Award •Supply Chain Leadership Awards

(Continued)

Category	Organization	Awards and Ratings
Economy, Governance	TIME Magazine	•TIME100 Most Influential Companies
	Institutional Investor Magazine	•Most Honored Company (Technology/Semiconductors) – All-Asia •Best Overall ESG (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best CEO (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best CFO (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Program (Technology/Semiconductors) – 1st Place (buy-side and sell-side)- All-Asia •Best Investor Relations Professional (Technology/Semiconductors) - 1st Place (buy-side and sell-side) – All-Asia •Best Investor Relations Team (Technology/Semiconductors) – 1st Place (buy-side and sell-side) – All-Asia
	IFI Claims	•2021 Top 50 US Patent Assignees
	Forbes	•The World's Top 10 Largest Technology Companies in 2021 •Global 2000
	PricewaterhouseCoopers (PwC)	•FutureBrand Index component
	FORTUNE	•2021 World's Most Admired Companies •Fortune Global 500
	Brand Finance	•Tech 100 2021
	FinanceAsia	•Best Managed Listed Company
	Asiamoney	•2021 Asia's Outstanding Companies – Semiconductors & Semiconductor Equipment Sector for the 4th consecutive year
	Business Today	•Top 1,000 Enterprises in Taiwan, Hong Kong and Mainland China
	Taiwan Stock Exchange	•Top 5% in Corporate Governance Evaluation of Listed Companies for the 7th consecutive year
	PricewaterhouseCoopers	•Global Top 100 Companies by market capitalization for the 9th consecutive year
	R.O.C. Ministry of Economic Affairs Intellectual Property Office	•Ranked No.1 in Taiwan patent applications for the 6th consecutive year •Ranked No.1 in Taiwan patent grants for the 2nd consecutive year
	R.O.C. Ministry of Economic Affairs Industrial Bureau	•Taiwan Intellectual Property Management System (TIPS) AAA certification (The first and only company to receive the highest certification)
	Germany Federal Office for Information Security	•Common Criteria, ISO/IEC 15408 – EAL6 Site Certification – Fab 12B, Fab 14A, Fab14B, Fab 15B
	British Standards Institution	•ISO/IEC 27001 Information Security Management Certification
	Corporate Synergy Development Center	•Taiwan Continuous Improvement Award – Gold Tower Award – Fab 3, Fab 8, Fab 14A, Corporate Information Technology •Taiwan Continuous Improvement Award – Silver Tower Award – Fab 8, Fab 15A, Fab 15B •Taiwan Continuous Improvement Award – Best Improvement Innovation Award – Fab 14A
Environment, Safety and Health	Corporate Knights & As You Sow	•2021 Carbon Clean 200™ List
	Carbon Disclosure Project (CDP)	•2021 CDP Supplier Engagement Leaderboard •Water Security A Ratings •Climate Change B Ratings
	Alliance for Water Stewardship (AWS)	•"Platinum" class certification – Fab 5, Fab 12A, Fab 12B, Advanced Backend Fab 3
	U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) certification	•"Gold" class certification – Fab 18 P2, P3 Manufacturing Facility, Fab 18 P1 Office
	UL 2799	•Zero Waste to Landfill "Platinum" class certification – Fab 12
	R.O.C. Industrial Development Bureau, Ministry of Economic Affairs	•Excellence in Voluntary Carbon Offsets Award – Fab 14A, Fab 15A
	Environmental Protection Administration, Executive Yuan, R.O.C.	•National Enterprise Environmental Protection Award
Society	Cheers	•Ranked No.1 in Most Admired Companies to Young Generations for the 5th consecutive year
	Forbes	•2021 World's Best Employers
	R.O.C. Ministry of Culture	•The 15th Arts and Business Awards – Special Award – The Long-term Patron Award
	R.O.C. Ministry of Education	•Social Education Contributions Awards – Group Award

7.2 Environmental, Safety and Health (ESH) Management

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

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

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

In order to meet regulatory and customer requirements for the management of hazardous materials, TSMC has adopted the IECQ QC 080000 Hazardous Substance Process Management (HSPM) System. All TSMC Fabs have been QC 080000 certified and maintained valid since 2007. Through the establishment of QC 080000, TSMC ensures that its products comply with international regulatory and customer requirements, including the European Union's "Restriction of Hazardous Substances (RoHS) Directive," the EU's "Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)," the "Montreal Protocol on Substances that Deplete the Ozone Layer," the "halogen-free in electronic products" initiative, perfluorooctane sulfonates (PFOS), perfluorooctanoic acid (PFOA) and related substances restriction standards. In addition, TSMC started a project for reducing usage of hazardous substance N-methylpyrrolidinone (NMP) in 2016. NMP usage in process has been reduced 75% by 2021 comparing to 2016, and the project will continue promoting for further reduction.

Since 2011, TSMC has adopted the ISO 50001 Energy Management System for continuous improvement in energy conservation. As of 2021, all TSMC and its subsidiaries' manufacturing facilities had received ISO 50001 Energy Management System certification and maintained valid except for the WaferTech subsidiary in the U.S. WaferTech was originally scheduled to receive the certification in 2021 but certification was postponed to 2022 due to the impact of the COVID-19 pandemic.

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

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

TSMC uses priority work management and self-management to govern services provided by contractors. The Company requires contractors performing level-one high-risk operations to complete certification for technicians and to establish their own ISO 45001 safety and health management system. The emphasis on self-management nurtures the sense of responsibility, with the goal of promoting safety awareness and technical improvement for all contractors in the industry. For onsite contractor personnel, TSMC has standardized courses on safety and health and increased the frequency of such

courses to improve training effectiveness and safety awareness. To ensure the Company's safety protocols are accurately delivered to contractors on a timely basis, TSMC has established a digital platform for mutual communication so that onsite operational risks can be mitigated.

TSMC collaborates with suppliers to manage the sustainability of the supply chain, including formulating supplier sustainability standards, drawing up audit plans, performing audits and tracking improvements, coaching and training, and re-coaching for suppliers with poor performance. Coaching and training are key focuses in 2021, including the establishment of a fire protection designated personnel system (113 suppliers have established) and fire protection practice training (48 participants from 48 suppliers), inviting suppliers to participate as observers for TSMC's annual emergency response drills for six consecutive years (131 participants from 131 suppliers for the cumulative number), environmental, safety and health sustainability forum and good cases sharing (298 participants from 201 suppliers), etc., to improve the performances of environmental protection, safety, health and fire protection. TSMC conducts environmental, safety and health audits to suppliers' manufacturing sites, and actively assists suppliers to improve their environmental, safety and health performances. In addition, the Company requests that suppliers conduct carbon emissions inventory and encourages them to implement measures to save energy, reduce carbon emissions, conserve water and reduce waste.

7.2.1 Environmental Protection

Climate Change and Energy Management

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

Given that climate change could potentially affect operations and pose financial risk, in 2018 TSMC adopted recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) released by the Financial Stability Board (FSB) to identify risks and opportunities and further establish metrics and target management based on the results identified.

Management Structure of TSMC Climate-related Risks and Opportunities

Category	Management Strategy and Actions
Governance	Board of Directors periodically reviews climate change related risks and opportunities •ESG Steering Committee led by the Chairman is the Company's top organization dealing with climate change management. The Chairperson of ESG Committee serves as the Executive Secretary. The ESG Steering Committee reviews TSMC's climate change strategies and goals every quarter and reports to the Board of Directors. •The Energy and Carbon Reduction Committee led by the Vice President of Fab Operations is the organization that deals with action implementation of climate change risks and opportunities TSMC. This committee develops management plans, reviews the execution status and discusses future plans on a quarterly basis.
Strategy	Identify short-, medium- and long-term climate risks and opportunities through cross-departmental discussion
	Assess the potential operational and financial impact of significant climate risks and opportunities to the Company
	Conduct situational analysis, evaluate SBT (Science Based Targets) and net-zero emissions
Risk Management	Use the TCFD framework to establish TSMC's climate risk identification process
	Follow the risk identification and ranking on climate change to develop relevant responding projects
	Integrate climate risk identification and assessment into the Enterprise Risk Management (ERM) process
Metrics and Targets	Set management metrics related to climate change
	Examine the impact on Company operations and assess the risks and mitigation strategies for scope 1, 2 and 3 through annual inventory of ISO 14064-1 and disclosure of greenhouse gas emissions
	Develop climate change management objectives and review achievement progress and actual performance

Financial Impact Analysis of Climate Risks and Opportunities

Climate Risks	Potential Financial Impact	Climate Opportunities	Potential Financial Impact	2021 Actions
GHG Emissions Cap and Carbon Tax/Carbon Fee	Restriction on capacity expansion, increase in operation costs	•Participation in renewable energy plans •Participation in carbon trading market	Early purchases of renewable energy, successfully increasing production capacity	•TSMC's power purchasing agreements for renewable energy totaled 1.6 GW (Gigawatts) •Purchased 1,660 GWh in renewable energy, renewable energy certificates (REC), and carbon credit to offset 100% of the electricity carbon emissions of overseas subsidiaries and offices
Trend of Net Zero Emission	•Increased cost of installation and operation of carbon reduction equipment •Increased cost of purchasing carbon offset products	Win public recognition and carbon emissions offset cooperation	Accumulate carbon credits in preparation for future carbon emissions offset	•Passed the application for fluorinated-GHG and nitrous oxide reduction offset project reward •TSMC global offices used carbon credits to achieve net zero emissions
		Develop low-carbon product services to improve product energy efficiency	Satisfy customers' needs for energy-saving products and increase revenue	Developed energy saving products for the 5nm and more advanced manufacturing process
Commitment of EIA (Environmental Impact Assessment)	The development of advanced technologies potentially hampered by inability to obtain renewable energy and reclaim water	Use reclaimed water	Smooth construction of advanced production lines	Continued the construction of TSMC reclaimed water plant in Southern Taiwan Science Park
Uncertainty of Development of New Energy Saving Technology	Rising electricity consumption in advanced technology production lines increases production costs	Construct green buildings	Lower utility costs	Received three green building certifications
Impact on the Company's Reputation	Inability to satisfy the expectations of stakeholders, negatively impacting the Company's reputation	Improve the Company's reputation	Upgrade TSMC performance in stakeholders' sustainability ranking	•Leads the industry as the only semiconductor company chosen for the Dow Jones Sustainability Indices (DJSI) for the 21st consecutive years •TSMC ranked as one of CDP (carbon disclosure program) Water Security Leaders A class
Flood	Production negatively affected, causing financial losses and a decrease in revenue	Increase resilience and ability to cope with natural disasters	Strengthen climate resilience, lower risk of operations disruption, and reduce potential losses	•Raised the building base of Fab 18 Phase 4 and Phase 5 two meters higher •Fab 18 Phase 4 and Phase 5 are committed to using and developing reclaimed water •Established a comprehensive water monitoring system
Drought				
Increasing Insurance Premiums for Natural Disasters	Increase in operating costs			
Rising Temperatures	Increase in electricity consumption, cost, and carbon emissions	Strive for low-carbon, green manufacturing	Save energy and cut costs	Conserved 700 GWh of electricity through energy-saving projects

Greenhouse Gas (GHG) Emission Reduction and Energy Management

Facing the threats presented by extreme weather, TSMC sets strategies and targets, ensure sound execution and build a sustainable culture. In 2021, TSMC declared the long-term goal of Net Zero Emissions by 2050, while setting the short-term goal of zero growth in emissions by 2025. By actively implementing emission reduction measures, the Company is working to return its carbon emissions to the 2020 level by 2030. TSMC commits to becoming a global leader in green manufacturing.

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

Since 2005, TSMC has completed the GHG (Greenhouse Gas) inventory program and taken a complete inventory of its GHG emissions to gain ISO 14064 certification. The inventory shows that the major direct GHG emissions are PFCs, which are widely used in the semiconductor manufacturing process. The primary indirect GHG emission is electricity consumption. The analysis of the inventory data is not only to meet domestic regulatory reporting requirements but also to serve as a baseline reference for the Company's strategy to reduce GHG emissions.
Since 2005, TSMC has also participated the international organization Carbon Disclosure Program (CDP) to publicly disclose climate change related information for 17 consecutive years and to continuously review and improve management practices through it.

In response to the commitment of global climate summit "Paris Agreement" and the Republic of China's "Greenhouse Gas Reduction and Management Act" promulgated in 2015, TSMC initiated a cross-functional platform for corporate carbon management in 2016. The three areas of focus of this platform are legal compliance, carbon emission reduction, and carbon credit acquisition. In addition to participating in official regulatory consultation and communications meetings, TSMC also sets short-, medium- and long-term reduction targets through the energy and carbon reduction committee led by the Fab Operations vice president. The measures are carried out by energy and carbon reduction teams of individual fabs. Because more than 75% of TSMC's GHG emissions come from electricity consumption, the Company always emphasizes energy conservation and carbon reduction initiatives. TSMC has not only implemented energy-conserving designs in its manufacturing fabs and offices but has also continuously improved the energy efficiency of its facilities during operation. These efforts simultaneously reduce both carbon dioxide gas emissions and costs. As a result, TSMC has conserved 2.4 billion kilowatt hours (kWh) of power since 2016.

From 2015 to 2017, TSMC voluntarily participated in the R.O.C. Ministry of Economic Affairs' green power purchasing program for three consecutive years and became the largest buyer in Taiwan, purchasing 400 million kilowatt hours (kWh) of green power. Although the Taiwan Power Company stopped selling green power in 2018, TSMC still aggressively negotiates the purchase of renewable energy with renewable energy suppliers in Taiwan. Targeting a long-term commitment of 100% renewable energy for the Company, TSMC has committed to achieving a target of 40% renewable energy by 2030. Since 2018, the overseas manufacturing fabs and offices have purchased renewable energy, REC and carbon credits to offset all carbon emissions caused by power consumption. All TSMC overseas sites achieved zero carbon emission of electricity consumption in 2021 again. TSMC also used carbon credits to offset carbon emissions of natural gas consumption in kitchens, achieving the milestone of net zero emissions for TSMC global offices. Although development of renewable energy in Taiwan is in an early stage, TSMC has established a renewable energy task force and continues to communicate closely with government through the Association of Science Park Industries and Taiwan Semiconductor Industry Association. The Company has made recommendations to the government in the hope that the collaboration would speed up renewable energy development in Taiwan. The recommendations include expanding the development of offshore wind power and increasing the supply of the renewable energy trading platform. TSMC continues to find renewable energy. By the end of 2021, the total installation capacity of renewable energy contracted reached 1.6 GW (Gigawatts). The renewable energy will be provided to TSMC gradually after the related business process has been completed. This is a clear manifestation of the Company's active support of the UN Sustainable Development Goals (SDGs).

In 2020 TSMC became the first semiconductor company to join RE100 (the global corporate renewable energy initiative) and pledged that power consumption of all the Company's manufacturing plants and offices will be 100% supplied from renewable energy by 2050.

TSMC GHG Emissions in Recent Two Years

Unit: Metric ton CO_2 equivalent

Year	Scope 1	Scope 2
2021	2,591,231	8,045,102
2020	2,450,354	7,459,856

Note 1: GHG includes CO_2, CH_4, N_2O, HCFCs, PFCs, SF_6, NF_3
Note 2: Scope 1: Direct emissions, e.g., direct emission sources owned or controlled by the Company
Scope 2: Indirect emissions from energy, e.g., indirect GHG emissions caused by the externally purchased electricity, heat or steam
Note 3: The data in the table are preliminary results calculated by TSMC and have not yet been verified by a third party.

TSMC GHG Reduction Target and Achievement Status

Strategy	2030 Goal	2021 Target and Achievement	Achievement Status
Continue to use best available technology to reduce emissions of GHG and become an industry leader in low-carbon manufacturing	Reduce GHG emissions per unit product (metric ton of carbon dioxide equivalent ($MTCO_2e$)/12-inch equivalent wafer mask layer) by 40% (Base year: 2010)	Reduced GHG emissions per unit product (metric ton of carbon dioxide equivalent ($MTCO_2e$)/12-inch equivalent wafer mask layer) by 23% (Target: 20%)	Achieved

Air and Water Pollution Control

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

To make the most effective use of Taiwan's limited water resources, all TSMC fabs strive to increase water reclamation rates by adjusting the water usage of manufacturing equipment and improving wastewater reclamation systems. By 2021, TSMC's unit product water consumption had decreased by 15% from 2010 levels. The long-term target is a 30% decrease by 2030. All fabs meet or exceed the process water reclamation rate standard of the Science Park Administration. Some fabs are able to reclaim more than 90% of process water, outperforming most semiconductor fabs around the world. The Company also makes every effort to reduce non-manufacturing-related water consumption, including water used in air conditioning systems, sanitary facilities, wall cleaning and landscaping activities and in kitchens. TSMC uses an intranet website to collect and measure water recycling volumes company-wide.

Since water resources are inherently local, TSMC shares its water saving experience and expertise with other semiconductor companies through the Association of Science-Based Industrial Park to promote water conservation in order to achieve the Science Park's goals and ensure a long-term balance of supply and demand. In addition, TSMC has committed to using partially reclaimed water in newly constructed fabs in the future in order to further reuse water resources and support government policy and promotion for reclaimed water.

To further enhance water resources management, TSMC has adopted and followed the AWS Standard, the world's only sustainable water management standard. Early in 2019, Fab 6 and Fab 14 Phase 5/6/7 began serving as demonstration factories and received AWS certification, making TSMC the first semiconductor enterprise in the world to receive AWS platinum level certification. In 2020, Fab 15A and Fab 15B, located in Central Taiwan Science Park, passed a third-party verification audit and obtained AWS platinum level certification simultaneously. In December 2021, Fab 12A, Fab 12B, Fab 5, located in Hsinchu Science Park, and Longtan Science Park Advanced Backend Fab 3 passed a third-party verification audit and will obtain AWS platinum level certification in early 2022.

TSMC Water Usage in Recent Two Years

Year	Total Water Usage (m^3)	Unit Product Water Usage (L/12-inch wafer-e-layer)
2021	82,674,982	119.7
2020	77,257,163	128.4

Note 1: Including TSMC fabs in Taiwan and Subsidiaries.
Note 2: The data in the table are preliminary results collected by TSMC and have not yet been verified by a third party.

TSMC Water Usage Reduction Target and Achievement Status

Strategy	2030 Goal	2021 Target and Achievement	Achievement Status
Enforce climate change mitigation policies, implement water conservation and water shortage adaptation measures	Reduce unit water consumption (liter/12-inch equivalent wafer mask layer) by 30% (Base year: 2010)	Reduced unit water consumption by 15% (Target: 9%)	Achieved

Waste Management and Recycling

TSMC has expanded its facilities rapidly in recent years both at home in Taiwan and overseas. In 2021 the Company's total outsourced general waste was 335,080 tons; its hazardous waste was 339,623 tons; and its unit waste disposal was 0.99 kg/12-inch equivalent wafer mask layers. This compared to 277,340 tons of outside general waste, and 298,400 tons of

hazardous waste, and unit waste disposal of 1.01 kg/12-inch equivalent wafer mask layers in 2020, respectively.

To achieve the goal of sustainable resource utilization, TSMC has a designated unit responsible for waste recycling and disposal. The priorities are process waste reduction, onsite and offsite recycling and regeneration, with the last options being incineration and landfill. In 2017, TSMC amended its articles of incorporation to add four business items for chemical materials to ensure waste flow and reduce risks of improper waste disposal by commissioned agencies. It also set up onsite resource activation facilities to convert waste resources produced by processing activities into products to be used onsite or to sell to other factories. In 2021, TSMC recycled waste copper sulfate, cobalt-containing liquid, waste sulfuric acid and waste ammonium sulfate, all of which were regenerated into products. The Company also developed the system of cryolite synthesis whereby waste HF (hydrogen fluoride) is recycled and regenerated into raw material for other industries. As a result, it has become a leader in waste resources regeneration. At the same time, TSMC's fabs in Taiwan achieved a 95% waste recycling rate for the seventh consecutive year, with a landfill rate below 1% for the twelfth consecutive year, and Fab 12 won the platinum UL 2799 certification, the highest grade for zero landfill.

TSMC Waste Quantity and Outsourced Unit Waste Disposal in Recent Two Years

Year	Outsourced General Waste (ton) (Note 1)	Outsourced Hazardous Waste (ton) (Note 1)	Outsourced Unit Waste Disposal (Note 2) (kg/12-inch equivalent wafer mask layer)
2021	335,080	339,623	0.99
2020	277,340	298,400	1.01

Note 1: The total quantity of outsourced waste includes Taiwan facilities and subsidiaries.
Note 2: The data is Outsourced Unit Waste Disposal of Taiwan facilities.
Note 3: The data in the table are preliminary results collected by TSMC and have not yet been verified by a third party.

TSMC Waste Reduction Target and Achievement Status

Strategy	2030 Goal	2021 Target and Achievement	Achievement Status
Promote waste reduction by source separation and require vendors to provide low chemical consumption equipment	Outsourced unit waste disposal per wafer ≦0.50 (kg/12-inch equivalent wafer mask layer)	Outsourced unit waste disposal per wafer 0.99 (kg/12-inch equivalent wafer mask layer) (Target: ≦1.15%)	Exceeded

In order to ensure that all waste is treated and recycled properly, TSMC closely tracks the waste that is implemented in the process of recycling and reuse by clean and disposal vendors. The Company carefully selects waste disposal and recycling vendors that have certificates and permits, regularly checks the onsite operational status, disposal declaration forms, operational records, etc., compares with actual reuse and disposal, and takes proactive steps to strengthen vendor auditing. For example, all waste transportation contractors have agreed to join the GPS Satellite Fleet so that the cleanup transportation routes and abnormal stays for all trucks can be traced. All waste recycling and disposal vendors have installed closed-circuit TV systems at operating sites to monitor and audit waste handling. In addition, TSMC also conducts an ongoing survey of recycled product tracking and requires all recycling contractors to report their recycled product sales monthly to track waste flow and ensure that actions are taken to adhere to lawful and proper waste recycling and treatment.

Environmental Accounting

The purpose of TSMC's environmental accounting system is to identify and quantify environmental costs for internal management. At the same time, the Company also evaluates the savings or economic benefits of environmental protection programs so as to continuously promote economically-effective programs. While environmental expenses are expected to continue to rise, environmental accounting can help manage these costs more effectively. TSMC's environmental accounting measures various environmental costs, establishes independent environmental account codes, and provides the data to all units for use in annual budgeting. The Company's economic benefit evaluation calculates cost savings for energy conservation, water or waste reductions and recycling benefits in accordance with its environmental protection programs. The benefits disclosed in this report include real income from projects such as waste recycling and savings from major environmental projects. In 2021, the total benefits of environmental protection programs of TSMC fabs including waste recycling exceeded NT$5,457 million.

2021 Environmental Cost of TSMC Fabs in Taiwan

Unit: NT$ thousands

Classification	Description	Expense	Investment
1. Direct Costs for Reducing Environmental Impact			
(1) Pollution Control	Fees for air pollution control, water pollution control, and others	7,436,815	7,139,312
(2) Resource Conservation	Costs for resource (e.g. water) conservation	0	2,904,434
(3) Energy Conservation	Costs for electricity consumption saving	0	2,202,263
(4) Greenhouse Gas Emissions Reduction	Include: (1) Process greenhouse gas emissions abatement equipment; (2) Premium for purchasing renewable energy; (3) Costs for purchasing carbon credits; (4) Other costs for direct greenhouse gas emissions reduction	1,090,032	4,075,604
(5) Industrial Waste Disposal and Recycling	Costs for waste treatment (including recycling, incineration and landfill)	2,932,377	0
2. Indirect Costs for Reducing Environmental Impact (Environmental Managerial Costs)	(1) Cost of training (2) Environmental management system and certification expenditures (3) Environmental impact measurement and monitoring fees (4) Environmental protection product costs (5) Environmental protection organization fees	432,606	693,743
3. Other Environmental Costs	(1) Costs for soil decontamination and natural environment remediation (2) Environmental damage insurance fees and environmental taxes and expenses (3) Costs related to environmental settlement, compensations, penalties and lawsuits	127	0
Total		11,891,957	17,015,356

2021 Environmental Efficiency of TSMC Fabs in Taiwan

Unit: NT$ thousands

Category	Description	Efficiency
1. Cost Savings of Environmental Protection Projects	Energy savings	3,999,575
	Water savings	31,002
	Waste reduction	818,000
2. Economic Efficiency for Industrial Waste Recycling	Recycling of used chemicals, wafers, sputter targets, batteries, lamps, packaging materials, paper cardboard, metals, plastics, and other waste	609,200
Total		5,457,777

Green Building and Green Factory

Since 2006, TSMC has adopted standards from both the Taiwan Green Building and the U.S. Green Building Council – Leadership in Energy and Environmental Design (LEED) for new fab and office building designs to achieve better energy and resource efficiency than conventional designs. The Company has also continued to upgrade existing office buildings to comply with the LEED standard each year. From 2008 to 2021, 37 of TSMC's fabs and office buildings achieved LEED certifications: three platinum and 34 gold. During this time, the Company also received five Taiwan Intelligent Building diamond-class certifications and 25 Taiwan EEWH (ecology, energy saving, waste reduction and health) certifications: 20 diamond, four gold and one silver. Since 2009, the Company has been a leading supporter of the Taiwan government's Green Factory Label standard, including the Clean Production and Factory Green Building evaluation systems. TSMC received Taiwan's first Green Factory Label and 13 labels in total as of the end of 2021, and is the most awarded company in Taiwan.

Environmental Audit Results in Violation of Environmental Regulations

In 2021 and as of the date of this Annual Report, TSMC has no incurred any environmental pollution related losses. However, the Company was given two fines totaling NT$127,000 for violating environmental regulations: NT$100,000 issued on 01/06/2021 for failing to take effective air pollutant control measures at our construction site (Section 2 of Article 23 of the Air Pollution Control Act) – the Company took immediate corrective action after the audit by the competent authority; NT$27,000 issued on 01/28/2021 for construction site work failing to conform with the Run-off Wastewater Reduction Plan approved by competent authority (Article

18 of the Water Pollution Control Act; Article 10 of Water Pollution Control Measures and Test Reporting Management Regulations) – the Company updated the Run-off Wastewater Reduction Plan after the audit by the competent authority and enhanced related management measures.

7.2.2 Sustainable Products

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

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

Environmental Contributions by TSMC Foundry Services

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

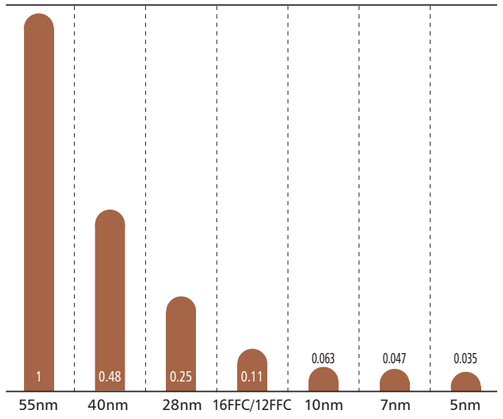
- To improve sustainability, TSMC continues to drive the development of advanced semiconductor process technologies to support customer designs that result in the most advanced, more energy-efficient and more environmentally friendly products. In each new technology generation, circuitry line widths shrink, making transistors smaller and reducing product power consumption for completing the same tasks or achieving the same level of performance. In addition, calculations using the Industry, Science, and Technology International Strategy Center's model reveal that, in 2020, TSMC helped the world conserve 4kWh of energy for each 1kWh spent in production – a testimony to TSMC's commitment to green manufacturing both internally and externally. (Please refer to "Sustainable Products by TSMC Facilitates Global Energy Conservation" on page 11 of TSMC's 2020 Corporate Social Responsibility Report.)
- As TSMC quickly ramped up its 7nm and newer generation technologies, combined wafer revenue contribution grew significantly from 9% in 2018 to 50% in 2021. TSMC's objective is to continue R&D investment and to increase wafer revenue contribution in 7nm and beyond technologies, helping the Company achieve both profitable growth and sustainability.

TSMC Wafer Revenue Contribution from 7nm and Beyond Technologies

2018	2019	2020	2021
9%	27%	41%	50%

Chip Die Size Cross-Technology Comparison

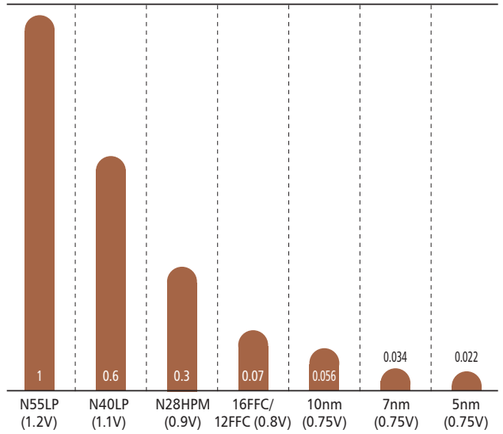
Die size reduces as line width shrinks



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

Chip Total Power Consumption Cross-Technology Comparison

More power is saved as line width shrinks



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

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

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

3. Drive Industry-leading, Comprehensive ULP Technology Platform

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

4. Develop Greener Manufacturing to Lower Energy Consumption

- TSMC continues to develop more advanced and efficient technologies to reduce energy/resource consumption and pollution per unit during the manufacturing process, as well as power consumption and pollution during product use. In each new technology generation, circuitry line widths shrink, making chips smaller for the same circuit designs and lowering the energy and raw materials consumed for per chip in manufacturing. In addition, the Company continuously provides process simplification and new design methodology based on its manufacturing excellence to help customers reduce design and process waste so as to produce more advanced, energy-saving and environmentally friendly products. For total energy savings and benefits realized in 2021 through TSMC's green manufacturing, see Environmental Accounting on page 150-151 in this Annual Report.

Social Contributions by TSMC Foundry Services

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

- The rapid growth of smartphones and tablets in recent years reflects strong demand for mobile devices, which accelerates innovations for IC products such as baseband, RF transceivers, application processors (AP), wireless local area networks (WLAN), CMOS image sensors (CIS), near field communication (NFC), Bluetooth, and global positioning systems (GPS) among others. These mobile devices offer remarkable convenience in daily living, and TSMC contributes significant value to these devices in the following ways: (1) new TSMC process technologies help chips achieve faster computing speeds in smaller sizes, leading to smaller form factors for these electronic devices. In addition, TSMC SoC technology integrates more functions into one chip, reducing the total number of chips in electronic devices, again resulting in a smaller system form factor; (2) new TSMC process technologies also help chips reduce power

consumption, allowing mobile devices to be used for a longer period of time; and (3) TSMC helps spread the growth of more convenient wireless connectivity such as 3G/4G/5G and WLAN/Bluetooth, meaning people can communicate more efficiently and "work anytime and anywhere," significantly increasing the mobility of modern society.

2. Unleash Customers' Innovations in CMOS Image Sensor (CIS) and Micro-electromechanical Systems (MEMS) that Enhance Human Health and Safety; Create Green Products

- To make machines smarter, safer and more user and environmentally friendly, sensors are a must. Optical, acoustic, motion, and environment sensors are mostly made using either CIS or MEMS technologies. TSMC continues to put substantial effort into developing more advanced CIS and MEMS technologies to enable customers to create new products for new applications. For CIS, TSMC and customers have extended applications from traditional RGB (red, green, blue) sensing to 3D depth sensing, optical fingerprint, and near infrared NIR (NIR) machine vision, etc. For MEMS, TSMC and customers have extended applications from traditional motion sensing to microphone, bio-sensing, micro-speakers, medical ultrasound actuators and more. TSMC customers' sensing devices are used in consumer electronics, mobile communication, automotive electronics, industrial, and medical devices, and so on. They are increasingly smaller, faster, more accurate and more energy efficient, greatly enhancing human convenience, health and safety, and contributing to sustainability. For instance, TSMC customers' CIS and MEMS products are used in a number of advanced medical treatments as well as in preventative health care applications. Examples include early warning systems to minimize the injury from falls for the elderly, systems to detect physiological changes, car safety systems and other applications that significantly improve human health and safety. One noteworthy example in 2021: TSMC helped a customer deliver innovative DNA sequencing chips. These chips assisted researchers in quickly identifying variants of the COVID-19 virus, including the first Omicron, contributing significantly to the understanding and control of the pandemic. Moreover, advanced sensors can make equipment smarter by monitoring the working environment and conditions so that it can operate in a more energy efficient way.

7.2.3 Safety and Health

Safety and Health Management

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

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

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

Working Environment and Employee Safety and Health Protection

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

There were a total of 44 occupational injuries in 2021, with 44 people, representing approximately 0.08% of the total number of employees. The disabling injury frequency rate (FR) was 0.38, under the 0.4 target, but the disability injury severity rate (SR) was 7, in excess of the target of 4. In response, TSMC is reviewing potential improvement measures, such as interlocking devices for machine safety, as well as standard safety operation procedures. In addition to regular reviews, the caring program for employees has been enhanced and managers have been directed to pay closer attention to the physical and mental state of employees to ensure their safety and health during their work.

TSMC safety and health management operations apply to the following:

- Equipment Safety and Health Management

In addition to meeting regulatory requirements and internal standards, as well as mitigating ESH-related risks when building or expanding facilities, TSMC also maintains procedures governing new equipment and raw materials, requires safety approvals for bringing new tools online, updates safety rules, and implements seismic protection and other safety measures. TSMC requires that all new tools meet SEMI-S8 requirements and that appropriate supplementary control measures be taken to reduce ergonomic risk. Moreover, the Company endeavors to automate 300mm front-opening unified pod (FOUP) transportation to prevent accumulative physical damage caused by repetitive manual handling of 300mm FOUPs. TSMC 300mm fabs have converted to automatic transportation control.

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

As a technology leader in the global semiconductor industry, TSMC operates increasingly diversified process tools and introduces new chemicals in the R&D stage. Before using new tools or new chemicals, they are reviewed carefully by the new tools and new chemical review committee. The purpose is to ensure that new tools are compliant with the semiconductor industry's safety standards (such as SEMI-S2) and that new chemicals' environmental, safety and health concerns can be well controlled, including engineering controls, application of personal protection equipment, and operational safety training during storage, transportation, usage and disposal. A total of 403 cases of new tools and chemical substances were passed by the New Tool and New Chemical Review Committee in 2021, and they were evaluated and reviewed in accordance with the aforementioned standards before entering TSMC.

- General Safety Management, Training and Audit

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

TSMC Safety-Related Training and Promotion in the Recent Two Years

Year	Total Number of Employees who have Completed Safety-related Training
2021	289,398
2020	244,747

- Working Environment Hazardous Factors Management

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

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

• Health Promotion Program

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

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

• Emergency Response

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

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

In response to the COVID-19 pandemic, TSMC added tabletop exercises to disaster prevention training in an effort to minimize the risks of group infections that may arise as a result of full-scale exercises. The inclusion of tabletop exercises also aids in the verification of full-scale exercise procedures to make disaster response more comprehensive, thus effectively mitigating the impact of various types of disasters on business continuity in the future. As of 2021, 215 sessions of tabletop exercises had been completed in addition to 125 full-scale exercises.

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

• Emerging Infectious Disease Response

TSMC has a dedicated corporate ESH organization to monitor emerging infectious diseases around the world, to assess any potential impact on the workplace, and to provide an appropriate strategic response plan. In previous outbreaks such as SARS in 2003, H1N1 influenza in 2009, and MERS in 2015, as well as with the current COVID-19 threat, TSMC followed the Taiwan CDC's (Centers for Disease Control) rules and convened the corporate influenza response committee to develop the Company's strategies. These strategies included educating employees in prevention and response, publishing guidelines for managers, establishing guidelines for employee sick leave due to flu, and installing alcohol-based hand sanitizers at appropriate locations. The Committee also monitors the status of employee leave due to illness and, at the same time, develops a continuity plan to address manpower shortages and minimize business impact. In order to protect the health of TSMC employees, their families, and work partners, employees are encouraged to be fully vaccinated if in healthy condition. In addition, employees should complete daily body temperature checks and update vaccination information before entering TSMC, and continue to follow epidemic prevention regulations such as wearing a mask, washing their hands frequently and maintaining safe social distancing.

• Employee Physical and Mental Health Enhancement

TSMC believes that employee physical and mental health is not only fundamental to maintaining sound business operations but is also an important part of a corporation's responsibility. To preserve and promote the physical and mental health of its employees, TSMC fosters collaboration among the onsite industrial safety and environmental protection department, the onsite medical personnel of the health center, and physicians of occupational medicine. TSMC strives to reduce cerebral and cardiovascular conditions or injuries that might be induced or aggravated by overwork, night work or shift work. The Company conducts programs for maternal health protection and for prevention of cumulative trauma disorders as well. TSMC devotes significant resources to mental health awareness, focused not only on hazards at work but also on employee health in general. In 2021, through planned personal health management, (1) 550 female employees participated in the maternal health program, and the completion rate was 100%. All but one of them were at first degree risk, where there was no potential harm to the mother or infant. One woman was assessed as second degree risk, with potential harm to the mother or infant, but after proper adjustments to her work duties, her risk was downgraded to first degree. (2) Through analysis of historical cerebral and cardiovascular cases of its employees, TSMC has sharpened the disease assessment criteria used by contracted doctors, and, in combination with internal annual health examination reports and work scheduling information, the Company was able to identify 3,520 employees with middle to high risk for cerebral and cardiovascular diseases. These employees were provided with health education and medical assistance. Also, they and their managers received recommended changes in working hours and shifts to reduce health risks. (3) 168 employees were identified as high risk for cumulative trauma disorders, including one who might also have job-related risks, and the Company adjusted working conditions accordingly to reduce potential risks. (4) As obesity has been considered as a precursor to hyperglycemia, dyslipidemia, and hypertension, TSMC has held health promotion programs for several consecutive years. In 2021, in light of the COVID-19 pandemic and catering to the younger generation's preference for social and video media, apart from physical weight loss activities (671 participants; total weight loss reached 3,155.82kg),TSMC conducted a series of online interactive activities including: three sessions of "Health Lecture Online" with 1,527 attendees in total; three health education videos about Weight-loss Diets/ Sport and improving sleeping, with a total of 8,947 visits; three sessions of online quizzes on the same three topics of Weight-loss Diets/Sport and improving sleeping, with a total of 14,910 attendees; and two session of "Selection of Health Diet" of Low-sugar diets and 211 balanced diet, with 3,373 participants. In addition, one-on-one sleep counseling related to psychology has been increased in 2021, 220 attendees in total. The above activities have all received positive feedback from employees. In the future, we will continue to implement relevant health promotion activities to take care of the health of employees.

7.2.4 Supplier Management

Management Aspect

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

Supply Chain Sustainability

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

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

To enhance supply chain sustainability and streamline risk management, the Company is committed to collaborating with its suppliers to maintain full compliance with Taiwan's environmental, safety, health and fire protection regulations. TSMC developed a supplier's code of conduct, which

affirmed basic labor rights and standards for health, safety, environment, ethics and management systems. TSMC works with suppliers to evaluate the risk and impact on the economy, the environment, and society and to make continuous improvement. The Company has helped boost suppliers' performance of sustainability through experience sharing and training and hopes to establish a world-class semiconductor supply chain that exceeds international standards and serves as a global benchmark.

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

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

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

7.3 TSMC Education and Culture Foundation

Taiwan has had its biggest battle against the COVID-19 pandemic in 2021. Every sector in the society has been gravely affected and the efforts to launch artistic, cultural and educational campaigns have been seriously challenged. In the face of the pandemic, the TSMC Education and Culture Foundation still endeavours to continue its support for various educational and cultural events, art exhibitions and performance. At the same time, as a response to pandemic restriction measures, the Foundation taps into the power of technology to make its upmost efforts to encourage girls' high schools to engage in the scientific fields, to empower teachers in rural communities, and to initiate classes that teach and continue traditional theater courses on university campuses. In doing so, the cultural and educational work to which the Foundation has dedicated itself would not be disrupted because of the severe pandemic situation. In 2021, the TSMC Education and Culture Foundation has invested NT$87 millions in culture and education events that revolve around three main themes: "nurture young talents," "education collaboration," and "advocation for arts and culture". The Foundation's efforts continue to inject abundant resources into the arts and education sectors in the society in order to drive the society to the common good, begin a positive cycle, and grow sustainably.

Value Gender Diversity, Encourage Women to Engage in STEM Fields

The TSMC Education and Culture Foundation teams up with National Museum of Natural Science to organize the TSMC Female Scientists Tour. Through trips to science museums and talks by female scientists, the Foundation hopes to spark female students' interest and nurture female talent in the sciences. In 2021, the Foundation invited 450 girls from 12 girls' high schools in Taiwan to take part in the TSMC Female Scientists Tour, whose program includes a visit to the educational hall at the World of Semiconductors. The trip was guided by female engineers at TSMC, giving students a chance to further understand the designing, manufacturing and application of semi-conductors. Other events in the trip include talks by renown Taiwanese female scientists and outstanding female engineers to share with young students their educational trajectory and work experiences. The students further learned the application of basic electronics at circuit board workshops. The TSMC Education and Culture Foundation hopes to encourage more female high school students to engage in studying in the STEM fields, thereby nurturing more science and technology talents for the country.

In 2021, the TSMC Education and Culture Foundation also continues to hold the TSMC Cup – Competition of Scientific Short Talk. Held online due to the pandemic, the competition had two award categories: "competition for expressing scientific innovation" and "essay awards on reading popular science books". Apart from the two competition themes, the Foundation organized a series of online classes for competing participants, aiming to strengthen their ability to express themselves. Pandemic constraints did not diminish participation, as 530 total students took part.

On top of promoting popular science education, the TSMC Education and Culture Foundation continues its advocation for youngsters to pursue and realize their dreams. In 2021, the Foundation expands the TSMC U Dreamer from a regional competition into a national one, inviting college students from all over Taiwan to take part in the competition and form projects base on the UN's Sustainable Development Goals (SDGs). This competition expects the students to care about and pay attention to UN's 17 sustainable development goals while pursuing individual dreams, thereby making a personal contribution to society. The 2021 TSMC U Dreamer has 122 teams of college students from all over Taiwan. The finalists are teams from the National Taiwan Ocean University, National Taiwan University, National Taiwan Normal University, Taipei National University of the Arts, National Taipei University, National Chengchi University, Hsuan Chuang University, National Tsing Hua University, National Yang Ming Chiao Tung University, National Chung Cheng University and National Taitung University. The winning teams are awarded a total prize of NT$3 million at the TSMC U Dreamer competition and begin a one-year Dreamer project.

Empower Teachers in Rural Areas, Narrow the Gap between Urban and Rural Schools

The TSMC Education and Culture Foundation pays special attention to the gap between the education resources in the urban versus rural areas. Since 2004, the Foundation has partnered with CommonWealth Education Foundation to launch the "Hope Reading Project," which continues to improve the reading environment and culture in schools in rural areas. As a response to the implementation of the new *General Guidelines of Curriculum Guidelines of 12-Year Basic Education*, the Foundation recognises the importance of empowering frontline educators. Therefore, in 2021, the TSMC Education and Culture Foundation works in tandem with the CommonWealth Education Foundation and the Reading Research and Education Center of Dr. Hwawei Ko of National Tsing Hua University to initiate a five-year "Teaching & Learning" project. This project is launched in 51 schools in rural communities, whose contents include offering professional lesson plans for teachers, online educational recommendations, and support system while building a mechanism to research and discuss classroom teaching plans. The project creates a strong support for teachers in the rural areas, helps the teachers guide children in rural communities to improve their reading and writing capacities in real terms, opens up makeover opportunities, and narrows the gap between urban and rural schooling in real terms.

On top of the empowering project for teachers in rural schools, the TSMC Education and Culture Foundation continues to invest in education for the underprivileged students, encouraging them to attain a college education. In 2021, a total of 82 students from disadvantage backgrounds have been awarded scholarships to study at National Central University, National Tsing Hua University, National Chung Cheng University, National Cheng Kung University, and National Sun Yat-sen University. The scholarships allow the students to study without care.

Arts and Culture Education Takes Root in the Young, Pass the Cultural Torch

The TSMC Education and Culture Foundation places a high value on culture, continues to support the foundations of arts and culture education. In 2021, the Foundation collaborates with GuoGuang Opera Company on the "Pass the Theater Torch on College Campus" project, funding a year-long course at National Tsing Hua University and Tunghai University. The course contents include background knowledge on Peking opera and textual analysis of the plays. The classes invited professional actors from GuoGuang Opera Company to teach the students the acting techniques of Peking opera in person. The performance practices in class deepen the students' experience of traditional theater, created opportunities for traditional art to reach to a new generation and provide the soil for the seeds of theater to take root. Apart from offering classes on university campuses, the Foundation organized four special "TSMC Theater – When Love Knocks at your Door"

performances of Peking opera for nearly 500 students from high schools in the Hsinchu area, from National Tsing Hua and Yang Ming Chiao Tung Universities. Through professional guided talks and demonstrations from professional actors, the Foundation lead the younger generation to appreciate the beauty of Peking opera. Furthermore, in 2021 the TSMC Education and Culture Foundation sponsors the broadcasting program "The Stories of Peking Opera" on the radio station, Sound of IC: Sound of Hsinchu Science Park. The program is hosted by GuoGuang Opera Company's artistic director Anqi Wang and National Tsing Hua University's Associate Professor Lo Shih-lung of the Department of Chinese Literature, introducing theater culture in depth but in way easy for lay people to understand by giving the audience a peek into the interesting cultural allusions behind the traditional drama plays.

As well as the traditional theatre, the Foundation continues to sponsor National Symphony Orchestra, beginning the second year "Music Traverse" project and inviting conductor Lü Shao-chia to teach a master class. The Foundation hopes to broaden the music students' artistic horizon through the experience of music maestros and the continuation of techniques. Meanwhile, the master classes were preserved in the form of documentaries, which will be publicly broadcast in media and streamed online, thereby allowing more students and the public to appreciate the beauty of classical music.

The annual TSMC Hsinchu Arts Festival in 2021 centered around the theme of Her Stage, painting portraits of female artists through exhibitions, performances and public talks. The theme of Her Stage demonstrated to the public the extraordinary achievements of female artists and presented their life stories. Although some of the 28 exquisite programs took place online due to the pandemic, they still attracted over 17,000 viewers.

7.4 TSMC Charity Foundation

Since its establishment in 2017, the TSMC Charity Foundation has focused on the four pillars of public welfare in its charitable programs and projects: Care for the Disadvantaged, Taking Care of the Elderly, Filial Piety Promotion, and Protection of the Environment. Under the guidance of Chairperson Sophie Chang, the TSMC Charity Foundation observes social issues and incidents from the front lines and strives to resolve social inequalities through enhancement of rural education and provision of emergency aid, allowing disadvantaged families and children from rural areas to receive material assistance and a chance to improve their situation. The TSMC Charity Foundation has established a public welfare platform to connect love from all corners of society, to promote social change through charitable acts, and to bring together corporations for the betterment of society.

The TSMC Charity Foundation continued to invest in public welfare and expand project impacts in 2021 to improve its scope of services:

- **Care for the Disadvantaged:** This pillar is focused on the two main themes of "rural empowerment" and "support for the disadvantaged." The TSMC Charity Foundation continued to provide education and life assistance to institutes in need and to children in rural areas, including volunteer services, economic support, food supplement, purchasing high-tech equipment and developing educational materials. In 2021, the TSMC Charity Foundation emphasized rural students' employability. The Foundation integrated with 2 enterprise (HO TAI DEVELOPMENT CO., LTD. and HAPPY RECOME CO. LTD), providing training for 78 rural students from 3 vocational high school obtaining the skills to work locally, meanwhile addressing labor shortage. By collaborating with 104 JOB BANK to publish 55 career exploring videos (target 100 videos above) and designing vocational aptitude tests. We assist grade 7 and 8 to match their interest and potential, find the suitable career path for them.

In 2021, the TSMC Charity Foundation assisted 8,359 students at 96 rural care institutes and collaborated with TSMC volunteers to produce tutorial videos of scientific experiments and science education. When classes were suspended due to the pandemic, the TSMC Charity Foundation supplied science learning materials to help students study at home and moved physical classes online to ensure students could continue their studies. The TSMC Charity Foundation's "Sending Love" initiative visited and screened disadvantaged individuals in need of financial support, and also provided financial assistance and daily necessities funded using internal and external donations from TSMC to improve the living conditions of highly vulnerable and disadvantaged families. As of 2021, the TSMC Charity Foundation had supported a total of 182 families.

- **Take Care of the Elderly:** The TSMC Charity Foundation collaborated with Networking of Love partners to enhance the health and welfare of solitary elders by connecting them with social welfare groups and medical units. In 2021, the TSMC Charity Foundation provided shuttle buses to the Home Clinic Dulan and Longchang Health Promotion Station in Taitung County for solitary elders to increase medical mobility and efficiency, and to enhance medical service quality and effectiveness. The TSMC Charity Foundation continued to collaborate with the TSMC Facility Division to provide repairs for disadvantaged elders living in five earthquake-damaged locations in Hualien, thus giving them a safe and healthy living space. Current Networking of Love partners include Taipei Municipal Gandau Hospital, Taipei Veterans General Hospital, Miao-Li Hospital, Old Five Old Foundation, Fongyuan Hospital, China Medical University Hospital, Taichung City Private Lin Tseng Lien Welfare And Charity Foundation, Taiwan Puli Care Association, Sin-Lau Hospital, Tainan Municipal Hospital, Jianan Psychiatric Center Department of Health, Mennonite Christian Hospital, Mennonite Social Welfare Foundation, Fooyin University, Penghu Hospital, and Cishan Hospital.

- **Promote Filial Piety:** The TSMC Charity Foundation promoted and passed on the spirit of filial piety in Eastern culture by enhancing its awareness in younger generations so as to alleviate social risks and issues related to aging societies. In 2021, the TSMC Charity Foundation continued to work with the Filial Piety Resource Center of the K-12 Education Administration Ministry of Education to promote these concepts, conducting two filial piety parent-child workshops at elementary schools where TSMC volunteers provide long-term care, while jointly producing short filial piety films and organizing award ceremonies to recognize excellent teaching plans so as to encourage both teachers and students in initiating intergenerational dialogues and to implant the modern spirit of filial piety within the hearts of all participants.

- **Protect the Environment:** The TSMC Charity Foundation helped disadvantaged social welfare institutes increase green energy usage and save power while also promoting environmental awareness online and continuing to implement the Cherish Food Program to reduce resource wastage. In 2021, the TSMC Charity Foundation launched the "Green Energy" project, installing solar panels and LED lights for disadvantaged social welfare institutes so they could utilize green energies, save energy, and reduce carbon emissions. Charitable donations fell sharply during the pandemic, and therefore income from wholesale energy helped these social welfare institutes maintain operations. To help students continue their studies when classes were suspended during the pandemic, the TSMC Charity Foundation promoted environmental education themed around local ecological characteristics through online classes so that students unable to leave their homes could learn environmental knowledge on their computers. The TSMC Charity Foundation continued to work with many food companies to donate imperfect foods to 122 collaborating care institutes for the disadvantaged, thereby achieving the goals of reducing food waste and protecting the environment. Current collaborators include Chi Mei Frozen Food Co., Ltd., Hunya Food Co., Ltd., Laurel Corporation, Lian-Hwa Foods Corp., HSIN TUNG YANG Co., Ltd., Great Wall Group, and LAO XIE ZHEN Co., Ltd.

7.5 TSMC i-Charity Platform

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

In 2021, a total of 45,500 people donated more than NT$80.05 million to the "Support Medical Personnel Project," the "Oxygen for India" campaign, the "Taroko Express crash" donation campaign, "Junyi Academy," "Teach for Taiwan," and other charity projects.

The TSMC i-Charity Platform has accumulated more than NT$194 million in donations from 2014 to 2021. TSMC continues to carry out its social commitments and encourages its employees to care for and give back to society in various ways.

7.6 Sustainable Development Implementation Status as Required by the Taiwan Financial Supervisory Commission

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Summary	
1. Does the Company have a governance structure for sustainability development and a dedicated (or ad-hoc) sustainable development organization with Board of Directors authorization for senior management, which is reviewed by the Board of Directors?	V		For the Company's governance structure for sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 140-144 of this Annual Report. For the structure, operations, implementation status and frequency of reporting to the Board of Directors of the Company's dedicated organization for sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 140-144 of this Annual Report. For progress of the Board of Directors' supervision of the Company's sustainability development, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 140-144 of this Annual Report.	None
2. Does the Company follow materiality principle to conduct risk assessment for environmental, social and corporate governance topics related to company operation, and establish risk management related policy or strategy?	V		For the Company's scope of risk assessment, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 140-144 of this Annual Report. For the principle, process and result of the Company's materiality analysis of ESG related topics and risk management related policy or strategy, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 140-144 of this Annual Report.	None
3. Environmental Topic (1) Has the Company set an environmental management system designed to industry characteristics?	V		(1) For the Company's environmental management system and the regulations on which it is based, please refer to "7.2 Environmental, Safety and Health (ESH) Management" on page 145-158 and "6.3.6 Risks Regarding Non-Compliance with Export Control, Environmental and Climate Change Related Laws, Regulations and Accords, and Failure to Timely Obtain Requisite Approvals Necessary for Conducting Business" on page 136-137 of this Annual Report. For the Company's international certifications and their scope, please refer to "7.2 Environmental, Safety and Health (ESH) Management" on page 145-158 of this Annual Report.	None
(2) Is the Company committed to improving resource efficiency and to the use of renewable materials with low environmental impact?	V		(2) For the Company's improvement of resource efficiency and the use of renewable materials, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Waste Management and Recycling" on page 146-147 of this Annual Report.	
(3) Does the Company evaluate current and future climate change potential risks and opportunities and take measures related to climate related topics?	V		(3) For the Company's evaluation of potential risks and opportunities of current and future climate change and measures taken related to climate topics, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management" on page 146-147 of this Annual Report.	
(4) Does the Company collect data for greenhouse gas emissions, water usage and waste quantity in the past two years, and set greenhouse gas emissions reduction, water usage reduction and other waste management policies?	V		(4) For the Company's statistical data, intensity and data coverage for greenhouse gas emissions, water usage and waste quantity in the past two years, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Greenhouse Gas (GHG) Emission Reduction and Energy Management/Air and Water Pollution Control/Waste Management and Recycling" on page 146-150 of this Annual Report. For the Company's policies on the reduction of greenhouse gas emissions, water usage and waste management, please refer to "7.2.1 Environmental Protection" on page 146-152 of this Annual Report. For the Company's certification status of each data set and its scope, please refer to "7.2.1 Environmental Protection – Climate Change and Energy Management/Greenhouse Gas (GHG) Emission Reduction and Energy Management/Air and Water Pollution Control/Waste Management and Recycling" on page 146-150 of this Annual Report.	

(Continued)

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Summary	
4. Social Topic (1) Does the Company set policies and procedures in compliance with regulations and internationally recognized human rights principles?	V		(1) For the Company's policies and specific programs in compliance with regulations and internationally recognized human rights principles, please refer to "5.6.1 Human Rights Policy and Specific Actions" on page 104 of this Annual Report.	None
(2) Has the Company established appropriately managed employee welfare measures (include salary and compensation, leave and others), and link operational performance or achievements with employee salary and compensation?	V		(2) For the Company's employee welfare measures, including salary and compensation, diverse and fair workplace, leave, allowance, bonuses, and subsidies, please refer to "5.6.6 Competitive Overall Compensation" on page 107, "5.6.2 Diversity and Inclusion" on page 105, "5.6.3 Workforce Structure" on page 105, and "5.6.7 Employee Benefit System Superior to Statute" on page 107-108 of this Annual Report.	
(3) Does the Company provide employees with a safe and healthy working environment, with regular safety and health training?	V		(3) For the Company's status with respect to providing employees with a safe and healthy working environment, with regular safety and health training, please refer to "7.2.3 Safety and Health" on page 154-157 of this Annual Report. For the Company's related certification status and its scope, please refer to "7.2.3 Safety and Health" on page 154-157 of this Annual Report. For a presentation and analysis of the Company's occupational accidents in the current year and the number of employees involved, as well as related improvement measures taken, please refer to "7.2.3 Safety and Health" on page 154-157 of this Annual Report.	
(4) Has the Company established effective career development training plans?	V		(4) For the scope and implementation of the Company's employee training plans, please refer to "5.6.5 People Development" on page 105-106 of this Annual Report.	
(5) Does the Company's product and service comply with related regulations and international rules for customers' health and safety, privacy, sales, labelling and set policies to protect consumers' or customers' rights and consumer appeal procedures?	V		(5) Not applicable as TSMC is not an end product manufacturer. For the Company's policy to protect customers' rights, please refer to "5.4.1 Customers" on page 100 of this Annual Report.	
(6) Does the Company set supplier management policy and request suppliers to comply with related standards on the topics of environmental, occupational safety and health or labor right, and their implementation status?	V		(6) For the Company's supplier management policy and related compliance norms, and specific requirements for suppliers in environmental protection, occupational safety and health or labor rights, please refer to "7.2.4 Supplier Management" on page 157-158 and "5.6.1 Human Rights Policy and Specific Actions" on page 104 of this Annual Report. For a description of the implementation of the Company's supplier management policy and related compliance norms, please refer to "7.2.4 Supplier Management" on page 157-158 of this Annual Report.	
5. Does the Company refer to international reporting rules or guidelines to publish Sustainability Report to disclose non-financial information of the Company? Has the said Report acquire third party verification or statement of assurance?	V		For the reporting rules and guidelines that the Company follows in disclosing non-financial information in the Sustainability Report, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 140-144 of this Annual Report. For third party verification of the Sustainability Report, please refer to "7.1 Environmental, Social and Governance (ESG) – Overview" on page 140-144 of this Annual Report.	None
6. If the Company has established its sustainable development code of practice according to "Listed Companies Sustainable Development Code of Practice," please describe the operational status and differences. TSMC follows the ESG Policy set by the Chairman, Dr. Mark Liu. For sustainable development operational status, please refer to "7. Environmental, Social and Governance (ESG)" on page 140-163 of this Annual Report and environmental social governance related information on the Company's website: https://esg.tsmc.com/en/index.html				
7. Other important information to facilitate better understanding of the Company's implementation of sustainable development: Please refer to TSMC's website for its sustainable development implementation status: https://esg.tsmc.com/en/index.html				

2021

- Approves investment to set up a subsidiary – TSMC Japan 3DIC R&D Center, Inc.
- Announces the establishment of subsidiary Japan Advanced Semiconductor Manufacturing, Inc. (JASM)
- Commits to reaching net zero emissions target by 2050
- Selected as an index component of the semiconductor constituent company of The Dow Jones Sustainability Indices (DJSI) for **21** consecutive years
- As of end-2021, obtained a total of **37** US LEED (Leadership in Energy and Environmental Design) certifications – **3** Platinum and **34** Gold
- As of end-2021, obtained EEWH (Ecology, Energy Savings, Waste Reduction and Health) certification for a total of **25** Taiwanese green buildings – **20** Diamond, **4** Gold, and **1** Silver

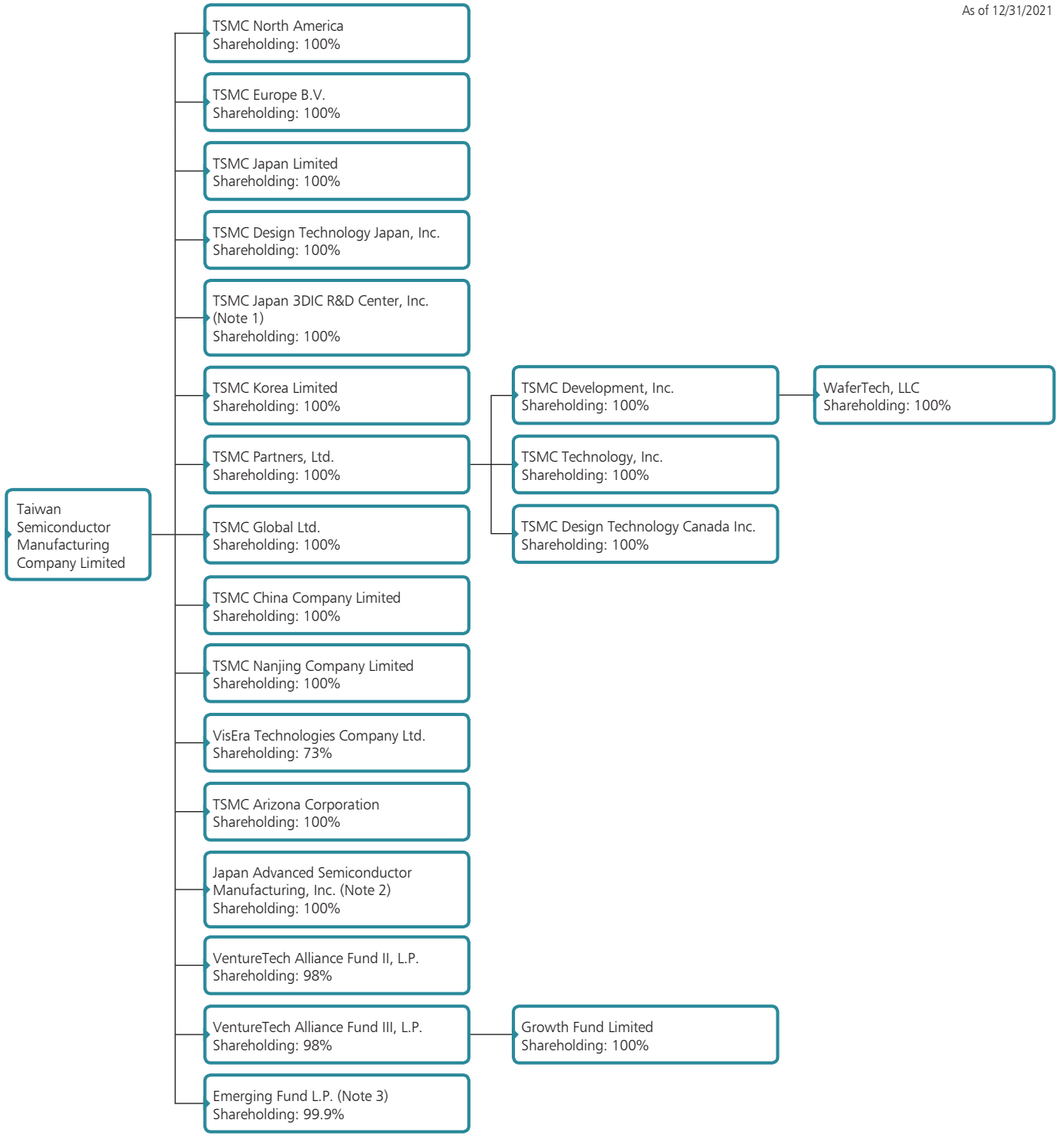


8. Subsidiary Information and Other Special Notes

8.1 Subsidiaries

8.1.1 TSMC Subsidiaries Chart

As of 12/31/2021



Note 1: TSMC Japan 3DIC R&D Center, Inc. is established in March 2021.
Note 2: Japan Advanced Semiconductor Manufacturing, Inc. (JASM) is established in December 2021 and has increased its capital in January 2022. After the increase in capital, TSMC's shareholding in JASM decreased from 100% to 81%. This transaction was accounted for as an equity transaction since the transaction did not change TSMC's control over JASM. The decrease of TSMC's shareholding percentage is caused by Sony Semiconductor Solutions Corporation's investment in JASM as a minority shareholder.
Note 3: Emerging Fund L.P. is established in January 2021.

8.1.2 Business Scope of TSMC and Its Subsidiaries

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

8.1.3 TSMC Subsidiaries

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

As of 12/31/2021

Company	Date of Incorporation	Place of Registration	Capital Stock		Business Activities
TSMC North America	Jan. 18, 1988	San Jose, California, U.S.	US$	11,000	Sales and marketing of integrated circuits and semiconductor devices
TSMC Europe B.V.	Mar. 04, 1994	Amsterdam, The Netherlands	EUR	100	Customer service and supporting activities
TSMC Japan Limited	Sep. 10, 1997	Yokohama, Japan	JPY	300,000	Customer service and supporting activities
TSMC Korea Limited	May 02, 2006	Seoul, Korea	KRW	400,000	Customer service and supporting activities
TSMC Design Technology Japan, Inc.	Jan. 10, 2020	Yokohama, Japan	JPY	750,000	Engineering support activities
TSMC Japan 3DIC R&D Center, Inc.	Mar. 29, 2021	Yokohama, Japan	JPY	555,000	Engineering support activities
TSMC China Company Limited	Aug. 04, 2003	Shanghai, China	RMB	4,502,080	Manufacturing, sales, testing, and computer-aided design of integrated circuits and other semiconductor devices
TSMC Nanjing Company Limited	May 16, 2016	Nanjing, China	RMB	6,650,119	Manufacturing, sales, testing, and computer-aided design of integrated circuits and other semiconductor devices
TSMC Arizona Corporation	Nov. 10, 2020	Arizona, U.S.	US$	0.77	Manufacturing, sales, and testing of integrated circuits and other semiconductor devices
Japan Advanced Semiconductor Manufacturing, Inc.	Dec. 10, 2021	Kumamoto, Japan	JPY	2,878,750 (Note)	Manufacturing, sales, testing, and computer-aided design of integrated circuits and other semiconductor devices
TSMC Technology, Inc.	Feb. 20, 1996	Delaware, U.S.	US$	0.001	Engineering support activities
TSMC Development, Inc.	Feb. 16, 1996	Delaware, U.S.	US$	0.001	Investing in companies involved in semiconductor manufacturing
WaferTech, LLC	Jun. 03, 1996	Delaware, U.S.	US$	0	Manufacturing, sales, and testing of integrated circuits and other semiconductor devices
TSMC Partners, Ltd.	Mar. 26, 1998	British Virgin Islands	US$	988,268	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities
TSMC Design Technology Canada Inc.	May 28, 2007	Ontario, Canada	CAD	2,434	Engineering support activities
TSMC Global Ltd.	Jul. 18, 2006	British Virgin Islands	US$	11,384,000	Investment activities
VentureTech Alliance Fund II, L.P.	Feb. 27, 2004	Cayman Islands	US$	3,487	Investing in technology start-up companies
VentureTech Alliance Fund III, L.P.	Mar. 25, 2006	Cayman Islands	US$	96,619	Investing in technology start-up companies
Growth Fund Limited	May 30, 2007	Cayman Islands	US$	2,604	Investing in technology start-up companies
Emerging Fund, L.P.	Jan. 27, 2021	Cayman Islands	US$	10,711	Investing in technology start-up companies
VisEra Technologies Company Ltd.	Dec. 01, 2003	Hsinchu, Taiwan	NT$	2,932,991	Research, design, development, manufacturing, sales, packaging and test of color filter

Note: Japan Advanced Semiconductor Manufacturing, Inc. increased its capital to JPY 49,849,550 thousand in January 2022.

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

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

Unit: NT$ (USD), except shareholding

As of 12/31/2021

Company	Title	Name	Shareholding	
			Shares (Investment Amount)	% (Investment Holding %)
TSMC North America	Director Director President/CEO	Sylvia Fang Rick Cassidy (Note 1) David Keller	- - - TSMC holds 11,000,000 shares	- - - 100%
TSMC Europe B.V	Director Director President	Wendell Huang Maria Marced (Note 2) Maria Marced (Note 2)	- - - TSMC holds 200 shares	- - - 100%
TSMC Japan Limited	Director Director President	Sylvia Fang Makoto Onodera Makoto Onodera	- - - TSMC holds 6,000 shares	- - - 100%
TSMC Korea Limited	Director Director Director	C.C. Pan Chih-Chun Tsai (Note 3) Wendell Huang	- - - TSMC holds 80,000 shares	- - - 100%
TSMC Design Technology Japan, Inc.	Director Director Supervisor	Cliff Hou Wendell Huang Morris Cheng	- - - TSMC holds 15,000 shares	- - - 100%
TSMC Japan 3DIC R&D Center, Inc.	Director Director Supervisor	Marvin Liao Diane Kao Morris Cheng	- - - TSMC holds 11,100 shares	- - - 100%
TSMC China Company Limited	Chairman Director Director Supervisor President	F.C. Tseng Y.P. Chin Roger Luo Lora Ho Roger Luo	- - - - - (TSMC invests US$596,000,000)	- - - - - (100%)
TSMC Nanjing Company Limited	Chairman Director Director Director Supervisor Supervisor President	Lora Ho Y.P. Chin Cliff Hou Roger Luo Wendell Huang Sylvia Fang Roger Luo	- - - - - - - (TSMC invests US$1,000,000,000)	- - - - - - - (100%)
TSMC Arizona Corporation	Director Director Director Director President/CEO	Cliff Hou Y.L. Wang Sylvia Fang Wendell Huang Rick Cassidy	- - - - - TSMC holds 770,001 shares	- - - - - 100%
Japan Advanced Semiconductor Manufacturing, Inc.	Director Director Director Supervisor (Note 4)	Y.H. Liaw Morris Cheng Simon Wang Diane Kao	- - - - TSMC holds 57,575 shares (Note 5)	- - - - 100% (Note 5)
TSMC Technology, Inc.	Chairman Director President	Wendell Huang Cliff Hou Cliff Hou	- - - TSMC Partners, Ltd. holds 10 shares	- - - 100%
TSMC Development, Inc.	Chairman Director President	Wendell Huang Sylvia Fang Wendell Huang	- - - TSMC Partners, Ltd. holds 10 shares	- - - 100%
WaferTech, LLC	Director Director President	Y.H. Liaw Wendell Huang Tsung-Chia Kuo	- - - TSMC Development, Inc. holds 293,636,833 shares	- - - 100%
TSMC Partners, Ltd.	Director Director President	Wendell Huang Sylvia Fang Wendell Huang	- - - TSMC holds 988,268,244 shares	- - - 100%
TSMC Design Technology Canada Inc.	Director Director Director President	Cliff Hou Cormac Michael O'Connell Sylvia Fang Cliff Hou	- - - - TSMC Partners, Ltd. holds 2,300,000 shares	- - - - 100%
TSMC Global Ltd.	Director Director	Wendell Huang Sylvia Fang	- - TSMC holds 11,384 shares	- - 100%
VentureTech Alliance Fund II, L.P.	None	None	(TSMC invests US$3,189,066)	(98.00%)
VentureTech Alliance Fund III, L.P.	None	None	(TSMC invests US$94,687,012)	(98.00%)
Growth Fund Limited	None	None	(VentureTech Alliance Fund III, L.P. invests US$2,603,768)	(100%)
Emerging Fund, L.P.	None	None	(TSMC invests US$10,700,000)	(99.90%)
VisEra Technologies Company Ltd.	Chairman Director Director Independent Director Independent Director Independent Director President	Robert Kuan George Liu Diane Kao Laura Huang Emma Chang P.H. Chang S.C. Hsin	154,600 shares - - - - - - TSMC holds 213,619,000 shares	0.05% - - - - - - 72.83%

(Continued)

Note 1: In January 2022, Mr. David Keller replaced Mr. Rick Cassidy as a director of TSMC North America.
Note 2: In January 2022, Dr. Paul de Bot replaced Ms. Maria Marced as a director and the President of TSMC Europe B.V.
Note 3: In January 2022, one directorship of TSMC Korea Limited became vacant after Mr. Chih-Chun Tsai's retirement.
Note 4: In January 2022, Mr. Yuichi Horita was appointed as the President, and he and Mr. Yasuhiro Kono were elected as new directors of Japan Advanced Semiconductor Manufacturing, Inc.
Note 5: Japan Advanced Semiconductor Manufacturing, Inc. increased its capital in January 2022. After the capital increase, shares owned by TSMC increased to 807,651 shares while TSMC's ownership decreased to 81.01%.

8.1.6 Operational Highlights of TSMC Subsidiaries

Unit: NT$ thousands, except EPS (NT$) As of 12/31/2021

Company	Capital Stock	Assets	Liabilities	Net Worth	Net Revenues	Income (Loss) from Operation	Net Income (Loss)	Basic Earning (Loss) Per Share
TSMC North America	304,414	308,231,309	303,360,160	4,871,149	1,045,067,460	244,683	375,611	34.15
TSMC Europe B.V.	3,146	810,989	301,109	509,880	495,048	33,982	21,875	109,377.31
TSMC Japan Limited	72,420	222,427	90,016	132,411	236,721	9,860	4,662	776.98
TSMC Design Technology Japan, Inc.	181,050	546,145	178,001	368,144	361,654	23,850	13,803	937.32
TSMC Japan 3DIC R&D Center, Inc.	133,977	1,709,885	1,439,372	270,513	229,744	13,422	4,197	777.79
TSMC Korea Limited	9,360	43,036	2,179	40,857	18,565	1,707	2,802	35.02
TSMC Development, Inc.	0.03	30,271,369	0	30,271,369	1,539,343	1,539,288	1,521,812	152,181,227.80
TSMC Partners, Ltd.	27,349,335	55,001,765	1,464	55,000,301	1,815,177	1,809,507	1,804,174	1.83
TSMC Global Ltd.	315,040,816	563,292,007	188,652,601	374,639,406	3,674,656	1,303,742	1,303,742	115,281.46
WaferTech, LLC	0	6,161,247	720,872	5,440,375	7,735,520	1,802,590	1,456,072	4.96
TSMC China Company Limited	19,530,473	76,910,158	3,219,851	73,690,307	21,127,962	7,808,870	8,555,130	NA
TSMC Nanjing Company Limited	28,848,883	78,586,631	32,369,519	46,217,112	26,869,700	11,650,999	12,283,446	NA
VisEra Technologies Company Ltd.	2,932,991	15,089,175	6,172,601	8,916,574	9,029,178	2,707,262	2,165,280	7.24
TSMC Arizona Corporation	21	146,673,748	130,006,052	16,667,696	0	(4,250,082)	(4,810,127)	(10,641.98)
Japan Advanced Semiconductor Manufacturing, Inc.	694,930	1,389,946	6,392	1,383,554	0	(6,426)	(6,426)	(1,939.97)
TSMC Technology, Inc.	0.03	1,855,101	1,019,213	835,888	2,835,329	135,010	78,921	7,892,068.10
TSMC Design Technology Canada Inc.	53,131	367,130	88,364	278,766	297,228	27,021	25,324	11.01
VentureTech Alliance Fund II, L.P.	96,507	108,239	0	108,239	1,829	(729)	(1,073)	NA
VentureTech Alliance Fund III, L.P.	2,673,845	282,753	0	282,753	0	(8,978)	(8,978)	NA
Growth Fund Limited	72,057	219,604	0	219,604	0	(1,217)	(1,217)	NA
Emerging Fund L.P.	296,408	286,491	0	286,491	109	(10,015)	(10,015)	NA

8.2 Status of TSMC Common Shares and ADRs Acquired, Disposed of, and Held by Subsidiaries: None.

8.3 Special Notes

8.3.1 Private Placement Securities in 2021 and as of the Date of this Annual Report: None.

8.3.2 The Listing of Penalties, Major Deficits, and State of Any Efforts to Make Improvements, Arising from Any Legal Penalties Imposed by Regulatory Authorities on the Company or Its Employees, or any Company Punishment toward Employees for Violating Internal Control Rules, Where Such Penalties or Punishments May Have Material Impacts on Shareholders' Interests or Securities Prices, in 2021 and as of the Date of this Annual Report: None.

8.3.3 Any Events in 2021 and as of the Date of this Annual Report that Had Material Impacts on Shareholders' Interests or Securities Prices as Stated in Item 3 Paragraph 2 of Article 36 of Securities and Exchange Act of Taiwan: None.

8.3.4 Other Necessary Supplement: None.

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TSMC's depositary receipts of the common shares are listed on New York Stock Exchange (NYSE) under the symbol TSM. The information relating to TSM is available at http://www.nyse.com and http://mops.twse.com.tw

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TSE: 2330
NYSE: TSM

TSMC Annual Report 2021 (II)
Financial Statements



- Taiwan Stock Exchange Market Observation Post System: https://mops.twse.com.tw
- TSMC annual report is available at https://investor.tsmc.com/english/annual-reports

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Consolidated Financial Statements for the Years Ended December 31, 2021 and 2020 and Independent Auditors' Report

REPRESENTATION LETTER

The entities that are required to be included in the combined financial statements of Taiwan Semiconductor Manufacturing Company Limited as of and for the year ended December 31, 2021, under the Criteria Governing the Preparation of Affiliation Reports, Consolidated Business Reports and Consolidated Financial Statements of Affiliated Enterprises are the same as those included in the consolidated financial statements prepared in conformity with the International Financial Reporting Standard 10, "Consolidated Financial Statements." In addition, the information required to be disclosed in the combined financial statements is included in the consolidated financial statements. Consequently, Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries do not prepare a separate set of combined financial statements.

Very truly yours,

TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY LIMITED

By

MARK LIU
Chairman

February 15, 2022

Deloitte.

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INDEPENDENT AUDITORS' REPORT

The Board of Directors and Shareholders
Taiwan Semiconductor Manufacturing Company Limited

Opinion

We have audited the accompanying consolidated financial statements of Taiwan Semiconductor Manufacturing Company Limited and its subsidiaries (the "Company"), which comprise the consolidated balance sheets as of December 31, 2021 and 2020, and the consolidated statements of comprehensive income, changes in equity and cash flows for the years then ended, and the notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying consolidated financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2021 and 2020, and its consolidated financial performance and its consolidated cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Auditing and Attestation of Financial Statements by Certified Public Accountants and auditing standards generally accepted in the Republic of China. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Consolidated Financial Statements section of our report. We are independent of the Company in accordance with The Norm of Professional Ethics for Certified Public Accountant of the Republic of China and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the year ended December 31, 2021. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter for the Company's consolidated financial statements for the year ended December 31, 2021 is stated as follows:

Property, plant and equipment (PP&E) – commencement of depreciation related to PP&E classified as equipment under installation and construction in progress (EUI/CIP)

Refer to Notes 4, 5 and 14 to the consolidated financial statements.

The Company's evaluation of when to commence depreciation of EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner. Changes in these assumptions could have a significant impact on when depreciation is recognized.

Given the subjectivity in determining the date to commence depreciation of EUI/CIP, performing audit procedures to evaluate the reasonableness of the Company's judgments and assumptions required a high degree of auditor judgment. Consequently, the validity of commencement of depreciation related to PP&E classified as EUI/CIP is identified as a key audit matter.

Our audit procedures related to the evaluation of when to commence depreciation of EUI/CIP included the following, among others:

1. We read the Company's policy and understood the criteria used to determine when to commence depreciation.

2. We tested the effectiveness of the controls over the evaluation of when to commence depreciation of EUI/CIP.

3. We sampled the year-end balance of EUI/CIP and performed the following for each selection:

    a. Evaluated whether the selection did not meet the criteria specified by the Company for commencement of depreciation.

    b. Observed the assets and evaluated their status.

4. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation during the year.

5. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation subsequent to year end.

Other Matter

We have also audited the parent company only financial statements of Taiwan Semiconductor Manufacturing Company Limited as of and for the years ended December 31, 2021 and 2020 on which we have issued an unmodified opinion.

Responsibilities of Management and Those Charged with Governance for the Consolidated Financial Statements

Management is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRS, IAS, IFRIC, and SIC endorsed and issued into effect by the Financial Supervisory Commission of the Republic of China, and for such internal control as management

determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Company's financial reporting process.

Auditors' Responsibilities for the Audit of the Consolidated Financial Statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the auditing standards generally accepted in the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the auditing standards generally accepted in the Republic of China, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.

5. Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements for the year ended December 31, 2021 and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors' report are Mei Yen Chiang and Shang Chih Lin.

Deloitte & Touche
Taipei, Taiwan
Republic of China

February 15, 2022

Notice to Readers

The accompanying consolidated financial statements are intended only to present the consolidated financial position, financial performance and cash flows in accordance with accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such consolidated financial statements are those generally applied in the Republic of China.

For the convenience of readers, the independent auditors' report and the accompanying consolidated financial statements have been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors' report and consolidated financial statements shall prevail.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED BALANCE SHEETS
(In Thousands of New Taiwan Dollars)

	December 31, 2021		December 31, 2020	
	Amount	%	Amount	%
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	$ 1,064,990,192	29	$ 660,170,647	24
Financial assets at fair value through profit or loss (Note 7)	159,048	-	2,259,412	-
Financial assets at fair value through other comprehensive income (Note 8)	119,519,251	3	122,448,453	5
Financial assets at amortized cost (Note 9)	3,773,571	-	6,597,992	-
Hedging financial assets (Note 10)	13,468	-	47	-
Notes and accounts receivable, net (Note 11)	197,586,109	5	145,480,272	5
Receivables from related parties (Note 33)	715,324	-	558,131	-
Other receivables from related parties (Note 33)	61,531	-	50,645	-
Inventories (Notes 5 and 12)	193,102,321	5	137,353,407	5
Other financial assets (Note 34)	16,630,611	1	10,676,111	1
Other current assets	10,521,481	-	6,590,191	-
Total current assets	1,607,072,907	43	1,092,185,308	40
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income (Note 8)	5,887,892	-	4,514,940	-
Financial assets at amortized cost (Note 9)	1,533,391	-	4,372,207	-
Investments accounted for using equity method (Note 13)	21,963,418	1	18,841,061	1
Property, plant and equipment (Notes 5 and 14)	1,975,118,704	53	1,555,589,120	56
Right-of-use assets (Notes 5 and 15)	32,734,537	1	27,728,382	1
Intangible assets (Notes 5 and 16)	26,821,697	1	25,768,179	1
Deferred income tax assets (Notes 5 and 26)	49,153,886	1	25,958,184	1
Refundable deposits	2,624,854	-	1,343,001	-
Other noncurrent assets	2,592,169	-	4,411,023	-
Total noncurrent assets	2,118,430,548	57	1,668,526,097	60
TOTAL	$ 3,725,503,455	100	$ 2,760,711,405	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans (Notes 17 and 30)	$ 114,921,333	3	$ 88,559,026	3
Financial liabilities at fair value through profit or loss (Note 7)	681,914	-	94,128	-
Hedging financial liabilities (Note 10)	9,642	-	1,169	-
Accounts payable	47,285,603	1	38,987,284	1
Payables to related parties (Note 33)	1,437,186	-	2,107,718	-
Salary and bonus payable	23,802,100	1	20,071,241	1
Accrued profit sharing bonus to employees and compensation to directors and supervisors (Note 29)	36,524,741	1	35,681,046	1
Payables to contractors and equipment suppliers	145,742,148	4	157,804,961	6
Cash dividends payable (Note 21)	142,617,093	4	129,651,902	5
Income tax payable (Notes 5 and 26)	59,647,152	2	53,909,313	2
Long-term liabilities - current portion (Notes 18, 19 and 30)	4,566,667	-	2,600,000	-
Accrued expenses and other current liabilities (Notes 5, 15, 22, 30 and 33)	162,267,779	4	87,683,260	3
Total current liabilities	739,503,358	20	617,151,048	22
NONCURRENT LIABILITIES				
Bonds payable (Notes 18 and 30)	610,070,652	16	254,105,084	9
Long-term bank loans (Notes 19 and 30)	3,309,131	-	1,967,611	-
Deferred income tax liabilities (Notes 5 and 26)	1,873,877	-	1,729,941	-
Lease liabilities (Notes 5, 15 and 30)	20,764,214	1	20,560,649	1
Net defined benefit liability (Note 20)	11,036,879	-	11,914,074	1
Guarantee deposits	686,762	-	265,599	-
Others (Note 22)	167,525,377	5	2,395,400	-
Total noncurrent liabilities	815,266,892	22	292,938,358	11
Total liabilities	1,554,770,250	42	910,089,406	33
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 21)	259,303,805	7	259,303,805	9
Capital surplus (Note 21)	64,761,602	2	56,347,243	2
Retained earnings (Note 21)				
Appropriated as legal capital reserve	311,146,899	8	311,146,899	11
Appropriated as special capital reserve	59,304,212	2	42,259,146	2
Unappropriated earnings	1,536,378,550	41	1,235,280,036	45
	1,906,829,661	51	1,588,686,081	58
Others (Note 21)	(62,608,515)	(2)	(54,679,873)	(2)
Equity attributable to shareholders of the parent	2,168,286,553	58	1,849,657,256	67
NON - CONTROLLING INTERESTS	2,446,652	-	964,743	-
Total equity	2,170,733,205	58	1,850,621,999	67
TOTAL	$ 3,725,503,455	100	$ 2,760,711,405	100

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2021		2020	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 22, 33 and 38)	$1,587,415,037	100	$1,339,254,811	100
COST OF REVENUE (Notes 5, 12, 29 and 33)	767,877,771	48	628,124,691	47
GROSS PROFIT	819,537,266	52	711,130,120	53
OPERATING EXPENSES (Notes 5, 29 and 33)				
Research and development	124,734,755	8	109,486,089	8
General and administrative	36,929,588	2	28,457,593	2
Marketing	7,558,591	1	7,112,867	1
Total operating expenses	169,222,934	11	145,056,549	11
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 14, 15 and 29)	(333,435)	-	710,127	-
INCOME FROM OPERATIONS (Note 38)	649,980,897	41	566,783,698	42
NON-OPERATING INCOME AND EXPENSES				
Share of profits of associates	5,603,084	-	3,592,818	-
Interest income (Note 23)	5,708,765	-	9,018,400	1
Other income	973,141	-	660,607	-
Foreign exchange gain (loss), net (Note 36)	13,662,655	1	(3,303,298)	-
Finance costs (Note 24)	(5,414,218)	-	(2,081,455)	-
Other gains and losses, net (Note 25)	(7,388,010)	-	10,106,410	1
Total non-operating income and expenses	13,145,417	1	17,993,482	2
INCOME BEFORE INCOME TAX	663,126,314	42	584,777,180	44
INCOME TAX EXPENSE (Notes 5 and 26)	66,053,180	4	66,619,098	5
NET INCOME	597,073,134	38	518,158,082	39
OTHER COMPREHENSIVE INCOME (LOSS) (Notes 5, 20, 21 and 26)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	242,079	-	(3,516,749)	(1)
Unrealized gain on investments in equity instruments at fair value through other comprehensive income	1,900,797	-	423,697	-
Gain (loss) on hedging instruments	(41,416)	-	24,085	-

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2021		2020	
	Amount	%	Amount	%
Share of other comprehensive loss of associates	$ (30,194)	-	$ (11,604)	-
Income tax benefit (expense) related to items that will not be reclassified subsequently	(85,269)	-	422,663	-
	1,985,997	-	(2,657,908)	(1)
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	(6,181,830)	(1)	(29,847,196)	(2)
Unrealized gain/(loss) on investments in debt instruments at fair value through other comprehensive income	(3,431,791)	-	2,466,711	-
Gain on hedging instruments	131,535	-	-	-
Share of other comprehensive loss of associates	(119,997)	-	(283,409)	-
Income tax expense related to items that may be reclassified subsequently	(3,370)	-	-	-
	(9,605,453)	(1)	(27,663,894)	(2)
Other comprehensive loss for the year, net of income tax	(7,619,456)	(1)	(30,321,802)	(3)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	$ 589,453,678	37	$ 487,836,280	36
NET INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	$ 596,540,013	38	$ 517,885,387	39
Non-controlling interests	533,121	-	272,695	-
	$ 597,073,134	38	$ 518,158,082	39
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	$ 588,918,059	37	$ 487,563,478	36
Non-controlling interests	535,619	-	272,802	-
	$ 589,453,678	37	$ 487,836,280	36
EARNINGS PER SHARE (NT$, Note 27)				
Basic earnings per share	$ 23.01		$ 19.97	
Diluted earnings per share	$ 23.01		$ 19.97	

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
(In Thousands of New Taiwan Dollars)

	Equity Attributable to Shareholders of the Parent															
								Others								
	Capital Stock - Common Stock			Retained Earnings												
	Shares (In Thousands)	Amount	Capital Surplus	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total	Total	Non-controlling Interests	Total Equity
BALANCE, JANUARY 1, 2020	25,930,380	$ 259,303,805	$ 56,339,709	$ 311,146,899	$ 10,675,106	$1,011,512,974	$1,333,334,979	$ (26,871,400)	$ (692,959)	$ (3,820)	$ (190)	$ (27,568,369)	$1,621,410,124	$ 685,302	$1,622,095,426
Appropriations of earnings															
Special capital reserve	-	-	-	-	31,584,040	(31,584,040)	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(259,303,805)	(259,303,805)	-	-	-	-	-	(259,303,805)	-	(259,303,805)
Total	-	-	-	-	31,584,040	(290,887,845)	(259,303,805)	-	-	-	-	-	(259,303,805)	-	(259,303,805)
Net income in 2020	-	-	-	-	-	517,885,387	517,885,387	-	-	-	-	-	517,885,387	272,695	518,158,082
Other comprehensive income (loss) in 2020, net of income tax	-	-	-	-	-	(3,121,793)	(3,121,793)	(30,130,227)	2,906,026	24,085	-	(27,200,116)	(30,321,909)	107	(30,321,802)
Total comprehensive income (loss) in 2020	-	-	-	-	-	514,763,594	514,763,594	(30,130,227)	2,906,026	24,085	-	(27,200,116)	487,563,478	272,802	487,836,280
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	(108,687)	(108,687)	-	108,687	-	-	108,687	-	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(20,265)	-	(20,265)	(20,265)	-	(20,265)
Adjustments to share of changes in equities of associates	-	-	292	-	-	-	-	-	-	-	190	190	482	-	482
Donation from shareholders	-	-	7,242	-	-	-	-	-	-	-	-	-	7,242	27	7,269
Increase in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	6,612	6,612
BALANCE, DECEMBER 31, 2020	25,930,380	259,303,805	56,347,243	311,146,899	42,259,146	1,235,280,036	1,588,686,081	(57,001,627)	2,321,754	-	-	(54,679,873)	1,849,657,256	964,743	1,850,621,999
Appropriations of earnings															
Special capital reserve	-	-	-	-	17,045,066	(17,045,066)	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(278,751,590)	(278,751,590)	-	-	-	-	-	(278,751,590)	-	(278,751,590)
Total	-	-	-	-	17,045,066	(295,796,656)	(278,751,590)	-	-	-	-	-	(278,751,590)	-	(278,751,590)
Net income in 2021	-	-	-	-	-	596,540,013	596,540,013	-	-	-	-	-	596,540,013	533,121	597,073,134
Other comprehensive income (loss) in 2021, net of income tax	-	-	-	-	-	167,503	167,503	(6,301,734)	(1,559,790)	72,067	-	(7,789,457)	(7,621,954)	2,498	(7,619,456)
Total comprehensive income (loss) in 2021	-	-	-	-	-	596,707,516	596,707,516	(6,301,734)	(1,559,790)	72,067	-	(7,789,457)	588,918,059	535,619	589,453,678
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	187,654	187,654	-	(187,654)	-	-	(187,654)	-	-	-
Basis adjustment for gain on hedging instruments	-	-	-	-	-	-	-	-	-	48,469	-	48,469	48,469	-	48,469
Adjustments to share of changes in equities of associates	-	-	4,796	-	-	-	-	-	-	-	-	-	4,796	-	4,796
From difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal	-	-	8,406,282	-	-	-	-	-	-	-	-	-	8,406,282	1,045,516	9,451,798
From share of changes in equities of subsidiaries	-	-	(7,891)	-	-	-	-	-	-	-	-	-	(7,891)	7,891	-
Donation from shareholders	-	-	11,172	-	-	-	-	-	-	-	-	-	11,172	110	11,282
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	(107,382)	(107,382)
Effect of acquisition of subsidiary	-	-	-	-	-	-	-	-	-	-	-	-	-	155	155
BALANCE, DECEMBER 31, 2021	25,930,380	$ 259,303,805	$ 64,761,602	$ 311,146,899	$ 59,304,212	$1,536,378,550	$1,906,829,661	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)	$2,168,286,553	$ 2,446,652	$2,170,733,205

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

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	$ 663,126,314	$ 584,777,180
Adjustments for:		
Depreciation expense	414,187,700	324,538,443
Amortization expense	8,207,169	7,186,248
Expected credit losses recognized (reversal) on investments in debt instruments	(2,735)	3,672
Finance costs	5,414,218	2,081,455
Share of profits of associates	(5,603,084)	(3,592,818)
Interest income	(5,708,765)	(9,018,400)
Share-based compensation	7,788	6,612
Loss (gain) on disposal or retirement of property, plant and equipment, net	273,627	(188,863)
Loss on disposal or retirement of intangible assets, net	1,228	599
Impairment loss on property, plant and equipment	274,388	10,159
Gain on financial instruments at fair value through profit or loss, net	-	(3,005)
Gain on disposal of investments in debt instruments at fair value through other comprehensive income, net	(93,229)	(1,439,420)
Gain on foreign exchange, net	(16,115,936)	(1,372,610)
Dividend income	(362,310)	(637,575)
Others	(414,219)	13,554
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	2,649,244	(2,965,270)
Notes and accounts receivable, net	(52,105,823)	(8,082,708)
Receivables from related parties	(157,193)	303,939
Other receivables from related parties	(10,886)	7,588
Inventories	(55,748,914)	(54,372,211)
Other financial assets	(8,236,897)	1,389,493
Other current assets	(3,899,043)	(1,358,129)
Accounts payable	8,298,319	404,607
Payables to related parties	(670,532)	672,818
Salary and bonus payable	3,730,859	3,798,888
Accrued profit sharing bonus to employees and compensation to directors and supervisors	843,695	12,032,143
Accrued expenses and other current liabilities	84,322,721	20,617,359
Other noncurrent liabilities	154,085,985	-
Net defined benefit liability	(635,116)	(785,171)
Cash generated from operations	1,195,658,573	874,028,577
Income taxes paid	(83,497,851)	(51,362,365)
Net cash generated by operating activities	1,112,160,722	822,666,212

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2021	2020
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial assets at fair value through other comprehensive income	$ (255,888,679)	$ (262,637,496)
Financial assets at amortized cost	(3,799,737)	(4,302,770)
Property, plant and equipment	(839,195,708)	(507,238,722)
Intangible assets	(9,040,751)	(9,542,387)
Proceeds from disposal or redemption of:		
Financial instruments at fair value through profit or loss - debt instruments	-	30,049
Financial assets at fair value through other comprehensive income	254,604,537	266,931,916
Financial assets at amortized cost	9,368,275	285,210
Property, plant and equipment	390,364	606,732
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	115,627	51,052
Derecognition of hedging financial instruments	276,261	(308,776)
Interest received	5,990,948	9,775,120
Proceeds from government grants - property, plant and equipment	821,312	1,044,327
Proceeds from government grants - others	6,605	25,369
Other dividends received	362,310	735,081
Dividends received from investments accounted for using equity method	2,136,426	2,752,043
Increase in prepayments for leases	(1,200,000)	(4,693,416)
Refundable deposits paid	(1,997,337)	(726,883)
Refundable deposits refunded	683,684	1,431,837
Net cash used in investing activities	(836,365,863)	(505,781,714)
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase (decrease) in short-term loans	35,668,397	(31,571,567)
Proceeds from short-term bills payable	-	7,485,303
Repayments of short-term bills payable	-	(7,500,000)
Proceeds from issuance of bonds	364,592,792	236,725,675
Repayment of bonds	(2,600,000)	(31,800,000)
Proceeds from long-term bank loans	1,510,000	2,000,000
Payments for transaction costs attributable to the issuance of bonds	(737,724)	(390,730)
Repayment of the principal portion of lease liabilities	(1,985,338)	(2,615,708)
Interest paid	(3,833,633)	(1,781,097)
Guarantee deposits received	469,041	145,633
Guarantee deposits refunded	(36,763)	(16,060)
Cash dividends	(265,786,399)	(259,303,805)
Disposal of ownership interests in subsidiaries (without losing control)	9,451,798	-
Donation from shareholders	11,282	7,269
Decrease in non-controlling interests	(115,015)	-
Net cash generated by (used in) financing activities	136,608,438	(88,615,087)

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2021	2020
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	$ (7,583,752)	$ (23,498,100)
NET INCREASE IN CASH AND CASH EQUIVALENTS	404,819,545	204,771,311
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	660,170,647	455,399,336
CASH AND CASH EQUIVALENTS, END OF YEAR	$1,064,990,192	$ 660,170,647

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

1. GENERAL

Taiwan Semiconductor Manufacturing Company Limited (TSMC), a Republic of China (R.O.C.) corporation, was incorporated on February 21, 1987. TSMC is a dedicated foundry in the semiconductor industry which engages mainly in the manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

On September 5, 1994, TSMC's shares were listed on the Taiwan Stock Exchange (TWSE). On October 8, 1997, TSMC listed some of its shares of stock on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs).

The address of its registered office and principal place of business is No. 8, Li-Hsin Rd. 6, Hsinchu Science Park, Taiwan. The principal operating activities of TSMC's subsidiaries are described in Note 4.

2. THE AUTHORIZATION OF FINANCIAL STATEMENTS

The accompanying consolidated financial statements were approved and authorized for issue by the Board of Directors on February 15, 2022.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS

a. Initial application of the amendments to the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) (collectively, "IFRSs") endorsed and issued into effect by the Financial Supervisory Commission (FSC)

The initial application of the amendments to the IFRSs endorsed and issued into effect by the FSC did not have a significant effect on the accounting policies of TSMC and its subsidiaries (collectively as the "Company").

b. Amendments to the IFRSs issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2022

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Annual Improvements to IFRS Standards 2018 - 2020 Cycle	January 1, 2022
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

c. The IFRSs issued by IASB but not yet endorsed and issued into effect by the FSC

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 10 and IAS 28 "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture"	To be determined by IASB
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

As of the date the accompanying consolidated financial statements were authorized for issue, the Company continues in evaluating the impact on its financial position and financial performance from the initial adoption of the aforementioned standards or interpretations and related applicable period. The related impact will be disclosed when the Company completes its evaluation.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

For the convenience of readers, the accompanying consolidated financial statements have been translated into English from the original Chinese version prepared and used in the R.O.C. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language consolidated financial statements shall prevail.

Statement of Compliance

The accompanying consolidated financial statements have been prepared in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers and the IFRSs endorsed by the FSC with the effective dates (collectively, "Taiwan-IFRSs").

Basis of Preparation

The accompanying consolidated financial statements have been prepared on the historical cost basis except for financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

Basis of Consolidation

The basis for the consolidated financial statements

The consolidated financial statements incorporate the financial statements of TSMC and entities controlled by TSMC (its subsidiaries).

Income and expenses of subsidiaries acquired or disposed of are included in the consolidated statement of comprehensive income from the effective date of acquisition and up to the effective date of disposal, as appropriate. Total comprehensive income of subsidiaries is attributed to the shareholders of the parent and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with those used by the Company.

All intra-group transactions, balances, income and expenses are eliminated in full on consolidation.

Changes in the Company's ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Company's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity and attributed to shareholders of the parent.

When the Company loses control of a subsidiary, a gain or loss is recognized in profit or loss and is calculated as the difference between:

a. the aggregate of the fair value of consideration received and the fair value of any retained interest at the date when control is lost; and

b. the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interest.

The Company shall account for all amounts recognized in other comprehensive income in relation to the subsidiary on the same basis as would be required if the Company had directly disposed of the related assets and liabilities.

The fair value of any investment retained in the former subsidiary at the date when control is lost is regarded as the cost on initial recognition of an investment in an associate.

The subsidiaries in the consolidated financial statements

The detail information of the subsidiaries at the end of reporting period was as follows:

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership		Note
				December 31, 2021	December 31, 2020	
TSMC	TSMC North America	Sales and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	100%	100%	-
	TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	100%	100%	a)
	TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	100%	100%	a)
	TSMC Design Technology Japan, Inc. (TSMC JDC)	Engineering support activities	Yokohama, Japan	100%	100%	a)
	TSMC Japan 3DIC R&D Center, Inc. (TSMC 3DIC)	Engineering support activities	Yokohama, Japan	100%	-	a), b)
	TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	100%	100%	a)
	TSMC Partners, Ltd. (TSMC Partners)	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities	Tortola, British Virgin Islands	100%	100%	a)
	TSMC Global, Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	100%	100%	-
	TSMC China Company Limited (TSMC China)	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	100%	100%	-
	TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	100%	100%	-
	VisEra Technologies Company Ltd. (VisEra Tech)	Research, design, development, manufacturing, sales, packaging and test of color filter	Hsin-Chu, Taiwan	73%	87%	c)
	TSMC Arizona Corporation (TSMC Arizona)	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	Phoenix, Arizona, U.S.A.	100%	100%	d)
	Japan Advanced Semiconductor Manufacturing, Inc. (JASM)	Manufacturing, sales, testing and computer aided design of integrated circuits and other semiconductor devices	Kumamoto, Japan	100%	-	a), e)
	VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in technology start-up companies	Cayman Islands	98%	98%	a)
	VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in technology start-up companies	Cayman Islands	98%	98%	a)
	Emerging Fund L.P. (Emerging Fund)	Investing in technology start-up companies	Cayman Islands	99.9%	-	a), f)

(Continued)

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership		Note
				December 31, 2021	December 31, 2020	
TSMC Partners	TSMC Development, Inc. (TSMC Development)	Investing in companies involved in semiconductor manufacturing	Delaware, U.S.A.	100%	100%	-
	TSMC Technology, Inc. (TSMC Technology)	Engineering support activities	Delaware, U.S.A.	100%	100%	a)
	TSMC Design Technology Canada Inc. (TSMC Canada)	Engineering support activities	Ontario, Canada	100%	100%	a)
TSMC Development	WaferTech, LLC (WaferTech)	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	Washington, U.S.A.	100%	100%	-
VTAF III	Growth Fund Limited (Growth Fund)	Investing in technology start-up companies	Cayman Islands	100%	100%	a)

(Concluded)

Note a: This is an immaterial subsidiary for which the consolidated financial statements are not audited by the Company's independent auditors.

Note b: TSMC 3DIC is established in March 2021.

Note c: To facilitate VisEra's IPO in Taiwan, 39,501 thousand common shares of VisEra at a price of NT$240 were sold by TSMC and an increase of NT$8,406,282 thousand in capital surplus was recognized. TSMC's shareholding in VisEra decreased from 87% to 73%. This disposal was accounted for as an equity transaction since the transaction did not change TSMC's control over VisEra.

Note d: Under the terms of the development agreement entered into between TSMC Arizona and the City of Phoenix, the City of Phoenix commits approximately US$205 million toward various public infrastructure projects in the area of the proposed manufacturing facility, conditioned on TSMC Arizona's achieving a minimum project scale with defined spending and job-creation thresholds.

Note e: JASM is established in December 2021 and has increased its capital in January 2022. After the increase in capital, TSMC's shareholding in JASM decreased from 100% to 81%. This transaction was accounted for as an equity transaction since the transaction did not change TSMC's control over JASM.

Note f: Emerging fund is established in January 2021.

Foreign Currencies

The financial statements of each individual consolidated entity were expressed in the currency which reflected its primary economic environment (functional currency). The functional currency of TSMC and presentation currency of the consolidated financial statements are both New Taiwan Dollars (NT$). In preparing the consolidated financial statements, the operating results and financial positions of each consolidated entity are translated into NT$.

In preparing the financial statements of each individual consolidated entity, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Such exchange differences are recognized in profit or loss in the year in which they arise. Non-monetary items measured at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising on the retranslation of non-monetary items are included in profit or loss for the year except for exchange differences arising on the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which case, the exchange differences are also recognized directly in other comprehensive income. Non-monetary items that are measured in terms of historical cost in foreign currencies are not retranslated.

For the purposes of presenting consolidated financial statements, the assets and liabilities of the Company's foreign operations are translated into NT$ using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity (attributed to non-controlling interests as appropriate).

Classification of Current and Noncurrent Assets and Liabilities

Current assets are assets held for trading purposes and assets expected to be converted to cash, sold or consumed within one year from the end of the reporting period. Current liabilities are obligations incurred for trading purposes and obligations expected to be settled within one year from the end of the reporting period. Assets and liabilities that are not classified as current are noncurrent assets and liabilities, respectively.

Cash Equivalents

Cash equivalents, for the purpose of meeting short-term cash commitments, consist of highly liquid time deposits and investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Financial Instruments

Financial assets and liabilities shall be recognized when the Company becomes a party to the contractual provisions of the instruments.

Financial assets and liabilities are initially recognized at fair values. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial Assets

The classification of financial assets depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Regular way purchases or sales of financial assets are recognized and derecognized on a trade date or settlement date basis for which financial assets were classified in the same way, respectively. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

a. Category of financial assets and measurement

   Financial assets are classified into the following categories: financial assets at FVTPL, investments in debt instruments and equity instruments at FVTOCI, and financial assets at amortized cost.

   1) Financial asset at FVTPL

      For certain financial assets which include debt instruments that do not meet the criteria of amortized cost or FVTOCI, it is mandatorily required to measure them at FVTPL. Any gain or loss arising from remeasurement is recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest earned on the financial asset.

   2) Investments in debt instruments at FVTOCI

      Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of collecting contractual cash flows and selling the financial assets, are measured at FVTOCI.

      Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment gains or losses on investments in debt instruments at FVTOCI are recognized in profit or loss. Other changes in the carrying amount of these debt instruments are recognized in other comprehensive income and will be reclassified to profit or loss when these debt instruments are disposed.

   3) Investments in equity instruments at FVTOCI

      On initial recognition, the Company may irrevocably designate investments in equity investments that is not held for trading as at FVTOCI.

Investments in equity instruments at FVTOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity.

Dividends on these investments in equity instruments at FVTOCI are recognized in profit or loss when the Company's right to receive the dividends is established, unless the Company's rights clearly represent a recovery of part of the cost of the investment.

4) Measured at amortized cost

Cash and cash equivalents, debt instrument investments, notes and accounts receivable (including related parties), other receivables and refundable deposits are measured at amortized cost.

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of holding financial assets in order to collect contractual cash flows, are measured at amortized cost.

Subsequent to initial recognition, financial assets measured at amortized cost are measured at amortized cost, which equals to carrying amount determined by the effective interest method less any impairment loss.

b. Impairment of financial assets

At the end of each reporting period, a loss allowance for expected credit loss is recognized for financial assets at amortized cost (including accounts receivable) and for investments in debt instruments that are measured at FVTOCI.

The loss allowance for accounts receivable is measured at an amount equal to lifetime expected credit losses. For financial assets at amortized cost and investments in debt instruments that are measured at FVTOCI, when the credit risk on the financial instrument has not increased significantly since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from possible default events of a financial instrument within 12 months after the reporting date. If, on the other hand, there has been a significant increase in credit risk since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from all possible default events over the expected life of a financial instrument.

The Company recognizes an impairment loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in other comprehensive income and does not reduce the carrying amount of the financial asset.

c. Derecognition of financial assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the financial asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset to another entity.

On derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. On derecognition of an investment in a debt instrument at FVTOCI, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss. However, on derecognition of an investment in an equity instrument at FVTOCI, the cumulative gain or loss that had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

Financial Liabilities and Equity Instruments

Classification as debt or equity

Debt and equity instruments issued by the Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Financial liabilities

Financial liabilities are subsequently measured either at amortized cost using effective interest method or at FVTPL.

Financial liabilities are classified as at fair value through profit or loss when the financial liability is either held for trading or is designated as at fair value through profit or loss.

Financial liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

Financial liabilities other than those held for trading purposes and designated as at FVTPL are subsequently measured at amortized cost at the end of each reporting period.

Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

Derivative Financial Instruments

Derivative financial instruments are initially recognized at fair value at the date the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative financial instrument is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

Hedge Accounting

a. Fair value hedge

   The Company designates certain hedging instruments, such as interest rate futures contracts, to partially hedge against the fair value change caused by interest rates fluctuation in the Company's fixed income investments. Changes in the fair value of hedging instruments that are designated and qualify as fair value hedges are recognized in profit or loss immediately, together with any changes in the fair value of the hedged items that are attributable to the hedged risk.

b. Cash flow hedge

The Company designates certain hedging instruments, such as forward contracts, to partially hedge its foreign exchange rate risks or interest rate risks associated with certain highly probable forecast transactions (capital expenditures or issuance of debts). The effective portion of changes in the fair value of hedging instruments is recognized in other comprehensive income. When forecast transactions actually take place, the accumulated gains or losses that were recognized in other comprehensive income are removed from equity and included in the initial cost of the hedged items, or reclassified to finance costs of hedged items in the same period or periods during which the hedged expected future cash flows affect profit or loss. The gains or losses from hedging instruments relating to the ineffective portion are recognized immediately in profit or loss.

The Company prospectively discontinues hedge accounting only when the hedging relationship ceases to meet the qualifying criteria; for instance, when the hedging instrument expires or is sold, terminated or exercised.

Inventories

Inventories are stated at the lower of cost or net realizable value. Inventories are recorded at standard cost and adjusted to approximate weighted-average cost at the end of the reporting period. Net realizable value represents the estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale.

Investments Accounted for Using Equity Method

Investments accounted for using the equity method are investments in associates.

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

The operating results and assets and liabilities of associates are incorporated in these consolidated financial statements using the equity method of accounting. Under the equity method, an investment in an associate is initially recognized in the consolidated statements of financial position at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the associate as well as the distribution received. The Company also recognizes its share in the changes in the equities of associates.

Any excess of the cost of acquisition over the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

When the Company subscribes to additional shares in an associate at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Company's proportionate interest in the net assets of the associate. The Company records such a difference as an adjustment to investments with the corresponding amount charged or credited to capital surplus. If the Company's ownership interest is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive

income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

When a consolidated entity transacts with an associate, profits and losses resulting from the transactions with the associate are recognized in the Company's consolidated financial statements only to the extent of interests in the associate that are not owned by the Company.

Property, Plant and Equipment

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment. Costs include any incremental costs that are directly attributable to the construction, acquisition of the item of property, plant and equipment or borrowing costs eligible for capitalization.

Property, plant and equipment in the course of construction for production, supply or administrative purposes are carried at cost, less any recognized impairment loss. Such assets are classified to the appropriate categories of property, plant and equipment when completed and ready for intended use. Depreciation of these assets, on the same basis as other identical categories of property, plant and equipment, commences when the assets are available for their intended use.

Depreciation is recognized so as to write off the cost of the assets less their residual values over their useful lives, and it is computed using the straight-line method mainly over the following estimated useful lives: land improvements - 20 years; buildings (assets used by the Company and assets subject to operating leases) - 10 to 20 years; machinery and equipment (assets used by the Company and assets subject to operating leases) - 5 years; and office equipment - 5 years. The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimates accounted for on a prospective basis. Land is not depreciated.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the assets. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognized in profit or loss.

Leases

For a contract that contains a lease component and non-lease component, the Company may elect to account for the lease and non-lease components as a single lease component.

The Company as lessor

Rental income from operating lease is recognized on a straight-line basis over the term of the lease.

The Company as lessee

Except for payments for low-value asset leases and short-term leases (leases of machinery and equipment and others) which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases at the commencement date of the lease.

Right-of-use assets are measured at cost. The cost of right-of-use assets comprises the initial measurement of lease liabilities adjusted for lease payments and initial direct costs made at or before the commencement date, plus an estimate of costs needed to restore the underlying assets. Subsequent measurement is calculated as cost less accumulated depreciation and accumulated impairment loss and adjusted for changes in lease liabilities as a result of lease term modifications or other related factors. Right-of-use assets are presented separately in the consolidated balance sheets.

Right-of-use assets are depreciated using the straight-line method from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms. If the lease transfers ownership of the underlying assets to the Company by the end of the lease terms or if the cost of right-of-use assets reflects that the Company will exercise a purchase option, the Company depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are measured at the present value of the lease payments. Lease payments comprise fixed payments, variable lease payments which depend on an index or a rate and the exercise price of a purchase option if the Company is reasonably certain to exercise that option. The lease payments are discounted using the lessee's incremental borrowing rates.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, the Company remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. Lease liabilities are presented on a separate line in the consolidated balance sheets.

Variable lease payments that do not depend on an index or a rate are recognized as expenses in the periods in which they are incurred.

Intangible Assets

Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

Other intangible assets

Other separately acquired intangible assets with finite useful lives are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized using the straight-line method over the following estimated useful lives: Technology license fees - the estimated life of the technology or the term of the technology transfer contract; software and system design costs - 3 years or contract period; patent and others - the economic life or contract period. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets

Goodwill

Goodwill is not amortized and instead is tested for impairment annually, or more frequently when there is an indication that the cash generating unit may be impaired. For the purpose of impairment testing, goodwill is allocated to each of the Company's cash-generating units or groups of cash-generating units that are expected to benefit from the synergies of the combination. If the recoverable amount of a cash-generating unit is less than its carrying amount, the difference is allocated first to reduce the carrying amount of any goodwill allocated to such cash generating unit and then to the other assets of the cash generating unit pro rata based on the carrying amount of each asset in the cash generating unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

Tangible assets, right-of-use assets and other intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets (property, plant and equipment), right-of-use assets and other intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

When an impairment loss subsequently reverses, the carrying amount of the asset or a cash-generating unit is increased to the revised estimate of its recoverable amount, but the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

Revenue Recognition

The Company recognizes revenue when performance obligations are satisfied. The performance obligations are satisfied when customers obtain control of the promised goods, which is generally when the goods are delivered to the customers' specified locations.

Revenue from sale of goods is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms to recognize refund liabilities, which is classified under accrued expenses and other current liabilities.

In principle, payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month of when the invoice is issued. Due to the short term nature of the receivables from sale of goods with the immaterial discounted effect, the Company measures them at the original invoice amounts without discounting.

Employee Benefits

Short-term employee benefits

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for service rendered by employees.

Retirement benefits

For defined contribution retirement benefit plans, payments to the benefit plan are recognized as an expense when the employees have rendered service entitling them to the contribution. For defined benefit retirement benefit plans, the cost of providing benefit is recognized based on actuarial calculations.

Defined benefit costs (including service cost, net interest and remeasurement) under the defined benefit retirement benefit plans are determined using the Projected Unit Credit Method. Service cost (including current service cost), and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Remeasurement, comprising actuarial gains and losses and the return on plan assets (excluding interest), is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability represents the actual deficit in the Company's defined benefit plan.

Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

Current tax

Income tax on unappropriated earnings (excluding earnings from foreign consolidated subsidiaries) is expensed in the year the shareholders approved the appropriation of earnings which is the year subsequent to the year the earnings are generated.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, net operating loss carryforwards and tax credits for research and development expenses to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered. The deferred tax assets which originally not recognized is also reviewed at the end of each reporting period and recognized to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the year in which the liability is settled or the asset is realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Current and deferred tax for the year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity, respectively.

Government Grants

Government grants are not recognized until there is reasonable assurance that the Company will comply with the conditions attaching to them and that the grants will be received.

Government grants whose primary condition is that the Company should purchase, construct or otherwise acquire noncurrent assets (mainly including land use right and depreciable assets) are recognized as a deduction from the carrying amount of the related assets and recognized as a reduced depreciation or amortization charge in profit or loss over the contract period or useful lives of the related assets. Government grants that are receivables as compensation for expenses already incurred are deducted from incurred expenses in the period in which they become receivables.

5. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY

The Company has considered the economic implications of COVID-19 on critical accounting estimates and will continue evaluating the impact on its financial position and financial performance as a result of the pandemic.

In the application of the aforementioned Company's accounting policies, the Company is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimate is revised if the revision affects only that year, or in the year of the revision and future years if the revision affects both current and future years.

Critical Accounting Judgments

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied.

Commencement of Depreciation Related to Property, Plant and Equipment Classified as Equipment under Installation and Construction in Progress (EUI/CIP)

As described in Note 4, commencement of depreciation related to EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner.

Judgments on Lease Terms

In determining a lease term, the Company considers all facts and circumstances that create an economic incentive to exercise or not to exercise an option, including any expected changes in facts and circumstances from the commencement date until the exercise date of the option. Main factors considered include contractual terms and conditions covered by the optional periods, and the importance of the underlying asset to the lessee's operations, etc. The lease term is reassessed if a significant change in circumstances that are within the control of the Company occurs.

Key Sources of Estimation and Uncertainty

Estimation of Sales Returns and Allowances

Sales returns and other allowance is estimated and recorded based on historical experience and in consideration of different contractual terms. The amount is deducted from revenue in the same period the related revenue is recorded. The Company periodically reviews the reasonableness of the estimates.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses estimate to determine the net realizable value of inventory at the end of each reporting period.

The Company estimates the net realizable value of inventory for normal waste, obsolescence and unmarketable items at the end of reporting period and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is determined mainly based on assumptions of future demand within a specific time horizon.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible assets, right-of-use assets and intangible assets other than goodwill, the Company determines the independent cash flows, useful lives, expected future revenue and expenses related to the specific asset groups with the consideration of the nature of semiconductor industry. Any change in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Realization of Deferred Income Tax Assets

Deferred tax assets are recognized to the extent that it is probable that future taxable profits will be available against which those deferred tax assets can be utilized. Assessment of the realization of the deferred tax assets requires subjective judgment and estimate, including the future revenue growth and profitability, tax holidays, the amount of tax credits can be utilized and feasible tax planning strategies. Any changes in the global economic environment, the industry trends and relevant laws and regulations could result in significant adjustments to the deferred tax assets.

Determination of Lessees' Incremental Borrowing Rates

In determining a lessee's incremental borrowing rate used in discounting lease payments, the Company mainly takes into account the market risk-free rates, the estimated lessee's credit spreads and secured status in a similar economic environment.

6. CASH AND CASH EQUIVALENTS

	December 31, 2021	December 31, 2020
Cash and deposits in banks	$1,058,808,104	$ 653,580,548
Repurchase agreements	5,275,345	1,750,443
Government bonds	906,743	3,716,119
Commercial paper	-	1,123,537
	$1,064,990,192	$ 660,170,647

Deposits in banks consisted of highly liquid time deposits that were readily convertible to known amounts of cash and were subject to an insignificant risk of changes in value.

7. FINANCIAL ASSETS AND LIABILITIES AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31, 2021	December 31, 2020
Financial assets		
Mandatorily measured at FVTPL		
Forward exchange contracts	$ 159,048	$ 2,259,412
Financial liabilities		
Held for trading		
Forward exchange contracts	$ 681,914	$ 94,128

The Company entered into forward exchange contracts to manage exposures due to fluctuations of foreign exchange rates. These forward exchange contracts did not meet the criteria for hedge accounting. Therefore, the Company did not apply hedge accounting treatment for these forward exchange contracts.

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
December 31, 2021		
Sell NT$	January 2022 to March 2022	NT$ 132,734,482
Sell US$	January 2022 to March 2022	US$ 2,009,148
December 31, 2020		
Sell NT$	January 2021 to March 2021	NT$ 144,697,981
Sell US$	January 2021 to March 2021	US$ 1,176,858

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	December 31, 2021	December 31, 2020
Investments in debt instruments at FVTOCI		
Corporate bonds	$ 57,253,161	$ 56,593,623
Agency bonds/Agency mortgage-backed securities	32,070,114	43,977,113
Government bonds	21,345,794	13,459,503
Asset-backed securities	8,660,424	8,368,264
	119,329,493	122,398,503
Investments in equity instruments at FVTOCI		
Non-publicly traded equity investments	5,887,892	4,514,940
Publicly traded stocks	189,758	49,950
	6,077,650	4,564,890
	$ 125,407,143	$ 126,963,393

(Continued)

	December 31, 2021	December 31, 2020
Current	$ 119,519,251	$ 122,448,453
Noncurrent	5,887,892	4,514,940
	$ 125,407,143	$ 126,963,393

(Concluded)

These investments in equity instruments are held for medium to long-term purposes and therefore are accounted for as FVTOCI. For dividends recognized from these investments, please refer to consolidated statements of cash flows. All of the dividends are from investments held at the end of the reporting period.

For the years ended December 31, 2021 and 2020, as non-publicly traded investees were acquired and the Company adjusted its investment portfolio, equity investments designated at FVTOCI were divested for NT$628,711 thousand and NT$8 thousand, respectively. The related other equity-unrealized gain/loss on financial assets at FVTOCI of NT$185,993 thousand and NT$108,996 thousand were transferred to increase and decrease retained earnings, respectively.

As of December 31, 2021 and 2020, the cumulative loss allowance for expected credit loss of NT$33,209 thousand and NT$32,480 thousand was recognized under investments in debt instruments at FVTOCI, respectively. Refer to Note 32 for information relating to the credit risk management and expected credit loss.

9. FINANCIAL ASSETS AT AMORTIZED COST

	December 31, 2021	December 31, 2020
Corporate bonds	$ 5,310,039	$ 10,977,298
Less: Allowance for impairment loss	(3,077)	(7,099)
	$ 5,306,962	$ 10,970,199
Current	$ 3,773,571	$ 6,597,992
Noncurrent	1,533,391	4,372,207
	$ 5,306,962	$ 10,970,199

Refer to Note 32 for information relating to credit risk management and expected credit loss for financial assets at amortized cost.

10. HEDGING FINANCIAL INSTRUMENTS

	December 31, 2021	December 31, 2020
Financial assets- current		
Fair value hedges		
Interest rate futures contracts	$ -	$ 47
Cash flow hedges		
Forward interest rate contracts	13,468	-
	$ 13,468	$ 47

(Continued)

	December 31, 2021	December 31, 2020
Financial liabilities- current		
Fair value hedges		
Interest rate futures contracts	$ 9,642	$ 1,169

(Concluded)

Fair value hedge

The Company entered into interest rate futures contracts, which are used to partially hedge against the fair value changes caused by interest rate fluctuation in the Company's fixed income investments. The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%.

On the basis of economic relationships, the value of the interest rate futures contracts and the value of the hedged financial assets change in opposite directions in response to movements in interest rates.

The main source of hedge ineffectiveness in these hedging relationships is the credit risk of the hedged financial assets, which is not reflected in the fair value of the interest rate futures contracts. No other sources of ineffectiveness emerged from these hedging relationships during the hedging period. Amount of hedge ineffectiveness recognized in profit or loss is classified under other gains and losses, net.

The following tables summarize the information relating to the hedges of interest rate risks.

December 31, 2021

Hedging Instruments	Contract Amount (US$ in Thousands)	Maturity
Interest rate futures contracts - US Treasury futures	US$ 53,900	March 2022

Hedged Items	Asset Carrying Amount	Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	$ 4,079,274	$ 9,642

December 31, 2020

Hedging Instruments	Contract Amount (US$ in Thousands)	Maturity
Interest rate futures contracts - US Treasury futures	US$ 88,700	March 2021

Hedged Items	Asset Carrying Amount	Accumulated Amount of Fair Value Hedge Adjustments
Financial assets at FVTOCI	$ 6,198,683	$ 1,122

The effect for the years ended December 31, 2021 and 2020 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2021	2020
Hedging Instruments		
Interest rate futures contracts - US Treasury futures	$ 148,817	$ (353,611)
Hedged Items		
Financial assets at FVTOCI	(148,817)	353,611
	$ -	$ -

Cash flow hedge

The Company entered into forward contracts to partially hedge foreign exchange rate risks or interest rate risks associated with certain highly probable forecast transactions (capital expenditures or issuance of debts). The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%. The forward contracts have maturities of 12 months or less.

On the basis of economic relationships, the Company expects that the value of forward contracts and the value of hedged transactions will change in opposite directions in response to movements in foreign exchange rates or interest rates.

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty's own credit risk on the fair value of forward contracts. No other sources of ineffectiveness emerged from these hedging relationships. For the years ended December 31, 2021 and 2020, refer to Note 21(d) for gain or loss arising from changes in the fair value of hedging instruments, the amount transferred to initial carrying amount of hedged items and the amount reclassified to finance costs of hedged items.

The following tables summarize the information relating to the hedges of interest rate risks.

December 31, 2021

Hedging Instruments	Contract Amount (In Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward interest rate contracts	US$ 328,000	January 2022	$128,165

The effect for the years ended December 31, 2021 and 2020 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2021	2020
Hedging Instruments		
Forward exchange contracts (capital expenditures)	$ (41,416)	$ 24,085
Forward interest rate contracts (issuance of debts)	$132,508	$ -

(Continued)

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2021	2020
Hedged Items		
Forecast transaction (capital expenditures)	$ 41,416	$ (24,085)
Forecast transaction (issuance of debts)	$(132,508)	$ -

(Concluded)

11. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2021	December 31, 2020
At amortized cost		
Notes and accounts receivable	$ 193,733,220	$ 142,771,597
Less: Loss allowance	(347,020)	(246,626)
	193,386,200	142,524,971
At FVTOCI	4,199,909	2,955,301
	$ 197,586,109	$ 145,480,272

The Company signed a contract with the bank to sell certain accounts receivable without recourse and transaction cost required. These accounts receivable are classified as at FVTOCI because they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets.

In principle, the payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month when the invoice is issued. Aside from recognizing impairment loss for credit-impaired accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels with consideration of factors of historical loss ratios and customers' financial conditions, competitiveness and business outlook. For accounts receivable past due over 90 days without collaterals or guarantees, the Company recognizes loss allowance at full amount.

Aging analysis of notes and accounts receivable

	December 31, 2021	December 31, 2020
Not past due	$ 191,740,045	$ 140,933,622
Past due		
Past due within 30 days	6,186,814	4,784,425
Past due 31-60 days	6,182	8,708
Past due 61-120 days	88	48
Past due over 121 days	-	95
Less: Loss allowance	(347,020)	(246,626)
	$ 197,586,109	$ 145,480,272

All of the Company's accounts receivable classified as at FVTOCI were not past due.

Movements of the loss allowance for accounts receivable

	Years Ended December 31	
	2021	2020
Balance, beginning of year	$ 246,626	$ 325,325
Provision (Reversal)	100,408	(78,474)
Effect of exchange rate changes	(14)	(225)
Balance, end of year	$ 347,020	$ 246,626

For the years ended December 31, 2021 and 2020, the changes in loss allowance were mainly due to the variations in the balance of accounts receivable of different risk levels.

12. INVENTORIES

	December 31, 2021	December 31, 2020
Finished goods	$ 32,562,750	$ 21,705,625
Work in process	137,700,402	91,672,870
Raw materials	11,111,122	14,715,963
Supplies and spare parts	11,728,047	9,258,949
	$ 193,102,321	$ 137,353,407

Write-down of inventories to net realizable value and reversal of write-down of inventories resulting from the increase in net realizable value were included in the cost of revenue during reporting period. The amounts are illustrated below:

	Years Ended December 31	
	2021	2020
Inventory losses	$ 533,034	$ 3,664,513

13. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	$ 10,613,127	$ 9,029,890	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and sales of integrated circuits and other semiconductor devices	Singapore	6,795,699	5,900,245	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	3,046,961	2,554,123	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	1,484,683	1,328,620	35%	35%
Mutual-Pak Technology Co., Ltd. (Mutual-Pak)	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	New Taipei, Taiwan	22,948	28,183	28%	28%
			$ 21,963,418	$ 18,841,061		

As of December 31, 2021 and 2020, no investments in associates are individually material to the Company. Please refer to the consolidated statements of comprehensive income for recognition of share of both profit (loss) and other comprehensive income (loss) of associates that are not individually material.

The market prices of the associates' ownership held by the Company in publicly traded stocks calculated by the closing price at the end of the reporting period are summarized as follows. The closing price represents the quoted price in active markets, the level 1 fair value measurement.

Name of Associate	December 31, 2021	December 31, 2020
VIS	$ 73,347,312	$ 53,849,925
GUC	$ 27,359,085	$ 15,827,184
Xintec	$ 15,913,315	$ 20,420,233

14. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2021	December 31, 2020
Assets used by the Company	$1,975,113,974	$1,554,585,938
Assets subject to operating leases	4,730	1,003,182
	$1,975,118,704	$1,555,589,120

a. Assets used by the Company

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
Balance at January 1, 2021	$ 3,942,625	$ 522,447,474	$ 3,607,005,732	$ 68,862,648	$ 223,965,360	$ 4,426,223,839
Additions	2,587,183	53,971,271	401,659,011	7,642,962	369,545,869	835,406,296
Disposals or retirements	-	(41,143)	(26,192,191)	(333,385)	-	(26,566,719)
Transfers from assets subject to operating leases	-	35,478	1,443,590	-	-	1,479,068
Transfers to assets subject to operating leases	-	-	(244,579)	-	-	(244,579)
Effect of exchange rate changes	(41,578)	184,697	1,077,673	(18,055)	(355,496)	847,241
Balance at December 31, 2021	$ 6,488,230	$ 576,597,777	$ 3,984,749,236	$ 76,154,170	$ 593,155,733	$ 5,237,145,146
Accumulated depreciation and impairment						
Balance at January 1, 2021	$ 506,129	$ 271,799,471	$ 2,555,529,969	$ 43,802,332	$ -	$ 2,871,637,901
Additions	1,329	34,331,645	368,777,680	8,373,282	-	411,483,936
Disposals or retirements	-	(36,527)	(22,230,098)	(332,557)	-	(22,599,182)
Transfers from assets subject to operating leases	-	15,066	436,816	-	-	451,882
Transfers to assets subject to operating leases	-	-	(68,279)	-	-	(68,279)
Impairment	-	-	274,388	-	-	274,388
Effect of exchange rate changes	(7,632)	55,587	818,965	(16,394)	-	850,526
Balance at December 31, 2021	$ 499,826	$ 306,165,242	$ 2,903,539,441	$ 51,826,663	$ -	$ 3,262,031,172
Carrying amounts at December 31, 2021	$ 5,988,404	$ 270,432,535	$ 1,081,209,795	$ 24,327,507	$ 593,155,733	$ 1,975,113,974

(Continued)

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
Balance at January 1, 2020	$ 3,991,798	$ 438,075,063	$ 2,886,622,968	$ 54,611,364	$ 528,295,086	$ 3,911,596,279
Additions (deductions)	-	84,882,543	729,943,300	15,112,949	(304,218,044)	525,720,748
Disposals or retirements	-	(41,568)	(6,397,279)	(734,129)	-	(7,172,976)
Transfers from assets subject to operating leases	-	23,142	-	-	-	23,142
Transfers to assets subject to operating leases	-	-	(1,199,011)	-	-	(1,199,011)
Effect of exchange rate changes	(49,173)	(491,706)	(1,964,246)	(127,536)	(111,682)	(2,744,343)
Balance at December 31, 2020	$ 3,942,625	$ 522,447,474	$ 3,607,005,732	$ 68,862,648	$ 223,965,360	$ 4,426,223,839
Accumulated depreciation and impairment						
Balance at January 1, 2020	$ 538,690	$ 243,059,390	$ 2,278,265,943	$ 37,418,395	$ -	$ 2,559,282,418
Additions	1,479	29,209,096	285,393,637	7,216,921	-	321,821,133
Disposals or retirements	-	(27,990)	(6,012,942)	(732,403)	-	(6,773,335)
Transfers from assets subject to operating leases	-	8,215	-	-	-	8,215
Transfers to assets subject to operating leases	-	-	(202,593)	-	-	(202,593)
Impairment	-	-	10,159	-	-	10,159
Effect of exchange rate changes	(34,040)	(449,240)	(1,924,235)	(100,581)	-	(2,508,096)
Balance at December 31, 2020	$ 506,129	$ 271,799,471	$ 2,555,529,969	$ 43,802,332	$ -	$ 2,871,637,901
Carrying amounts at December 31, 2020	$ 3,436,496	$ 250,648,003	$ 1,051,475,763	$ 25,060,316	$ 223,965,360	$ 1,554,585,938

(Concluded)

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

In the first quarter of 2021, the Company recognized an impairment loss of NT$274,388 thousand for certain machinery and equipment that was assessed to have no future use, and the recoverable amount of certain machinery and equipment was nil. Such impairment loss was recognized in other operating income and expenses.

b. Assets subject to operating leases

	Buildings	Machinery and Equipment	Total
Cost			
Balance at January 1, 2021	$ 227,529	$ 1,199,011	$ 1,426,540
Transfers to assets used by the Company	(35,478)	(1,443,590)	(1,479,068)
Transfers from assets used by the Company	-	244,579	244,579
Balance at December 31, 2021	$ 192,051	$ -	$ 192,051
Accumulated depreciation			
Balance at January 1, 2021	$ 201,366	$ 221,992	$ 423,358
Additions	1,021	146,545	147,566
Transfers to assets used by the Company	(15,066)	(436,816)	(451,882)
Transfers from assets used by the Company	-	68,279	68,279
Balance at December 31, 2021	$ 187,321	$ -	$ 187,321
Carrying amounts at December 31, 2021	$ 4,730	$ -	$ 4,730

(Continued)

	Buildings	Machinery and Equipment	Total
Cost			
Balance at January 1, 2020	$ 562,610	$ -	$ 562,610
Disposals or retirements	(311,939)	-	(311,939)
Transfers to assets used by the Company	(23,142)	-	(23,142)
Transfers from assets used by the Company	-	1,199,011	1,199,011
Balance at December 31, 2020	$ 227,529	$ 1,199,011	$ 1,426,540
Accumulated depreciation			
Balance at January 1, 2020	$ 499,066	$ -	$ 499,066
Additions	16,281	19,399	35,680
Disposals or retirements	(305,766)	-	(305,766)
Transfers to assets used by the Company	(8,215)	-	(8,215)
Transfers from assets used by the Company	-	202,593	202,593
Balance at December 31, 2020	$ 201,366	$ 221,992	$ 423,358
Carrying amounts at December 31, 2020	$ 26,163	$ 977,019	$ 1,003,182

(Concluded)

Operating leases relate to leases of buildings and leases of machinery and equipment with lease terms ranging between approximately 1 to 5 years. The lessees do not have purchase options to acquire the assets at the expiration of the lease periods.

The maturity analysis of operating lease payments receivable from the buildings and machinery and equipment is as follows:

	December 31, 2021	December 31, 2020
Year 1	$ 17,978	$ 149,120
Year 2	-	16,992
	$ 17,978	$ 166,112

15. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31, 2021	December 31, 2020
Carrying amounts		
Land	$ 29,778,636	$ 25,141,908
Buildings	2,918,133	2,544,742
Machinery and equipment	3,474	-
Office equipment	34,294	41,732
	$ 32,734,537	$ 27,728,382

	Years Ended December 31	
	2021	2020
Additions to right-of-use assets	$ 7,769,782	$ 13,481,172
Depreciation of right-of-use assets		
Land	$ 1,825,712	$ 1,312,888
Buildings	707,856	569,531
Machinery and equipment	539	775,809
Office equipment	22,091	23,402
	$ 2,556,198	$ 2,681,630
Income from subleasing right-of-use assets (classified under other operating income and expenses, net)	$ 82,031	$ 79,624

b. Lease liabilities

	December 31, 2021	December 31, 2020
Carrying amounts		
Current portion (classified under accrued expenses and other current liabilities)	$ 2,176,451	$ 1,828,025
Noncurrent portion	20,764,214	20,560,649
	$ 22,940,665	$ 22,388,674

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2021	December 31, 2020
Land	0.39%-2.14%	0.48%-2.14%
Buildings	0.39%-3.88%	0.54%-3.88%
Machinery and equipment	0.71%	-
Office equipment	0.28%-3.88%	0.28%-3.88%

c. Material terms of right-of-use assets

The Company leases land and buildings mainly for the use of plants and offices with lease terms of 1 to 36 years. The lease contracts for land located in the R.O.C. specify that lease payments will be adjusted every 2 years on the basis of changes in announced land value prices. The Company does not have purchase options to acquire the leasehold land and buildings at the end of the lease terms.

d. Subleases

The Company subleases the right to use its buildings and machinery and equipment under operating leases with lease terms of 1 to 6 years.

The maturity analysis of lease payments receivable under operating subleases is as follows:

	December 31, 2021	December 31, 2020
Year 1	$ 60,771	$ 144,099

e. Other lease information

	Years Ended December 31	
	2021	2020
Expenses relating to short-term leases	$ 5,250,279	$ 3,153,451
Expenses relating to variable lease payments not included in the measurement of lease liabilities	$ 168,736	$ 256,996

	Years Ended December 31	
	2021	2020
Total cash outflow for leases	$ 7,510,762	$ 6,354,610

16. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
Cost					
Balance at January 1, 2021	$ 5,436,602	$ 22,161,712	$ 36,238,967	$ 11,277,701	$ 75,114,982
Additions	-	1,372,806	7,726,168	219,504	9,318,478
Disposals or retirements	-	-	(318,736)	-	(318,736)
Effect of exchange rate changes	(57,438)	(559)	4,558	104	(53,335)
Balance at December 31, 2021	$ 5,379,164	$ 23,533,959	$ 43,650,957	$ 11,497,309	$ 84,061,389
Accumulated amortization and impairment					
Balance at January 1, 2021	$ -	$ 12,226,066	$ 30,111,759	$ 7,008,978	$ 49,346,803
Additions	-	2,686,786	4,323,860	1,196,523	8,207,169
Disposals or retirements	-	-	(317,508)	-	(317,508)
Effect of exchange rate changes	-	(559)	3,467	320	3,228
Balance at December 31, 2021	$ -	$ 14,912,293	$ 34,121,578	$ 8,205,821	$ 57,239,692
Carrying amounts at December 31, 2021	$ 5,379,164	$ 8,621,666	$ 9,529,379	$ 3,291,488	$ 26,821,697
Cost					
Balance at January 1, 2020	$ 5,693,376	$ 15,854,951	$ 33,024,010	$ 8,302,996	$ 62,875,333
Additions	-	6,308,926	3,275,757	2,974,784	12,559,467
Disposals or retirements	-	-	(60,467)	-	(60,467)
Effect of exchange rate changes	(256,774)	(2,165)	(333)	(79)	(259,351)
Balance at December 31, 2020	$ 5,436,602	$ 22,161,712	$ 36,238,967	$ 11,277,701	$ 75,114,982
Accumulated amortization and impairment					
Balance at January 1, 2020	$ -	$ 9,823,770	$ 26,502,067	$ 5,896,468	$ 42,222,305
Additions	-	2,404,461	3,669,257	1,112,530	7,186,248
Disposals or retirements	-	-	(59,868)	-	(59,868)
Effect of exchange rate changes	-	(2,165)	303	(20)	(1,882)
Balance at December 31, 2020	$ -	$ 12,226,066	$ 30,111,759	$ 7,008,978	$ 49,346,803
Carrying amounts at December 31, 2020	$ 5,436,602	$ 9,935,646	$ 6,127,208	$ 4,268,723	$ 25,768,179

The Company's goodwill has been tested for impairment at the end of the annual reporting period and the recoverable amount is determined based on the value in use. The value in use was calculated based on the cash flow forecast from the financial budgets covering the future five-year period, and the Company used annual discount rates of 8.0% in both years in its test of impairment as of December 31, 2021 and 2020, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2021 and 2020, the Company did not recognize any impairment loss on goodwill.

17. SHORT-TERM LOANS

	December 31, 2021	December 31, 2020
Unsecured loans		
Amount	$ 114,921,333	$ 88,559,026
Loan content		
US$ (in thousands)	$ -	$ 200,000
EUR (in thousands)	3,652,935	2,398,000
Annual interest rate	(0.73)%-0%	(0.54)%-0.33%
Maturity date	Due by June 2022	Due by February 2021

18. BONDS PAYABLE

	December 31, 2021	December 31, 2020
Domestic unsecured bonds	$ 312,448,000	$ 173,197,000
Overseas unsecured bonds	304,414,000	84,291,000
Less: Discounts on bonds payable	(2,391,348)	(782,916)
Less: Current portion	(4,400,000)	(2,600,000)
	$ 610,070,652	$ 254,105,084

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
NT$ unsecured bonds					
101-3	-	October 2012 to October 2022	$ 4,400,000	1.53%	Bullet repayment; interest payable annually
101-4	B	January 2013 to January 2020	10,000,000	1.35%	The same as above
	C	January 2013 to January 2023	3,000,000	1.49%	The same as above
102-1	B	February 2013 to February 2020	11,600,000	1.38%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
102-1	C	February 2013 to February 2023	$ 3,600,000	1.50%	Bullet repayment; interest payable annually
102-2	A	July 2013 to July 2020	10,200,000	1.50%	The same as above
	B	July 2013 to July 2023	3,500,000	1.70%	The same as above
102-4	D	September 2013 to March 2021	2,600,000	1.85%	Bullet repayment; interest payable annually (interest for the six months prior to maturity will accrue on the basis of actual days and be repayable at maturity)
	E	September 2013 to March 2023	5,400,000	2.05%	The same as above
	F	September 2013 to September 2023	2,600,000	2.10%	Bullet repayment; interest payable annually
109-1	A	March 2020 to March 2025	3,000,000	0.58%	The same as above
	B	March 2020 to March 2027	10,500,000	0.62%	The same as above
	C	March 2020 to March 2030	10,500,000	0.64%	The same as above
109-2	A	April 2020 to April 2025	5,900,000	0.52%	The same as above
	B	April 2020 to April 2027	10,400,000	0.58%	The same as above
	C	April 2020 to April 2030	5,300,000	0.60%	The same as above
109-3	A	May 2020 to May 2025	4,500,000	0.55%	The same as above
	B	May 2020 to May 2027	7,500,000	0.60%	The same as above
	C	May 2020 to May 2030	2,400,000	0.64%	The same as above
109-4	A	July 2020 to July 2025	5,700,000	0.58%	Two equal installments in last two years; interest payable annually
	B	July 2020 to July 2027	6,300,000	0.65%	The same as above
	C	July 2020 to July 2030	1,900,000	0.67%	The same as above
109-5	A	September 2020 to September 2025	4,800,000	0.50%	The same as above
	B	September 2020 to September 2027	8,000,000	0.58%	The same as above
	C	September 2020 to September 2030	2,800,000	0.60%	The same as above
109-6 (green bond)	A	December 2020 to December 2025	1,600,000	0.40%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
109-6 (green bond)	B	December 2020 to December 2027	$ 5,600,000	0.44%	Two equal installments in last two years; interest payable annually
	C	December 2020 to December 2030	4,800,000	0.48%	The same as above
109-7	A	December 2020 to December 2025	1,900,000	0.36%	The same as above
	B	December 2020 to December 2027	10,200,000	0.41%	The same as above
	C	December 2020 to December 2030	6,400,000	0.45%	The same as above
110-1	A	March 2021 to March 2026	4,800,000	0.50%	Bullet repayment; interest payable annually
	B	March 2021 to March 2028	11,400,000	0.55%	The same as above
	C	March 2021 to March 2031	4,900,000	0.60%	The same as above
110-2	A	May 2021 to May 2026	5,200,000	0.50%	The same as above
	B	May 2021 to May 2028	8,400,000	0.58%	The same as above
	C	May 2021 to May 2031	5,600,000	0.65%	The same as above
110-3	A	June 2021 to June 2026	6,900,000	0.52%	The same as above
	B	June 2021 to June 2028	7,900,000	0.58%	The same as above
	C	June 2021 to June 2031	4,900,000	0.65%	The same as above
110-4	A	August 2021 to August 2025	4,000,000	0.485%	The same as above
	B	August 2021 to August 2026	8,000,000	0.50%	The same as above
	C	August 2021 to August 2028	5,400,000	0.55%	The same as above
	D	August 2021 to August 2031	4,200,000	0.62%	The same as above
110-6	A	October 2021 to April 2026	3,200,000	0.535%	The same as above
	B	October 2021 to October 2026	6,900,000	0.54%	The same as above
	C	October 2021 to October 2028	4,600,000	0.60%	The same as above
	D	October 2021 to October 2031	1,600,000	0.62%	The same as above
110-7	A	December 2021 to December 2026	7,700,000	0.65%	The same as above
	B	December 2021 to June 2027	3,500,000	0.675%	The same as above
	C	December 2021 to December 2028	5,500,000	0.72%	The same as above

(Concluded)

Issuance	Tranche	Issuance Period	Total Amount (US$ in Thousands)	Coupon Rate	Repayment and Interest Payment
US$ unsecured bonds					
109-1	-	September 2020 to September 2060	US$1,000,000	2.70%	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter); interest payable annually
110-5	-	September 2021 to September 2051	1,000,000	3.10%	The same as above

The major terms of overseas unsecured bonds are as follows:

Issuance Period	Total Amount (US$ in Thousands)	Coupon Rate	Repayment and Interest Payment
September 2020 to September 2025	US$1,000,000	0.75%	Bullet repayment (callable at any time, in whole or in part, at the relevant redemption price according to relevant agreements); interest payable semi-annually
September 2020 to September 2027	750,000	1.00%	The same as above
September 2020 to September 2030	1,250,000	1.375%	The same as above
April 2021 to April 2026	1,100,000	1.25%	The same as above
April 2021 to April 2028	900,000	1.75%	The same as above
April 2021 to April 2031	1,500,000	2.25%	The same as above
October 2021 to October 2026	1,250,000	1.75%	The same as above
October 2021 to October 2031	1,250,000	2.50%	The same as above
October 2021 to October 2041	1,000,000	3.125%	The same as above
October 2021 to October 2051	1,000,000	3.25%	The same as above

The Company issued domestic unsecured bonds during the period from January 1, 2022 to February 15, 2022, the major terms are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
NT$ unsecured bonds					
111-1 (green bond)	A	January 2022 to January 2027	$ 2,100,000	0.63%	Bullet repayment; interest payable annually
	B	January 2022 to January 2029	3,300,000	0.72%	The same as above

19. LONG-TERM BANK LOANS

	December 31, 2021	December 31, 2020
Unsecured loans	$ 3,510,000	$ 2,000,000
Less: Discounts on government grants	(34,202)	(32,389)
Less: Current portion	(166,667)	-
	$ 3,309,131	$ 1,967,611
Loan content		
Annual interest rate	0.4%-0.9%	0.4%
Maturity date	Due by September 2026	Due by September 2025

The long-term bank loans of the Company are with preferential interest rates subsidized by the government, and the loans are used to fund capital expenditure qualifying for the subsidy.

20. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

The plan under the R.O.C. Labor Pension Act (the "Act") is deemed a defined contribution plan. Pursuant to the Act, TSMC and VisEra Tech have made monthly contributions equal to 6% of each employee's monthly salary to employees' pension accounts. Furthermore, TSMC North America, TSMC Arizona, TSMC China, TSMC Nanjing, TSMC Europe, TSMC Canada and TSMC Technology also make monthly contributions at certain percentages of the basic salary of their employees. Accordingly, the Company recognized expenses of NT$3,711,010 thousand and NT$2,809,484 thousand for the years ended December 31, 2021 and 2020, respectively.

b. Defined benefit plans

TSMC has defined benefit plans under the R.O.C. Labor Standards Law that provide benefits based on an employee's length of service and average monthly salary for the six-month period prior to retirement. The Company contributes an amount equal to 2% of salaries paid each month to their respective pension funds (the Funds), which are administered by the Labor Pension Fund Supervisory Committee (the Committee) and deposited in the Committee's name in the Bank of Taiwan. Before the end of each year, the Company assesses the balance in the Funds. If the amount of the balance in the Funds is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company is required to fund the difference in one appropriation that should be made before the end of

March of the next year. The Funds are operated and managed by the government's designated authorities; as such, the Company does not have any right to intervene in the investments of the Funds.

Amounts recognized in respect of these defined benefit plans were as follows:

	Years Ended December 31	
	2021	**2020**
Current service cost	$ 145,289	$ 123,311
Net interest expense	47,196	81,604
Components of defined benefit costs recognized in profit or loss	192,485	204,915
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(73,298)	(139,212)
Actuarial loss arising from experience adjustments	94,278	494,051
Actuarial loss arising from changes in demographic assumptions	277,454	-
Actuarial (gain) loss arising from changes in financial assumptions	(540,513)	3,161,910
Components of defined benefit costs recognized in other comprehensive income	(242,079)	3,516,749
Total	$ (49,594)	$ 3,721,664

The pension costs of the aforementioned defined benefit plans were recognized in profit or loss by the following categories:

	Years Ended December 31	
	2021	**2020**
Cost of revenue	$ 124,548	$ 126,274
Research and development expenses	52,801	57,306
General and administrative expenses	12,430	18,248
Marketing expenses	2,706	3,087
	$ 192,485	$ 204,915

The amounts arising from the defined benefit obligation of the Company were as follows:

	December 31, 2021	**December 31, 2020**
Present value of defined benefit obligation	$ 16,585,442	$ 16,980,277
Fair value of plan assets	(5,548,563)	(5,066,203)
Net defined benefit liability	$ 11,036,879	$ 11,914,074

Movements in the present value of the defined benefit obligation were as follows:

	Years Ended December 31	
	2021	2020
Balance, beginning of year	$ 16,980,277	$ 13,484,090
Current service cost	145,289	123,311
Interest expense	66,664	118,808
Remeasurement:		
Actuarial loss arising from experience adjustments	94,278	494,051
Actuarial loss arising from changes in demographic assumptions	277,454	-
Actuarial (gain) loss arising from changes in financial assumptions	(540,513)	3,161,910
Benefits paid from plan assets	(431,817)	(398,986)
Benefits paid directly by the Company	(6,190)	(2,907)
Balance, end of year	$ 16,585,442	$ 16,980,277

Movements in the fair value of the plan assets were as follows:

	Years Ended December 31	
	2021	2020
Balance, beginning of year	$ 5,066,203	$ 4,301,594
Interest income	19,468	37,204
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	73,298	139,212
Contributions from employer	821,411	987,179
Benefits paid from plan assets	(431,817)	(398,986)
Balance, end of year	$ 5,548,563	$ 5,066,203

The fair value of the plan assets by major categories at the end of reporting period was as follows:

	December 31, 2021	December 31, 2020
Cash	$ 1,000,961	$ 632,769
Equity instruments	2,951,835	2,926,745
Debt instruments	1,595,767	1,506,689
	$ 5,548,563	$ 5,066,203

The actuarial valuations of the present value of the defined benefit obligation were carried out by qualified actuaries. The principal assumptions of the actuarial valuation were as follows:

	Measurement Date	
	December 31, 2021	December 31, 2020
Discount rate	0.75%	0.40%
Future salary increase rate	3.00%	3.00%(Note)

Note: The Company has an additional 20 percent pay raise in 2021.

Through the defined benefit plans under the R.O.C. Labor Standards Law, the Company is exposed to the following risks:

1) Investment risk: The pension funds are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the government's designated authorities or under the mandated management. However, under the R.O.C. Labor Standards Law, the rate of return on assets shall not be less than the average interest rate on a two-year time deposit published by the local banks and the government is responsible for any shortfall in the event that the rate of return is less than the required rate of return.

2) Interest risk: A decrease in the government bond interest rate will increase the present value of the defined benefit obligation; however, this will be partially offset by an increase in the return on the debt investments of the plan assets.

   Assuming a hypothetical decrease in interest rate at the end of the reporting period contributed to a decrease of 0.5% (and not below 0.0%) in the discount rate and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$780,460 thousand and NT$694,732 thousand as of December 31, 2021 and 2020, respectively.

3) Salary risk: The present value of the defined benefit obligation is calculated by reference to the future salaries of plan participants. As such, an increase in the salary of the plan participants will increase the present value of the defined benefit obligation.

   Assuming the expected salary rate increases by 0.5% at the end of the reporting period and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$759,527 thousand and NT$835,964 thousand as of December 31, 2021 and 2020, respectively.

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

Furthermore, in presenting the above sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation liability.

The Company expects to make contributions of NT$2,269,881 thousand to the defined benefit plans in the next year starting from December 31, 2021. The weighted average duration of the defined benefit obligation is 9 years.

21. EQUITY

a. Capital stock

	December 31, 2021	December 31, 2020
Authorized shares (in thousands)	28,050,000	28,050,000
Authorized capital	$ 280,500,000	$ 280,500,000
Issued and paid shares (in thousands)	25,930,380	25,930,380
Issued capital	$ 259,303,805	$ 259,303,805

A holder of issued common shares with par value of NT$10 per share is entitled to vote and to receive dividends.

The authorized shares include 500,000 thousand shares allocated for the exercise of employee stock options.

As of December 31, 2021, 1,064,243 thousand ADSs of TSMC were traded on the NYSE. The number of common shares represented by the ADSs was 5,321,213 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2021	December 31, 2020
Additional paid-in capital	$ 24,184,939	$ 24,184,939
From merger	22,804,510	22,804,510
From convertible bonds	8,892,847	8,892,847
From difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal	8,406,282	-
From share of changes in equities of subsidiaries	113,952	121,843
From share of changes in equities of associates	307,322	302,526
Donations	51,750	40,578
	$ 64,761,602	$ 56,347,243

Under the relevant laws, the capital surplus generated from the excess of the issuance price over the par value of capital stock (including the stock issued for new capital, mergers and convertible bonds), the difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal and donations may be used to offset a deficit; in addition, when the Company has no deficit, such capital surplus may be distributed as cash dividends or stock dividends up to a certain percentage of TSMC's paid-in capital. The capital surplus from share of changes in equities of subsidiaries and associates and dividend of a claim extinguished by a prescription may be used to offset a deficit.

c. Retained earnings and dividend policy

TSMC's Articles of Incorporation provide that, earnings distribution may be made on a quarterly basis after the close of each quarter. Distribution of earnings by way of cash dividends should be approved by TSMC's Board of Directors and reported to TSMC's shareholders in its meeting. When allocating earnings, TSMC shall first estimate and reserve the taxes to be paid, offset its losses, set aside a legal capital reserve at 10% of the remaining earnings (until the accumulated legal capital reserve equals TSMC's paid-in capital), then set aside a special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge. Any balance left over shall be allocated according to relevant laws and the TSMC's Articles of Incorporation.

TSMC's Articles of Incorporation also provide that profits of TSMC may be distributed by way of cash dividend and/or stock dividend. However, distribution of earnings shall be made preferably by way of cash dividend. Distribution of earnings may also be made by way of stock dividend, provided that the ratio for stock dividend shall not exceed 50% of the total distribution.

The legal capital reserve may be used to offset a deficit, or be distributed as dividends in cash or stocks for the portion in excess of 25% of the paid-in capital if the Company incurs no loss.

Pursuant to existing regulations, the Company is required to set aside additional special capital reserve equivalent to the net debit balance of the other components of stockholders' equity, such as the accumulated balance of foreign currency translation reserve, unrealized valuation gain or loss from fair value through other comprehensive income financial assets, gain or loss from changes in fair value of hedging instruments in cash flow hedges, etc. For the subsequent decrease in the deduction amount to stockholders' equity, any special reserve appropriated may be reversed to the extent that the net debit balance reverses.

The appropriations of 2021, 2020 and 2019 quarterly earnings have been approved by TSMC's Board of Directors in its meeting, respectively. The appropriations and cash dividends per share were as follows:

Resolution Date of TSMC's Board of Directors in its meeting	**Fourth Quarter of 2021** **February 15, 2022**	**Third Quarter of 2021** **November 9, 2021**	**Second Quarter of 2021** **August 10, 2021**	**First Quarter of 2021** **June 9, 2021**
Special capital reserve	$ 3,304,303	$ 710,169	$ 10,201,220	$ (6,287,050)
Cash dividends to shareholders	$ 71,308,546	$ 71,308,547	$ 71,308,546	$ 71,308,546
Cash dividends per share (NT$)	$ 2.75	$ 2.75	$ 2.75	$ 2.75

Resolution Date of TSMC's Board of Directors in its meeting	**Fourth Quarter of 2020** **February 9, 2021**	**Third Quarter of 2020** **November 10, 2020**	**Second Quarter of 2020** **August 11, 2020**	**First Quarter of 2020** **May 12, 2020**
Special capital reserve	$ 12,420,727	$ 5,501,351	$ 11,884,457	$ (2,694,841)
Cash dividends to shareholders	$ 64,825,951	$ 64,825,951	$ 64,825,951	$ 64,825,951
Cash dividends per share (NT$)	$ 2.5	$ 2.5	$ 2.5	$ 2.5

Resolution Date of TSMC's Board of Directors in its meeting	**Fourth Quarter of 2019** **February 11, 2020**	**Third Quarter of 2019** **November 12, 2019**	**Second Quarter of 2019** **August 13, 2019**	**First Quarter of 2019** **June 5, 2019**
Special capital reserve	$ 16,893,073	$ 3,289,166	$ (3,338,190)	$ (4,723,939)
Cash dividends to shareholders	$ 64,825,951	$ 64,825,951	$ 64,825,951	$ 51,860,761
Cash dividends per share (NT$)	$ 2.5	$ 2.5	$ 2.5	$ 2.0

The special capital reserve for 2021 is to be presented for approval in the TSMC's shareholders' meeting to be held on June 8, 2022 (expected).

d. Others

Changes in others were as follows:

	Year Ended December 31, 2021				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ (57,001,627)	$ 2,321,754	$ -	$ -	$ (54,679,873)
Exchange differences arising on translation of foreign operations	(6,181,737)	-	-	-	(6,181,737)
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	1,898,206	-	-	1,898,206
Debt instruments	-	(3,339,796)	-	-	(3,339,796)
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(187,654)	-	-	(187,654)
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	(93,229)	-	-	(93,229)
Loss allowance adjustments from debt instruments	-	1,234	-	-	1,234
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	90,119	-	90,119
Transferred to initial carrying amount of hedged items	-	-	48,469	-	48,469
Share of other comprehensive income (loss) of associates	(119,997)	30,015	(14,682)	-	(104,664)
Income tax effect	-	(56,220)	(3,370)	-	(59,590)
Balance, end of year	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)

	Year Ended December 31, 2020				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ (26,871,400)	$ (692,959)	$ (3,820)	$ (190)	$ (27,568,369)
Exchange differences arising on translation of foreign operations	(29,846,818)	-	-	-	(29,846,818)
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	423,212	-	-	423,212
Debt instruments	-	3,907,022	-	-	3,907,022
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	108,687	-	-	108,687
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	(1,439,420)	-	-	(1,439,420)
Loss allowance adjustments from debt instruments	-	(891)	-	-	(891)
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	24,085	-	24,085
Transferred to initial carrying amount of hedged items	-	-	(20,265)	-	(20,265)
Share of other comprehensive income (loss) of associates	(283,409)	15,450	-	-	(267,959)
Share of unearned stock-based employee compensation of associates	-	-	-	190	190
Income tax effect	-	653	-	-	653
Balance, end of year	$ (57,001,627)	$ 2,321,754	$ -	$ -	$ (54,679,873)

The aforementioned other equity includes the changes in other equities of TSMC and TSMC's share of its subsidiaries and associates.

e. Treasury stock

For TSMC's shareholders' interests, TSMC's Board of Directors approved a share buyback plan on February 15, 2022 to repurchase 1,387 thousand shares during the period from February 16, 2022 to April 15, 2022. The shares purchased will be cancelled subsequently.

22. NET REVENUE

a. Disaggregation of revenue from contracts with customers

	Years Ended December 31	
Product	**2021**	**2020**
Wafer	$1,405,300,273	$1,178,456,273
Others	182,114,764	160,798,538
	$1,587,415,037	$1,339,254,811

	Years Ended December 31	
Geography	**2021**	**2020**
Taiwan	$ 203,963,760	$ 129,082,884
United States	1,015,996,424	817,910,976
China	164,552,063	233,783,358
Europe, the Middle East and Africa	89,010,064	70,213,432
Japan	71,920,856	63,299,176
Others	41,971,870	24,964,985
	$1,587,415,037	$1,339,254,811

The Company categorized the net revenue mainly based on the countries where the customers are headquartered.

	Years Ended December 31	
Platform	**2021**	**2020**
Smartphone	$ 695,091,191	$ 645,303,613
High Performance Computing	587,780,144	439,809,984
Internet of Things	133,005,979	110,355,188
Automotive	67,076,353	44,367,562
Digital Consumer Electronics	55,577,223	54,555,665
Others	48,884,147	44,862,799
	$1,587,415,037	$1,339,254,811

Resolution	Years Ended December 31 2021	2020
5-nanometer	$ 262,327,365	$ 90,934,485
7-nanometer	440,383,100	394,836,964
10-nanometer	659,989	3,403,151
16-nanometer	191,058,940	197,959,003
20-nanometer	5,668,752	8,450,865
28-nanometer	153,066,563	149,367,729
40/45-nanometer	103,413,639	103,176,542
65-nanometer	66,467,903	61,226,671
90-nanometer	32,260,288	29,380,358
0.11/0.13 micron	40,558,534	33,197,137
0.15/0.18 micron	86,700,287	86,008,475
0.25 micron and above	22,734,913	20,514,893
Wafer revenue	$1,405,300,273	$1,178,456,273

b. Contract balances

	December 31, 2021	December 31, 2020	January 1, 2020
Contract liabilities (classified under accrued expenses and other current liabilities)	$ 39,762,588	$ 13,775,088	$ 6,784,323

The changes in the contract liability balances primarily result from the timing difference between the satisfaction of performance obligation and the customer's payment.

The Company recognized revenue from the beginning balance of contract liability, which amounted to NT$11,590,400 thousand and NT$4,737,915 thousand for the years ended December 31, 2021 and 2020, respectively.

c. Temporary receipts from customers

	December 31, 2021
Current portion (classified under accrued expenses and other current liabilities)	$ 30,612,702
Noncurrent portion (classified under other noncurrent liabilities)	155,381,485
	$ 185,994,187

The Company's temporary receipts from customer are payments made by customers to the Company to retain the Company's capacity. When the terms and conditions set forth in the agreements are subsequently satisfied, the treatment of temporary receipts will be determined by mutual consent.

d. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms. As of December 31, 2021 and 2020, the aforementioned refund liabilities amounted to NT$41,038,041 thousand and NT$33,194,765 thousand (classified under accrued expenses and other current liabilities), respectively.

23. INTEREST INCOME

	Years Ended December 31	
	2021	2020
Interest income		
Bank deposits	$ 2,834,838	$ 5,139,149
Financial assets at FVTPL	-	2,522
Financial assets at FVTOCI	2,192,470	3,121,856
Financial assets at amortized cost	681,457	754,873
	$ 5,708,765	$ 9,018,400

24. FINANCE COSTS

	Years Ended December 31	
	2021	2020
Interest expense		
Corporate bonds	$ 5,202,999	$ 1,337,347
Lease liabilities	193,324	227,752
Bank loans	17,546	500,875
Others	349	15,481
	$ 5,414,218	$ 2,081,455

25. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2021	2020
Gain on disposal of financial assets, net		
Investments in debt instruments at FVTOCI	$ 93,229	$ 1,439,420
Gain (loss) on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	(7,973,667)	8,244,491
The reversal (accrual) of expected credit loss of financial assets		
Investments in debt instruments at FVTOCI	(1,234)	891
Financial assets at amortized cost	3,969	(4,563)
Other gains, net	489,693	426,171
	$ (7,388,010)	$ 10,106,410

26. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2021	2020
Current income tax expense		
Current tax expense recognized in the current year	$ 88,844,915	$ 72,705,385
Income tax adjustments on prior years	207,801	38,701
Other income tax adjustments	152,232	150,204
	89,204,948	72,894,290
Deferred income tax benefit		
The origination and reversal of temporary differences	(17,530,023)	(6,275,192)
Investment tax credits	(5,621,745)	-
	(23,151,768)	(6,275,192)
Income tax expense recognized in profit or loss	$ 66,053,180	$ 66,619,098

A reconciliation of income before income tax and income tax expense recognized in profit or loss was as follows:

	Years Ended December 31	
	2021	2020
Income before tax	$ 663,126,314	$ 584,777,180
Income tax expense at the statutory rate	$ 134,613,312	$ 118,837,423
Tax effect of adjusting items:		
Nondeductible items in determining taxable income	11,261,407	1,009,758
Tax-exempt income	(89,852,940)	(65,988,096)
Additional income tax under the Alternative Minimum Tax Act	32,852,688	18,872,837
The origination and reversal of temporary differences	(17,530,023)	(6,275,192)
Income tax credits	(5,651,297)	(26,537)
	65,693,147	66,430,193
Income tax adjustments on prior years	207,801	38,701
Other income tax adjustments	152,232	150,204
Income tax expense recognized in profit or loss	$ 66,053,180	$ 66,619,098

For the years ended December 31, 2021 and 2020, the Company applied a tax rate of 20% for entities subject to the R.O.C. Income Tax Law; for other jurisdictions, taxes are calculated using the applicable tax rate for each individual jurisdiction.

b. Income tax expense recognized in other comprehensive income

	Years Ended December 31	
	2021	2020
Deferred income tax benefit (expense)		
Related to remeasurement of defined benefit obligation	$ (29,049)	$ 422,010
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	(56,220)	653
Related to gain/loss on cash flow hedges	(3,370)	-
	$ (88,639)	$ 422,663

c. Deferred income tax balance

The analysis of deferred income tax assets and liabilities was as follows:

	December 31, 2021	December 31, 2020
Deferred income tax assets		
Temporary differences		
Depreciation	$ 34,720,661	$ 19,354,383
Refund liability	5,986,173	3,755,131
Investment tax credits	5,621,745	-
Net defined benefit liability	1,237,086	1,341,960
Unrealized loss on inventories	898,998	858,463
Deferred compensation cost	373,983	330,340
Investments in equity instruments at FVTOCI	10,173	66,393
Others	305,067	251,514
	$ 49,153,886	$ 25,958,184
Deferred income tax liabilities		
Temporary differences		
Unrealized exchange gains	$ (706,311)	$ (866,495)
Others	(1,167,566)	(863,446)
	$ (1,873,877)	$ (1,729,941)

	Year Ended December 31, 2021				
		Recognized in			
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	Balance, End of Year
Deferred income tax assets					
Temporary differences					
Depreciation	$ 19,354,383	$ 15,365,737	$ -	$ 541	$ 34,720,661
Refund liability	3,755,131	2,231,450	-	(408)	5,986,173
Investment tax credits	-	5,621,745	-	-	5,621,745
Net defined benefit liability	1,341,960	(75,825)	(29,049)	-	1,237,086
Unrealized loss on inventories	858,463	41,061	-	(526)	898,998
Deferred compensation cost	330,340	49,113	-	(5,470)	373,983
Investments in equity instruments at FVTOCI	66,393	-	(56,220)	-	10,173
Others	251,514	59,045	-	(5,492)	305,067
	$ 25,958,184	$ 23,292,326	$ (85,269)	$ (11,355)	$ 49,153,886
Deferred income tax liabilities					
Temporary differences					
Unrealized exchange gains	$ (866,495)	$ 160,184	$ -	$ -	$ (706,311)
Others	(863,446)	(300,742)	(3,370)	(8)	(1,167,566)
	$ (1,729,941)	$ (140,558)	$ (3,370)	$ (8)	$ (1,873,877)

	Year Ended December 31, 2020				
		Recognized in			
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	Balance, End of Year
Deferred income tax assets					
Temporary differences					
Depreciation	$ 13,547,220	$ 5,823,956	$ -	$ (16,793)	$ 19,354,383
Refund liability	2,150,352	1,606,140	-	(1,361)	3,755,131
Net defined benefit liability	1,016,248	(96,298)	422,010	-	1,341,960
Unrealized loss on inventories	469,430	391,095	-	(2,062)	858,463
Deferred compensation cost	323,093	27,437	-	(20,190)	330,340
Investments in equity instruments at FVTOCI	65,740	-	653	-	66,393
Others	356,275	(91,590)	-	(13,171)	251,514
	$ 17,928,358	$ 7,660,740	$ 422,663	$ (53,577)	$ 25,958,184
Deferred income tax liabilities					
Temporary differences					
Unrealized exchange gains	$ (333,606)	$ (532,889)	$ -	$ -	$ (866,495)
Others	(10,787)	(852,659)	-	-	(863,446)
	$ (344,393)	$ (1,385,548)	$ -	$ -	$ (1,729,941)

d. The deductible temporary differences for which no deferred income tax assets have been recognized

As of December 31, 2021 and 2020, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT$66,431,255 thousand and NT$55,521,034 thousand, respectively.

e. Unused tax-exemption information

As of December 31, 2021, the profits generated from the following project of TSMC are exempt from income tax for a five-year period:

	Tax-exemption Period
Construction and expansion of 2009 by TSMC	2018 to 2022

f. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2021 and 2020, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT$177,552,831 thousand and NT$152,827,360 thousand, respectively.

g. Income tax examination

The tax authorities have examined income tax returns of TSMC through 2019. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

27. EARNINGS PER SHARE

	Years Ended December 31	
	2021	2020
Basic EPS	$ 23.01	$ 19.97
Diluted EPS	$ 23.01	$ 19.97

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT$)
Year Ended December 31, 2021			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	$ 596,540,013	25,930,380	$ 23.01
Year Ended December 31, 2020			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	$ 517,885,387	25,930,380	$ 19.97

28. SHARE-BASED PAYMENT ARRANGEMENTS

a. Employee restricted stock awards

The issuance of employee restricted stock awards (RSAs) for year 2021 of no more than 2,600 thousand common shares has been approved by TSMC's shareholders' meeting held on July 26, 2021. The grants will be made free of charge. Under the aforementioned resolution, TSMC's Board of Directors approved the issuance of RSAs of 1,387 thousand shares. The grant date and the issuance date will be on March 1, 2022.

Vesting conditions of the aforementioned arrangement are as follow:

1) The RSAs granted to a key management personnel can only be vested if

- the key management personnel remains employed by TSMC on the last date of each vesting period;
- during the vesting period, the key management personnel may not breach any agreement with the TSMC or violate the TSMC's work rules; and
- certain key management personnel performance metrics and the TSMC's business performance metrics are met.

2) The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of the TSMC's business performance metrics.

3) The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on the TSMC's relative Total Shareholder Return ("TSR", including capital gains and dividends) achievement to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation Committee's evaluation of the TSMC's Environmental, Social, and Governance ("ESG") achievements. The number of shares so calculated should be rounded down to the nearest integral.

TSMC's TSR relative to the TSR of S&P 500 IT Index	Ratio of Shares to be Vested
Above the Index by X percentage points	50% + X * 2.5%, with the maximum of 100%
Equal to the Index	50%
Below the Index by X percentage points	50% - X * 2.5%, with the minimum of 0%

Restrictions imposed on the key management personnel' rights in the RSAs before the vesting conditions are fulfilled:

1) During each vesting period, no key management personnel granted RSAs, except for inheritance, may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs.

2) Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and etc. shall be exercised by the engaged trustee/custodian on the key management personnel's behalf. Any other shareholder rights including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of TSMC.

3) Granted RSAs shall be deposited in a trust/custody account.

On February 15, 2022, TSMC's Board of Directors approved the issuance of RSAs for year 2022 of no more than 2,960 thousand common shares. The grants will be made free of charge. The actual number of shares to be issued will be resolved by the Board of Directors after the RSAs is approved at the shareholders' meeting and by the competent authority.

b. Cash-settled share-based payment arrangements

In February 2022, TSMC executed a compensation plan to grant no more than 236 thousand units of employee cash-settled share-based payment arrangement without consideration. One unit of the right represents a right to the market value of one TSMC's common share when vested. The vesting conditions and the ratio of units to be vested for key management personnel of the plan are the same as the aforementioned RSAs for year 2021.

29. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2021	2020
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	$ 386,103,923	$ 299,311,405
Recognized in operating expenses	27,936,211	25,191,358
Recognized in other operating income and expenses	147,566	35,680
	$ 414,187,700	$ 324,538,443
b. Amortization of intangible assets		
Recognized in cost of revenue	$ 5,574,246	$ 4,837,728
Recognized in operating expenses	2,632,923	2,348,520
	$ 8,207,169	$ 7,186,248

	Years Ended December 31	
	2021	2020
c. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	$ 3,711,010	$ 2,809,484
Defined benefit plans	192,485	204,915
	3,903,495	3,014,399
Other employee benefits	161,043,653	137,803,038
	$ 164,947,148	$ 140,817,437
Employee benefits expense summarized by function		
Recognized in cost of revenue	$ 98,012,833	$ 83,098,994
Recognized in operating expenses	66,934,315	57,718,443
	$ 164,947,148	$ 140,817,437

According to TSMC's Articles of Incorporation, TSMC shall allocate compensation to directors and profit sharing bonus to employees of TSMC not more than 0.3% and not less than 1% of annual profits during the period, respectively.

TSMC accrued profit sharing bonus to employees based on a percentage of net income before income tax, profit sharing bonus to employees and compensation to directors during the period; compensation to directors was expensed based on estimated amount payable. If there is a change in the proposed amounts after the annual consolidated financial statements are authorized for issue, the differences are recorded as a change in accounting estimate. Accrued profit sharing bonus to employees is illustrated below:

	Years Ended December 31	
	2021	2020
Profit sharing bonus to employees	$ 35,601,449	$ 34,753,184

TSMC's profit sharing bonus to employees and compensation to directors for 2021, 2020 and 2019 had been approved by the Board of Directors of TSMC, as illustrated below:

	Years Ended December 31		
	2021	2020	2019
Resolution Date of TSMC's Board of Directors in its meeting	**February 15, 2022**	**February 9, 2021**	**February 11, 2020**
Profit sharing bonus to employees	$ 35,601,449	$ 34,753,184	$ 23,165,745
Compensation to directors	$ 487,537	$ 509,753	$ 360,404

There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2021, 2020 and 2019, respectively.

The information about the appropriations of TSMC's profit sharing bonus to employees and compensation to directors is available at the Market Observation Post System website.

30. CASH FLOW INFORMATION

a. Non-cash transactions

	Years Ended December 31	
	2021	2020
Additions of financial assets at FVTOCI	$ 253,613,917	$ 268,653,527
Conversion of convertible bonds into equity securities	-	(120,548)
Exchange of equity instruments	(106,185)	-
Changes in accrued expenses and other current liabilities	2,380,947	(5,895,483)
Payments for acquisition of financial assets at FVTOCI	$ 255,888,679	$ 262,637,496
Disposal of financial assets at FVTOCI	$ 251,201,439	$ 269,011,852
Changes in other financial assets	3,509,283	(2,079,936)
Exchange of equity instruments	(106,185)	-
Proceeds from disposal of financial assets at FVTOCI	$ 254,604,537	$ 266,931,916
Additions of property, plant and equipment	$ 835,406,296	$ 525,720,748
Changes in other financial assets	1,933,965	584,782
Exchange of assets	(3,256,517)	(1,148)
Changes in payables to contractors and equipment suppliers	5,153,380	(19,085,925)
Transferred to initial carrying amount of hedged items	(41,416)	20,265
Payments for acquisition of property, plant and equipment	$ 839,195,708	$ 507,238,722
Additions of intangible assets	$ 9,318,478	$ 12,559,467
Changes in other financial assets	2,950	10,457
Changes in account payable	-	191,429
Changes in accrued expenses and other current liabilities	(280,677)	(3,218,966)
Payments for acquisition of intangible assets	$ 9,040,751	$ 9,542,387

b. Reconciliation of liabilities arising from financing activities

			Non-cash changes			
	Balance as of January 1, 2021	Financing Cash Flow	Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	Balance as of December 31, 2021
Short-term loans	$ 88,559,026	$ 35,668,397	$ (8,777,416)	$ -	$ (528,674)	$ 114,921,333
Bonds payable	256,705,084	361,255,068	(3,646,920)	-	157,420	614,470,652
Long-term bank loans	1,967,611	1,510,000	-	-	(1,813)	3,475,798
Lease liabilities	22,388,674	(2,178,297)	(82,377)	2,619,341	193,324	22,940,665
Total	$ 369,620,395	$ 396,255,168	$ (12,506,713)	$ 2,619,341	$ (179,743)	$ 755,808,448

			Non-cash changes			
	Balance as of January 1, 2020	Financing Cash Flow	Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	Balance as of December 31, 2020
Short-term loans	$ 118,522,290	$ (31,571,567)	$ 1,608,303	$ -	$ -	$ 88,559,026
Bonds payable	56,900,000	204,534,945	(4,758,550)	-	28,689	256,705,084
Long-term bank loans	-	2,000,000	-	-	(32,389)	1,967,611
Lease liabilities	17,316,917	(2,819,733)	(78,493)	7,742,231	227,752	22,388,674
Total	$ 192,739,207	$ 172,143,645	$ (3,228,740)	$ 7,742,231	$ 224,052	$ 369,620,395

Note: Other changes include discounts on short-term loans, amortization of bonds payable, amortization of long-term bank loan interest subsidy and financial cost of lease liabilities.

31. CAPITAL MANAGEMENT

The Company requires significant amounts of capital to build and expand its production facilities and acquire additional equipment. In consideration of the industry dynamics, the Company manages its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, capital asset purchases, research and development activities, dividend payments, debt service requirements and other business requirements associated with its existing operations over the next 12 months.

32. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2021	December 31, 2020
Financial assets		
FVTPL (Note 1)	$ 159,048	$ 2,259,412
FVTOCI (Note 2)	129,607,052	129,918,694
Hedging financial assets	13,468	47
Amortized cost (Note 3)	1,283,715,674	826,293,705
	$1,413,495,242	$ 958,471,858
Financial liabilities		
FVTPL (Note 4)	$ 681,914	$ 94,128
Hedging financial liabilities	9,642	1,169
Amortized cost (Note 5)	1,355,957,244	748,129,332
	$1,356,648,800	$ 748,224,629

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable (net), equity and debt investments.

Note 3: Including cash and cash equivalents, financial assets at amortized cost, notes and accounts receivable (including related parties), other receivables and refundable deposits.

Note 4: Held for trading.

Note 5: Including short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, cash dividends payable, accrued expenses and other current liabilities, bonds payable, long-term bank loans, guarantee deposits and other noncurrent liabilities.

b. Financial risk management objectives

The Company manages its exposure to foreign currency risk, interest rate risk, equity price risk, credit risk and liquidity risk with the objective to reduce the potentially adverse effects the market uncertainties may have on its financial performance.

The plans for material treasury activities are reviewed by the Audit Committees and/or Board of Directors in accordance with procedures required by relevant regulations or internal controls. During the implementation of such plans, the Company must comply with certain treasury procedures that provide guiding principles for overall financial risk management and segregation of duties.

c. Market risk

The Company is exposed to the financial market risks, primarily changes in foreign currency exchange rates, interest rates and equity investment prices. A portion of these risks is hedged.

Foreign currency risk

Substantially all the Company's sales are denominated in U.S. dollars and over half of its capital expenditures are denominated in currencies other than NT dollars, primarily in U.S. dollars, Japanese yen and Euros. As a result, any significant fluctuations to its disadvantage in the exchanges rate of NT dollar against such currencies, in particular a weakening of U.S. dollar against NT dollar, would have an adverse impact on the revenue and operating profit as expressed in NT dollars. The Company uses foreign currency derivative contracts, such as currency forwards or currency swaps, to protect against currency exchange rate risks associated with non-NT dollar-denominated assets and liabilities and certain forecasted transactions. These hedges reduce, but do not entirely eliminate, the effect of foreign currency exchange rate movements on the assets and liabilities.

Based on a sensitivity analysis performed on the Company's total monetary assets and liabilities for the years ended December 31, 2021 and 2020, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT$1,435,346 thousand and NT$897,722 thousand, respectively, after taking into account hedges and offsetting positions.

Interest rate risk

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

The Company's cash and cash equivalents as well as fixed income investments in both fixed- and floating-rate securities carry a degree of interest rate risk. The majority of the Company's fixed income investments are fixed-rate securities, which are classified as financial assets at FVTOCI, and may have their fair value adversely affected due to a rise in interest rates. At the same time, if interest rates fall, cash and cash equivalents as well as floating-rate securities may generate less interest income than expected. The Company has entered and may in the future enter into interest rate futures to partially hedge the interest rate risk on its fixed income investments. However, these hedges can offset only a small portion of the financial impact from movements in interest rates.

Based on a sensitivity analysis performed on the Company's fixed income investments at the end of the reporting period, interest rates increase of 100 basis points (1.00%) across all maturities would have decreased the Company's other comprehensive income by NT$3,767,071 thousand and NT$3,143,569 thousand for the years ended December 31, 2021 and 2020, respectively.

All of the Company's short-term debt is floating-rate, hence a rise in interest rates may result in higher interest expense than expected. The majority of the Company's long-term debt is fixed-rate and measured at amortized cost and as such, changes in interest rates would not affect the future cash flows and the carrying amount.

Other price risk

The Company is exposed to equity price risk arising from financial assets at FVTOCI.

Assuming a hypothetical decrease of 10% in prices of the equity investments at the end of the reporting period for the years ended December 31, 2021 and 2020, the other comprehensive income would have decreased by NT$595,766 thousand and NT$446,470 thousand, respectively.

d. Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial losses to the Company. The Company is exposed to credit risks from operating activities, primarily accounts receivable, and from investing activities, primarily deposits, fixed-income investments and other financial instruments with banks. Credit risk is managed separately for business related and financial related exposures. As of the end of the reporting period, the Company's maximum credit risk exposure is equal to the carrying amount of financial assets.

Business related credit risk

The Company's accounts receivable are from its customers worldwide. The majority of the Company's outstanding accounts receivable are not covered by collaterals or guarantees. While the Company has procedures to monitor and manage credit risk exposure on accounts receivable, there is no assurance such procedures will effectively eliminate losses resulting from its credit risk. This risk is heightened during periods when economic conditions worsen.

As of December 31, 2021 and 2020, the Company's ten largest customers accounted for 79% of accounts receivable in both years. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

The Company mitigates its financial credit risk by selecting counterparties with investment grade credit ratings and by limiting the exposure to any individual counterparty. The Company regularly monitors and reviews the limit applied to counterparties and adjusts the limit according to market conditions and the credit standing of the counterparties.

The objective of the Company's investment policy is to achieve a return that will allow the Company to preserve principal and support liquidity requirements. The policy generally requires securities to be investment grade and limits the amount of credit exposure to any one issuer. The Company assesses whether there has been a significant increase in credit risk in the invested securities since initial recognition by reviewing changes in external credit ratings, financial market conditions and material information of the issuers.

The Company assesses the 12-month expected credit loss and lifetime expected credit loss based on the probability of default and loss given default provided by external credit rating agencies. The current credit risk assessment policies are as follows:

Category	Description	Basis for Recognizing Expected Credit Loss	Expected Credit Loss Ratio
Performing	Credit rating is investment grade on valuation date	12 months expected credit loss	0-0.1%
Doubtful	Credit rating is non-investment grade on valuation date	Lifetime expected credit loss-not credit impaired	-
In default	Credit rating is CC or below on valuation date	Lifetime expected credit loss-credit impaired	-
Write-off	There is evidence indicating that the debtor is in severe financial difficulty and the Company has no realistic prospect of recovery	Amount is written off	-

For the years ended December 31, 2021 and 2020, the expected credit loss decreased NT$3,293 thousand and increased NT$1,054 thousand, respectively. The changes were mainly due to investment portfolio adjustment.

e. Liquidity risk management

The objective of liquidity risk management is to ensure the Company has sufficient liquidity to fund its business operations over the next 12 months. The Company manages its liquidity risk by maintaining adequate cash and cash equivalents, financial assets at FVTOCI-current, financial assets at amortized cost-current and sufficient cost-efficient funding.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments, including principal and interest.

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
December 31, 2021					
Non-derivative financial liabilities					
Short-term loans	$ 114,767,034	$ -	$ -	$ -	$ 114,767,034
Accounts payable (including related parties)	48,722,789	-	-	-	48,722,789
Payables to contractors and equipment suppliers	145,742,148	-	-	-	145,742,148
Accrued expenses and other current liabilities	120,240,359	-	-	-	120,240,359
Bonds payable	13,580,628	42,801,397	191,458,126	506,504,958	754,345,109
Long-term bank loans	183,671	2,217,112	1,153,900	-	3,554,683
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	2,371,568	3,896,249	3,385,295	14,649,235	24,302,347
Others	-	164,991,929	-	-	164,991,929
	445,608,197	213,906,687	195,997,321	521,154,193	1,376,666,398
Derivative financial instruments					
Forward exchange contracts					
Outflows	187,708,035	-	-	-	187,708,035
Inflows	(187,631,930)	-	-	-	(187,631,930)
	76,105	-	-	-	76,105
	$ 445,684,302	$ 213,906,687	$ 195,997,321	$ 521,154,193	$1,376,742,503
December 31, 2020					
Non-derivative financial liabilities					
Short-term loans	$ 88,557,526	$ -	$ -	$ -	$ 88,557,526
Accounts payable (including related parties)	41,095,002	-	-	-	41,095,002
Payables to contractors and equipment suppliers	157,804,961	-	-	-	157,804,961
Accrued expenses and other current liabilities	71,995,747	-	-	-	71,995,747
Bonds payable	5,327,971	27,631,589	59,986,812	207,152,135	300,098,507
Long-term bank loans	8,000	847,389	1,170,944	-	2,026,333
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	2,024,212	3,566,719	3,198,845	15,067,857	23,857,633
	366,813,419	32,045,697	64,356,601	222,219,992	685,435,709
Derivative financial instruments					
Forward exchange contracts					
Outflows	177,764,155	-	-	-	177,764,155
Inflows	(181,457,960)	-	-	-	(181,457,960)
	(3,693,805)	-	-	-	(3,693,805)
	$ 363,119,614	$ 32,045,697	$ 64,356,601	$ 222,219,992	$ 681,741,904

Note: Information about the maturity analysis for lease liabilities more than 5 years:

	5-10 Years	10-15 Years	15-20 Years	More Than 20 Years	Total
December 31, 2021					
Lease liabilities	$ 7,513,939	$ 5,043,067	$ 1,972,740	$ 119,489	$ 14,649,235

	5-10 Years	10-15 Years	15-20 Years	More Than 20 Years	Total
December 31, 2020					
Lease liabilities	$ 7,401,969	$ 5,253,877	$ 2,255,185	$ 156,826	$ 15,067,857

f. Fair value of financial instruments

1) Fair value measurements recognized in the consolidated balance sheets

Fair value measurements are grouped into Levels 1 to 3 based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

The timing of transfers between levels within the fair value hierarchy is at the end of reporting period.

2) Fair value of financial instruments that are measured at fair value on a recurring basis

Fair value hierarchy

The following table presents the Company's financial assets and liabilities measured at fair value on a recurring basis:

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
Financial assets at FVTPL				
Mandatorily measured at FVTPL				
Forward exchange contracts	$ -	$ 159,048	$ -	$ 159,048
Financial assets at FVTOCI				
Investments in debt instruments				
Corporate bonds	$ -	$ 57,253,161	$ -	$ 57,253,161
Agency bonds/Agency mortgage-backed securities	-	32,070,114	-	32,070,114
Government bonds	21,267,002	78,792	-	21,345,794
Asset-backed securities	-	8,660,424	-	8,660,424
Investments in equity instruments				
Non-publicly traded equity investments	-	-	5,887,892	5,887,892
Publicly traded stocks	189,758	-	-	189,758
Notes and accounts receivable, net	-	4,199,909	-	4,199,909
	$ 21,456,760	$ 102,262,400	$ 5,887,892	$ 129,607,052

(Continued)

	December 31, 2021			
	Level 1	Level 2	Level 3	Total
Hedging financial assets				
Cash flow hedges				
Forward interest rate contracts	$ -	$ 13,468	$ -	$ 13,468
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$ -	$ 681,914	$ -	$ 681,914
Hedging financial liabilities				
Fair value hedges				
Interest rate futures contracts	$ 9,642	$ -	$ -	$ 9,642

(Concluded)

	December 31, 2020			
	Level 1	Level 2	Level 3	Total
Financial assets at FVTPL				
Mandatorily measured at FVTPL				
Forward exchange contracts	$ -	$ 2,259,412	$ -	$ 2,259,412
Financial assets at FVTOCI				
Investments in debt instruments				
Corporate bonds	$ -	$ 56,593,623	$ -	$ 56,593,623
Agency bonds/Agency mortgage-backed securities	-	43,977,113	-	43,977,113
Government bonds	13,279,154	180,349	-	13,459,503
Asset-backed securities	-	8,368,264	-	8,368,264
Investments in equity instruments				
Non-publicly traded equity investments	-	-	4,514,940	4,514,940
Publicly traded stocks	49,950	-	-	49,950
Notes and accounts receivable, net	-	2,955,301	-	2,955,301
	$ 13,329,104	$ 112,074,650	$ 4,514,940	$ 129,918,694
Hedging financial assets				
Fair value hedges				
Interest rate futures contracts	$ 47	$ -	$ -	$ 47
Financial liabilities at FVTPL				
Held for trading				
Forward exchange contracts	$ -	$ 94,128	$ -	$ 94,128
Hedging financial liabilities				
Fair value hedges				
Interest rate futures contracts	$ 1,169	$ -	$ -	$ 1,169

Because certain equity investment's quoted price (unadjusted) in active markets became available in the fourth quarter of 2020, its fair value hierarchy was transferred from Level 2 to Level 1.

Reconciliation of Level 3 fair value measurements of financial assets

The financial assets measured at Level 3 fair value were equity investments classified as financial assets at FVTOCI and financial assets at FVTPL. Reconciliations for the years ended December 31, 2021 and 2020 are as follows:

	Years Ended December 31	
	2021	2020
Balance, beginning of year	$ 4,514,940	$ 4,208,900
Additions	319,177	175,202
Recognized in profit or loss	-	(3,821)
Recognized in other comprehensive income or loss	1,821,762	409,014
Disposals and proceeds from return of capital of investments	(700,224)	(51,060)
Effect of exchange rate changes	(67,763)	(223,295)
Balance, end of year	$ 5,887,892	$ 4,514,940

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of financial assets and financial liabilities are determined as follows:

- The fair values of corporate bonds, agency bonds, agency mortgage-backed securities, asset-backed securities and government bonds are determined by quoted market prices provided by third party pricing services.

- The fair values of forward contracts are measured using forward rates and discount rates derived from quoted market prices.

- The fair value of accounts receivable classified as at FVTOCI is determined by the present value of future cash flows based on the discount rate that reflects the credit risk of counterparties

Valuation techniques and assumptions used in Level 3 fair value measurement

The fair values of non-publicly traded equity investments (excluding those trading on the Emerging Stock Board) are mainly determined by using the asset approach and market approach.

The asset approach takes into account the net asset value measured at the fair value by independent parties. On December 31, 2021 and 2020, the Company uses unobservable inputs derived from discount for lack of marketability of 10%. When other inputs remain equal, the fair value will decrease by NT$51,372 thousand and NT39,006 thousand, respectively, if discounts for lack of marketability increase by 1%.

For the remaining few investments, the market approach is used to arrive at their fair values, for which the recent financing activities of investees, the market transaction prices of the similar companies and market conditions are considered.

3) Fair value of financial instruments that are not measured at fair value

Except as detailed in the following table, the Company considers that the carrying amounts of financial instruments in the consolidated financial statements that are not measured at fair value approximate their fair values.

Fair value hierarchy

The table below sets out the fair value hierarchy for the Company's financial assets and liabilities which are not required to be measured at fair value:

	December 31, 2021	
	Carrying Amount	Level 2 Fair Value
Financial assets		
Financial assets at amortized costs		
Corporate bonds	$ 5,306,962	$ 5,317,957
Financial liabilities		
Financial liabilities at amortized costs		
Bonds payable	$ 614,470,652	$ 613,514,692

	December 31, 2020	
	Carrying Amount	Level 2 Fair Value
Financial assets		
Financial assets at amortized costs		
Corporate bonds	$ 10,970,199	$ 11,053,550
Financial liabilities		
Financial liabilities at amortized costs		
Bonds payable	$ 256,705,084	$ 257,551,196

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of corporate bonds and the Company's bonds payable are determined by quoted market prices provided by third party pricing services.

33. RELATED PARTY TRANSACTIONS

Intercompany balances and transactions between TSMC and its subsidiaries, which are related parties of TSMC, have been eliminated upon consolidation; therefore those items are not disclosed in this note. The following is a summary of significant transactions between the Company and other related parties:

a. Related party name and categories

Related Party Name	Related Party Categories
GUC	Associates
VIS	Associates
SSMC	Associates
Xintec	Associates
TSMC Education and Culture Foundation	Other related parties
TSMC Charity Foundation	Other related parties

b. Net revenue

		Years Ended December 31	
		2021	2020
Item	Related Party Categories		
Net revenue from sale of goods	Associates	$ 8,475,908	$ 8,129,764

c. Purchases

	Years Ended December 31	
	2021	2020
Related Party Categories		
Associates	$ 7,569,787	$ 7,606,421

d. Receivables from related parties

		December 31, 2021	December 31, 2020
Item	Related Party Name/Categories		
Receivables from related parties	GUC	$ 597,836	$ 370,643
	Xintec	117,488	187,488
		$ 715,324	$ 558,131
Other receivables from related parties	SSMC	$ 50,375	$ 45,291
	VIS	11,156	4,311
	Other associates	-	1,043
		$ 61,531	$ 50,645

e. Payables to related parties

		December 31, 2021	December 31, 2020
Item	Related Party Name/Categories		
Payables to related parties	Xintec	$ 725,325	$ 1,358,624
	VIS	357,151	311,406
	SSMC	349,211	400,819
	Other associates	5,499	36,869
		$ 1,437,186	$ 2,107,718

f. Accrued expenses and other current liabilities

		December 31, 2021	December 31, 2020
Item	Related Party Categories		
Contract liabilities	Associates	$726,350	$ -

g. Others

		Years Ended December 31	
		2021	2020
Item	Related Party Categories		
Manufacturing expenses	Associates	$ 5,459,919	$ 5,439,978

The sales prices and payment terms to related parties were not significantly different from those of sales to third parties. For other related party transactions, price and terms were determined in accordance with mutual agreements.

The Company leased factory and office from associates. The lease terms and prices were both determined in accordance with mutual agreements. The rental expenses were paid to associates monthly; the related expenses were both classified under manufacturing expenses.

h. Compensation of key management personnel

The compensation to directors and other key management personnel were as follows:

	Years Ended December 31	
	2021	2020
Short-term employee benefits	$ 2,886,786	$ 2,666,696
Post-employment benefits	2,900	2,334
	$ 2,889,686	$ 2,669,030

The compensation to directors and other key management personnel were determined by the Compensation Committee of TSMC in accordance with the individual performance and market trends.

34. PLEDGED ASSETS

The Company provided certificate of deposits recorded in other financial assets as collateral mainly for building construction, building lease agreements and energy purchase agreements. As of December 31, 2021 and 2020, the aforementioned other financial assets amounted to NT$210,235 thousand and NT$135,375 thousand, respectively.

35. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

Significant contingent liabilities and unrecognized commitments of the Company as of the end of the reporting period, excluding those disclosed in other notes, were as follows:

a. Under a technical cooperation agreement with Industrial Technology Research Institute, the R.O.C. Government or its designee approved by TSMC can use up to 35% of TSMC's capacity provided TSMC's outstanding commitments to its customers are not prejudiced. The term of this agreement is for five years beginning from January 1, 1987 and is automatically renewed for successive periods of five years unless otherwise terminated by either party with one year prior notice. As of December 31, 2021, the R.O.C. Government did not invoke such right.

b. Under a Shareholders Agreement entered into with Philips and EDB Investments Pte Ltd. on March 30, 1999, the parties formed a joint venture company, SSMC, which is an integrated circuit foundry in Singapore. TSMC's equity interest in SSMC was 32%. Nevertheless, in September 2006, Philips spun-off its semiconductor subsidiary which was renamed as NXP B.V. Further, TSMC and NXP B.V. purchased all the SSMC shares owned by EDB Investments Pte Ltd. pro rata according to the Shareholders Agreement on November 15, 2006. After the purchase, TSMC and NXP B.V. currently own approximately 39% and 61% of the SSMC shares, respectively. TSMC and NXP B.V. are required, in the aggregate, to purchase at least 70% of SSMC's capacity, but TSMC alone is not required to purchase more than 28% of the capacity. If any party defaults on the commitment and the capacity utilization of SSMC falls below a specific percentage of its capacity, the defaulting party is required to compensate SSMC for all related unavoidable costs. There was no default from the aforementioned commitment as of December 31, 2021.

c. TSMC entered into long-term purchase agreements of materials and supplies and agreements of waste disposal with multiple suppliers. The relative minimum fulfillment quantity and price are specified in the agreements.

d. TSMC entered into a long-term purchase agreement of equipment. The relative fulfillment quantity and price are specified in the agreement.

e. TSMC entered into long-term energy purchase agreements with multiple suppliers. The relative fulfillment period, quantity and price are specified in the agreements.

f. Amounts available under unused letters of credit as of December 31, 2021 and 2020 were NT$136,710 thousand and NT$56,194 thousand, respectively.

36. EXCHANGE RATE INFORMATION OF FOREIGN-CURRENCY FINANCIAL ASSETS AND LIABILITIES

The following information was summarized according to the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
December 31, 2021			
Financial assets			
Monetary items			
USD	$ 11,445,396	27.674	$ 316,739,883
USD	2,023,233	6.379(Note 2)	55,990,951
EUR	14,964	31.460	470,776
EUR	40,326	7.252(Note 3)	1,268,665
JPY	10,921,880	0.2414	2,636,542

(Continued)

	Foreign Currencies (In Thousands)	Exchange Rate (Note 1)	Carrying Amount (In Thousands)
Financial liabilities			
Monetary items			
USD	$ 11,958,503	27.674	$ 330,939,620
EUR	3,539,320	31.460	111,347,020
JPY	112,456,908	0.2414	27,147,098
December 31, 2020			
Financial assets			
Monetary items			
USD	6,984,545	28.097	196,244,748
USD	785,171	6.540(Note 2)	22,060,962
EUR	13,820	34.587	478,002
JPY	83,593,234	0.2729	22,812,594
Financial liabilities			
Monetary items			
USD	6,966,889	28.097	195,748,671
EUR	4,150,215	34.587	143,543,499
JPY	105,112,663	0.2729	28,685,246

(Concluded)

Note 1: Except as otherwise noted, exchange rate represents the number of NT dollar for which one foreign currency could be exchanged.

Note 2: The exchange rate represents the number of RMB for which one U.S. dollar could be exchanged.

Note 3: The exchange rate represents the number of RMB for which one Euro could be exchanged.

Please refer to the consolidated statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss for the years ended December 31, 2021 and 2020, respectively. Since there were varieties of foreign currency transactions and functional currencies within the subsidiaries of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

37. ADDITIONAL DISCLOSURES

Following are the additional disclosures required by the Securities and Futures Bureau for TSMC:

a. Financings provided: See Table 1 attached;

b. Endorsement/guarantee provided: See Table 2 attached;

c. Marketable securities held (excluding investments in subsidiaries and associates): See Table 3 attached;

d. Marketable securities acquired and disposed of at costs or prices of at least NT$300 million or 20% of the paid-in capital: See Table 4 attached;

e. Acquisition of individual real estate properties at costs of at least NT$300 million or 20% of the paid-in capital: See Table 5 attached;

f. Disposal of individual real estate properties at prices of at least NT$300 million or 20% of the paid-in capital: None;

g. Total purchases from or sales to related parties of at least NT$100 million or 20% of the paid-in capital: See Table 6 attached;

h. Receivables from related parties amounting to at least NT$100 million or 20% of the paid-in capital: See Table 7 attached;

i. Information about the derivative financial instruments transaction: See Notes 7 and 10;

j. Others: The business relationship between the parent and the subsidiaries and significant transactions between them: See Table 8 attached;

k. Names, locations, and related information of investees over which TSMC exercises significant influence (excluding information on investment in mainland China): See Table 9 attached;

l. Information on investment in mainland China

1) The name of the investee in mainland China, the main businesses and products, its issued capital, method of investment, information on inflow or outflow of capital, percentage of ownership, income (losses) of the investee, share of profits/losses of investee, ending balance, amount received as dividends from the investee, and the limitation on investee: See Table 10 attached.

2) Significant direct or indirect transactions with the investee, its prices and terms of payment, unrealized gain or loss, and other related information which is helpful to understand the impact of investment in mainland China on financial reports: See Table 8 attached.

m. Information of major shareholders

List of all shareholders with ownership of 5 percent or greater showing the names and the number of shares and percentage of ownership held by each shareholder: See Table 11 attached.

38. OPERATING SEGMENTS INFORMATION

a. Operating segments, segment revenue and operating results

TSMC's chief operating decision makers periodically review operating results, focusing on operating income generated by foundry segment. Operating results are used for resource allocation and/or performance assessment. As a result, the Company has only one operating segment, the foundry segment. The foundry segment engages mainly in the manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

The basis for the measurement of income from operations is the same as that for the preparation of financial statements. Please refer to the consolidated statements of comprehensive income for the related segment revenue and operating results.

b. Geographic and major customers' information were as follows:

1) Geographic information

Noncurrent Assets	December 31, 2021	December 31, 2020
Taiwan	$1,953,007,722	$1,569,080,378
United States	41,208,723	9,455,505
China	41,895,164	34,456,406
Europe, the Middle East and Africa	143,916	174,169
Japan	1,011,043	327,250
Others	539	2,996
	$2,037,267,107	$1,613,496,704

Noncurrent assets include property, plant and equipment, right-of-use assets, intangible assets and other noncurrent assets.

2) Major customers representing at least 10% of net revenue

	Years Ended December 31			
	2021		2020	
	Amount	%	Amount	%
Customer A	$ 405,402,955	26	$ 336,775,511	25
Customer B	153,740,831	10	NA (Note)	NA
Customer C	NA	NA	167,390,758	12

Note: Revenue less than 10% of the Company's net revenue.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

FINANCINGS PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Financing Company	Counterparty	Financial Statement Account	Related Party	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Interest Rate	Nature for Financing	Transaction Amounts	Reason for Financing	Allowance for Bad Debt	Collateral		Financing Limits for Each Borrowing Company (Notes 1 and 2)	Financing Company's Total Financing Amount Limits (Notes 1 and 2)
													Item	Value		
1	TSMC China	TSMC Nanjing	Other receivables from related parties	Yes	$ 55,669,760 (RMB 10,600,000) & (US$ 350,000)	$ 33,979,260 (RMB 5,600,000) & (US$ 350,000)	$ 24,293,360 (RMB 5,600,000)	1.30%-1.50%	The need for short-term and long-term financing	$ -	Operating capital	$ -	-	$ -	$ 73,690,307	$ 73,690,307
2	TSMC Global	TSMC	Other receivables from related parties	Yes	102,393,800 (US$ 3,700,000)	-	-	0.00%	The need for short-term financing	-	Operating capital	-	-	-	749,278,812	749,278,812

Note 1: The aggregate amount available for lending to TSMC Nanjing from TSMC China shall not exceed the net worth of TSMC China.

Note 2: The aggregate amount available for lending to TSMC from TSMC Global shall not exceed two times (200%) of the net worth of TSMC Global.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

ENDORSEMENTS/GUARANTEES PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Endorsement/ Guarantee Provider	Guaranteed Party		Limits on Endorsement/ Guarantee Amount Provided to Each Guaranteed Party (Notes 1 and 2)	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Amount of Endorsement/ Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Notes 1 and 2)	Guarantee Provided by Parent Company	Guarantee Provided by A Subsidiary	Guarantee Provided to Subsidiaries in Mainland China
		Name	Nature of Relationship										
0	TSMC	TSMC North America	Subsidiary	$ 542,071,638	$ 2,302,845 (US$ 83,213)	$ 2,302,845 (US$ 83,213)	$ 2,302,845 (US$ 83,213)	$ -	0.11%	$ 542,071,638	Yes	No	No
		TSMC Global	Subsidiary	542,071,638	207,555,000 (US$ 7,500,000)	207,555,000 (US$ 7,500,000)	179,881,000 (US$ 6,500,000)	-	9.57%	542,071,638	Yes	No	No
		TSMC Arizona	Subsidiary	542,071,638	222,289,191 (US$ 8,032,420)	222,289,191 (US$ 8,032,420)	125,430,191 (US$ 4,532,420)	-	10.25%	542,071,638	Yes	No	No
1	TSMC Japan	TSMC JDC	The same parent company	331,028	318,648 (JPY 1,320,000)	318,648 (JPY 1,320,000)	318,648 (JPY 1,320,000)	-	0.01%	331,028	No	No	No

Note 1: The total amount of the endorsement/guarantee provided by TSMC to TSMC North America, TSMC Global and TSMC Arizona shall not exceed twenty-five percent (25%) of TSMC's net worth.

Note 2: The total amount of the endorsement/guarantee provided by TSMC Japan to TSMC JDC shall not exceed two hundred and fifty percent (250%) of TSMC Japan's net worth.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES HELD
DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC	Non-publicly traded equity investments							
	United Industrial Gases Co., Ltd.	-	Financial assets at fair value through other comprehensive income	21,230	$ 497,641	10	$ 497,641	
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	〃	10,500	387,072	7	387,072	
	Global Investment Holding Inc.	-	〃	10,442	111,441	6	111,441	
	Crimson Asia Capital	-	〃	-	2,246	1	2,246	
TSMC Partners	Non-publicly traded equity investments							
	Shanghai Walden Venture Capital Enterprise	-	Financial assets at fair value through other comprehensive income	-	US$ 45,254	6	US$ 45,254	
	China Walden Venture Investments II, L.P.	-	〃	-	US$ 16,456	9	US$ 16,456	
	China Walden Venture Investments III, L.P.	-	〃	-	US$ 11,755	4	US$ 11,755	
	Movella Inc.	-	〃	6,333	-	10	-	
	Tela Innovations	-	〃	6,942	-	22	-	
TSMC Global	Corporate bond							
	Bank of America Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 75,265	N/A	US$ 75,265	
	Morgan Stanley	-	〃	-	US$ 65,115	N/A	US$ 65,115	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 53,756	N/A	US$ 53,756	
	Citigroup Inc.	-	〃	-	US$ 49,298	N/A	US$ 49,298	
	JPMorgan Chase & Co.	-	〃	-	US$ 45,332	N/A	US$ 45,332	
	Wells Fargo & Company	-	〃	-	US$ 38,439	N/A	US$ 38,439	
	AbbVie Inc.	-	〃	-	US$ 37,531	N/A	US$ 37,531	
	Mitsubishi UFJ Financial Group, Inc.	-	〃	-	US$ 31,881	N/A	US$ 31,881	
	Sumitomo Mitsui Financial Group, Inc.	-	〃	-	US$ 27,669	N/A	US$ 27,669	
	HSBC Holdings plc	-	〃	-	US$ 26,960	N/A	US$ 26,960	
	Athene Global Funding	-	〃	-	US$ 25,606	N/A	US$ 25,606	
	Lloyds Banking Group plc	-	〃	-	US$ 21,675	N/A	US$ 21,675	
	BNP Paribas SA	-	〃	-	US$ 21,320	N/A	US$ 21,320	
	Apple Inc.	-	〃	-	US$ 20,502	N/A	US$ 20,502	
	Hyundai Capital America, Inc.	-	〃	-	US$ 19,683	N/A	US$ 19,683	
	Nordea Bank Abp	-	〃	-	US$ 19,605	N/A	US$ 19,605	
	Oracle Corporation	-	〃	-	US$ 19,448	N/A	US$ 19,448	
	Banco Santander, S.A.	-	〃	-	US$ 18,461	N/A	US$ 18,461	
	Volkswagen Group of America Finance, LLC	-	〃	-	US$ 18,205	N/A	US$ 18,205	
	AT&T Inc.	-	〃	-	US$ 17,883	N/A	US$ 17,883	
	Metropolitan Life Global Funding I	-	〃	-	US$ 17,341	N/A	US$ 17,341	
	Sumitomo Mitsui Trust Bank, Limited	-	〃	-	US$ 16,182	N/A	US$ 16,182	
	NatWest Markets Plc	-	〃	-	US$ 16,070	N/A	US$ 16,070	
	Credit Suisse AG, New York Branch	-	〃	-	US$ 15,372	N/A	US$ 15,372	
	The Toronto-Dominion Bank	-	〃	-	US$ 14,786	N/A	US$ 14,786	
	Toyota Motor Credit Corporation	-	〃	-	US$ 14,567	N/A	US$ 14,567	
	Deutsche Bank AG - New York Branch	-	〃	-	US$ 14,423	N/A	US$ 14,423	
	Mizuho Financial Group, Inc.	-	〃	-	US$ 13,999	N/A	US$ 13,999	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Standard Chartered PLC	-	Financial assets at fair value through other comprehensive income	-	US$ 13,484	N/A	US$ 13,484	
	Principal Life Global Funding II	-	〃	-	US$ 13,462	N/A	US$ 13,462	
	Macquarie Group Limited	-	〃	-	US$ 13,190	N/A	US$ 13,190	
	Royal Bank of Canada	-	〃	-	US$ 13,159	N/A	US$ 13,159	
	Barclays PLC	-	〃	-	US$ 13,019	N/A	US$ 13,019	
	AIG Global Funding	-	〃	-	US$ 12,808	N/A	US$ 12,808	
	Nationwide Building Society	-	〃	-	US$ 12,794	N/A	US$ 12,794	
	Banque Fédérative du Crédit Mutuel Société anonyme	-	〃	-	US$ 12,731	N/A	US$ 12,731	
	NTT Finance Corporation	-	〃	-	US$ 12,546	N/A	US$ 12,546	
	Equitable Financial Life Global Funding	-	〃	-	US$ 12,485	N/A	US$ 12,485	
	Capital One Financial Corporation	-	〃	-	US$ 12,063	N/A	US$ 12,063	
	BPCE SA	-	〃	-	US$ 11,849	N/A	US$ 11,849	
	National Securities Clearing Corporation	-	〃	-	US$ 11,771	N/A	US$ 11,771	
	Amazon.com, Inc.	-	〃	-	US$ 11,711	N/A	US$ 11,711	
	Société Générale Société anonyme	-	〃	-	US$ 11,448	N/A	US$ 11,448	
	Protective Life Global Funding	-	〃	-	US$ 11,256	N/A	US$ 11,256	
	Intel Corporation	-	〃	-	US$ 11,221	N/A	US$ 11,221	
	Verizon Communications Inc.	-	〃	-	US$ 10,971	N/A	US$ 10,971	
	Santander UK Group Holdings plc	-	〃	-	US$ 10,463	N/A	US$ 10,463	
	Chevron Corporation	-	〃	-	US$ 10,326	N/A	US$ 10,326	
	Fédération des caisses Desjardins du Québec	-	〃	-	US$ 10,055	N/A	US$ 10,055	
	ING Groep N.V.	-	〃	-	US$ 10,028	N/A	US$ 10,028	
	U.S. Bancorp	-	〃	-	US$ 9,799	N/A	US$ 9,799	
	Roper Technologies, Inc.	-	〃	-	US$ 9,790	N/A	US$ 9,790	
	Daimler Trucks Finance North America LLC	-	〃	-	US$ 9,675	N/A	US$ 9,675	
	Merck & Co., Inc.	-	〃	-	US$ 9,625	N/A	US$ 9,625	
	Bristol-Myers Squibb Company	-	〃	-	US$ 9,412	N/A	US$ 9,412	
	Equinor ASA	-	〃	-	US$ 9,213	N/A	US$ 9,213	
	Canadian Imperial Bank of Commerce	-	〃	-	US$ 9,075	N/A	US$ 9,075	
	NIKE, Inc.	-	〃	-	US$ 8,867	N/A	US$ 8,867	
	New York Life Global Funding	-	〃	-	US$ 8,801	N/A	US$ 8,801	
	The Bank of Nova Scotia	-	〃	-	US$ 8,543	N/A	US$ 8,543	
	Danske Bank A/S	-	〃	-	US$ 8,362	N/A	US$ 8,362	
	KfW	-	〃	-	US$ 8,258	N/A	US$ 8,258	
	UnitedHealth Group Incorporated	-	〃	-	US$ 8,213	N/A	US$ 8,213	
	Guardian Life Global Funding	-	〃	-	US$ 8,171	N/A	US$ 8,171	
	AstraZeneca Finance LLC	-	〃	-	US$ 8,123	N/A	US$ 8,123	
	International Bank for Reconstruction and Development	-	〃	-	US$ 8,107	N/A	US$ 8,107	
	ASB Bank Limited	-	〃	-	US$ 8,030	N/A	US$ 8,030	
	Great-West Lifeco U.S. Finance 2020, Lp	-	〃	-	US$ 7,944	N/A	US$ 7,944	
	Inter-American Development Bank	-	〃	-	US$ 7,937	N/A	US$ 7,937	
	Suncorp-Metway Limited	-	〃	-	US$ 7,846	N/A	US$ 7,846	
	Nomura Holdings, Inc.	-	〃	-	US$ 7,818	N/A	US$ 7,818	
	Equifax Inc.	-	〃	-	US$ 7,807	N/A	US$ 7,807	
	Pacific Life Global Funding II	-	〃	-	US$ 7,543	N/A	US$ 7,543	
	Santander UK plc	-	〃	-	US$ 7,428	N/A	US$ 7,428	
	Credit Agricole SA London Branch	-	〃	-	US$ 7,342	N/A	US$ 7,342	
	Intuit Inc.	-	〃	-	US$ 7,231	N/A	US$ 7,231	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	AstraZeneca PLC	-	Financial assets at fair value through other comprehensive income	-	US$ 7,128	N/A	US$ 7,128	
	SMBC Aviation Capital Finance DAC	-	〃	-	US$ 7,006	N/A	US$ 7,006	
	Prudential Funding Corp.	-	〃	-	US$ 6,971	N/A	US$ 6,971	
	Cargill, Incorporated	-	〃	-	US$ 6,566	N/A	US$ 6,566	
	Credit Suisse Group AG	-	〃	-	US$ 6,485	N/A	US$ 6,485	
	Discover Bank (New Castle, Delaware)	-	〃	-	US$ 6,471	N/A	US$ 6,471	
	Banco Bilbao Vizcaya Argentaria, S.A.	-	〃	-	US$ 6,373	N/A	US$ 6,373	
	Montpelier Re Holdings Ltd.	-	〃	-	US$ 6,371	N/A	US$ 6,371	
	UBS Group Funding (Switzerland) AG	-	〃	-	US$ 6,370	N/A	US$ 6,370	
	Bank of Montreal	-	〃	-	US$ 6,295	N/A	US$ 6,295	
	Huntington Bancshares Incorporated	-	〃	-	US$ 6,275	N/A	US$ 6,275	
	Exxon Mobil Corporation	-	〃	-	US$ 6,254	N/A	US$ 6,254	
	ANZ New Zealand (Int'l) Limited	-	〃	-	US$ 6,211	N/A	US$ 6,211	
	Scentre Group Trust 1	-	〃	-	US$ 6,200	N/A	US$ 6,200	
	Enel Finance International N.V.	-	〃	-	US$ 6,118	N/A	US$ 6,118	
	The Bank of New York Mellon Corporation	-	〃	-	US$ 6,072	N/A	US$ 6,072	
	Fox Corporation	-	〃	-	US$ 6,052	N/A	US$ 6,052	
	Macquarie Bank Limited	-	〃	-	US$ 5,991	N/A	US$ 5,991	
	WPP Finance 2010	-	〃	-	US$ 5,950	N/A	US$ 5,950	
	Shire Acquisitions Investments Ireland Designated Activity Company	-	〃	-	US$ 5,929	N/A	US$ 5,929	
	UBS AG, London Branch	-	〃	-	US$ 5,880	N/A	US$ 5,880	
	Siemens Financieringsmaatschappij N.V.	-	〃	-	US$ 5,871	N/A	US$ 5,871	
	W. P. Carey Inc.	-	〃	-	US$ 5,763	N/A	US$ 5,763	
	Alabama Power Company	-	〃	-	US$ 5,704	N/A	US$ 5,704	
	Cox Communications, Inc.	-	〃	-	US$ 5,649	N/A	US$ 5,649	
	UBS Group AG	-	〃	-	US$ 5,526	N/A	US$ 5,526	
	Fiserv, Inc.	-	〃	-	US$ 5,463	N/A	US$ 5,463	
	CenterPoint Energy, Inc.	-	〃	-	US$ 5,359	N/A	US$ 5,359	
	Roche Holdings, Inc.	-	〃	-	US$ 5,327	N/A	US$ 5,327	
	Five Corners Funding Trust	-	〃	-	US$ 5,299	N/A	US$ 5,299	
	CGI Inc.	-	〃	-	US$ 5,222	N/A	US$ 5,222	
	Capital One, National Association	-	〃	-	US$ 5,202	N/A	US$ 5,202	
	Credit Suisse Group Funding (Guernsey) Limited	-	〃	-	US$ 5,133	N/A	US$ 5,133	
	Sprint Spectrum Co Llc	-	〃	-	US$ 4,958	N/A	US$ 4,958	
	HP Inc.	-	〃	-	US$ 4,897	N/A	US$ 4,897	
	DNB Bank ASA	-	〃	-	US$ 4,836	N/A	US$ 4,836	
	Northwestern Mutual Global Funding	-	〃	-	US$ 4,789	N/A	US$ 4,789	
	Jackson National Life Global Funding	-	〃	-	US$ 4,713	N/A	US$ 4,713	
	Intercontinental Exchange, Inc.	-	〃	-	US$ 4,706	N/A	US$ 4,706	
	Comcast Corporation	-	〃	-	US$ 4,658	N/A	US$ 4,658	
	American International Group, Inc.	-	〃	-	US$ 4,604	N/A	US$ 4,604	
	NatWest Group plc	-	〃	-	US$ 4,583	N/A	US$ 4,583	
	Thermo Fisher Scientific Inc.	-	〃	-	US$ 4,570	N/A	US$ 4,570	
	Bank of New Zealand	-	〃	-	US$ 4,570	N/A	US$ 4,570	
	AvalonBay Communities, Inc.	-	〃	-	US$ 4,499	N/A	US$ 4,499	
	Eversource Energy	-	〃	-	US$ 4,477	N/A	US$ 4,477	
	OGE Energy Corp.	-	〃	-	US$ 4,428	N/A	US$ 4,428	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Florida Power & Light Company	-	Financial assets at fair value through other comprehensive income	-	US$ 4,383	N/A	US$ 4,383	
	Swedbank AB (publ)	-	〃	-	US$ 4,334	N/A	US$ 4,334	
	7-Eleven, Inc.	-	〃	-	US$ 4,301	N/A	US$ 4,301	
	Pioneer Natural Resources Company	-	〃	-	US$ 4,210	N/A	US$ 4,210	
	Daimler Finance North America LLC	-	〃	-	US$ 4,206	N/A	US$ 4,206	
	Fidelity National Information Services, Inc.	-	〃	-	US$ 4,204	N/A	US$ 4,204	
	Element Fleet Management Corp.	-	〃	-	US$ 4,200	N/A	US$ 4,200	
	Coöperatieve Rabobank U.A.	-	〃	-	US$ 4,194	N/A	US$ 4,194	
	Public Storage	-	〃	-	US$ 4,078	N/A	US$ 4,078	
	Svenska Handelsbanken AB (publ)	-	〃	-	US$ 4,074	N/A	US$ 4,074	
	European Bank for Reconstruction and Development	-	〃	-	US$ 4,069	N/A	US$ 4,069	
	Exelon Corporation	-	〃	-	US$ 4,063	N/A	US$ 4,063	
	MPLX LP	-	〃	-	US$ 4,040	N/A	US$ 4,040	
	Ameren Corporation	-	〃	-	US$ 4,028	N/A	US$ 4,028	
	American Express Credit Corporation	-	〃	-	US$ 4,007	N/A	US$ 4,007	
	CNO Global Funding	-	〃	-	US$ 4,007	N/A	US$ 4,007	
	B.A.T. International Finance p.l.c.	-	〃	-	US$ 4,005	N/A	US$ 4,005	
	Appalachian Power Company	-	〃	-	US$ 3,978	N/A	US$ 3,978	
	Coca-Cola Europacific Partners PLC	-	〃	-	US$ 3,975	N/A	US$ 3,975	
	Dominion Energy, Inc.	-	〃	-	US$ 3,899	N/A	US$ 3,899	
	BorgWarner Inc.	-	〃	-	US$ 3,856	N/A	US$ 3,856	
	V.F. Corporation	-	〃	-	US$ 3,830	N/A	US$ 3,830	
	Bayer US Finance II LLC	-	〃	-	US$ 3,802	N/A	US$ 3,802	
	Fifth Third Bancorp	-	〃	-	US$ 3,725	N/A	US$ 3,725	
	Public Service Electric and Gas Company	-	〃	-	US$ 3,714	N/A	US$ 3,714	
	The Charles Schwab Corporation	-	〃	-	US$ 3,669	N/A	US$ 3,669	
	Truist Bank	-	〃	-	US$ 3,655	N/A	US$ 3,655	
	Monongahela Power Company	-	〃	-	US$ 3,652	N/A	US$ 3,652	
	Welltower Inc.	-	〃	-	US$ 3,634	N/A	US$ 3,634	
	Ross Stores, Inc.	-	〃	-	US$ 3,608	N/A	US$ 3,608	
	Diageo Capital plc	-	〃	-	US$ 3,554	N/A	US$ 3,554	
	F&G Global Funding	-	〃	-	US$ 3,519	N/A	US$ 3,519	
	Highmark Inc.	-	〃	-	US$ 3,512	N/A	US$ 3,512	
	Verisk Analytics, Inc.	-	〃	-	US$ 3,494	N/A	US$ 3,494	
	ERAC USA Finance LLC	-	〃	-	US$ 3,493	N/A	US$ 3,493	
	American Honda Finance Corporation	-	〃	-	US$ 3,473	N/A	US$ 3,473	
	Skandinaviska Enskilda Banken AB (publ)	-	〃	-	US$ 3,458	N/A	US$ 3,458	
	Pfizer Inc.	-	〃	-	US$ 3,416	N/A	US$ 3,416	
	HSBC Bank Canada	-	〃	-	US$ 3,406	N/A	US$ 3,406	
	USAA Capital Corp.	-	〃	-	US$ 3,375	N/A	US$ 3,375	
	Penske Truck Leasing Co., L.P.	-	〃	-	US$ 3,364	N/A	US$ 3,364	
	Xcel Energy Inc.	-	〃	-	US$ 3,318	N/A	US$ 3,318	
	The Western Union Company	-	〃	-	US$ 3,313	N/A	US$ 3,313	
	BMW US Capital, LLC	-	〃	-	US$ 3,298	N/A	US$ 3,298	
	Johnson & Johnson	-	〃	-	US$ 3,292	N/A	US$ 3,292	
	Nestlé Holdings, Inc.	-	〃	-	US$ 3,291	N/A	US$ 3,291	
	ONE Gas, Inc.	-	〃	-	US$ 3,195	N/A	US$ 3,195	
	PNC Bank, National Association	-	〃	-	US$ 3,187	N/A	US$ 3,187	
	Texas Instruments Incorporated	-	〃	-	US$ 3,184	N/A	US$ 3,184	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	CNA Financial Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 3,165	N/A	US$ 3,165	
	Avangrid, Inc.	-	〃	-	US$ 3,136	N/A	US$ 3,136	
	Oncor Electric Delivery Company LLC	-	〃	-	US$ 3,111	N/A	US$ 3,111	
	Baidu, Inc.	-	〃	-	US$ 3,091	N/A	US$ 3,091	
	Novartis Capital Corporation	-	〃	-	US$ 3,052	N/A	US$ 3,052	
	BOC Aviation Limited	-	〃	-	US$ 3,041	N/A	US$ 3,041	
	Ralph Lauren Corporation	-	〃	-	US$ 3,018	N/A	US$ 3,018	
	Baxalta Incorporated	-	〃	-	US$ 3,017	N/A	US$ 3,017	
	Phillips 66	-	〃	-	US$ 2,952	N/A	US$ 2,952	
	Southern California Edison Company	-	〃	-	US$ 2,938	N/A	US$ 2,938	
	Chevron Phillips Chemical Company LLC	-	〃	-	US$ 2,936	N/A	US$ 2,936	
	Hewlett Packard Enterprise Company	-	〃	-	US$ 2,936	N/A	US$ 2,936	
	B.A.T Capital Corporation	-	〃	-	US$ 2,936	N/A	US$ 2,936	
	Ameriprise Financial, Inc.	-	〃	-	US$ 2,911	N/A	US$ 2,911	
	National Bank of Canada	-	〃	-	US$ 2,879	N/A	US$ 2,879	
	Eastern Energy Gas Holdings, LLC	-	〃	-	US$ 2,843	N/A	US$ 2,843	
	Ventas Realty, Limited Partnership	-	〃	-	US$ 2,832	N/A	US$ 2,832	
	American Express Company	-	〃	-	US$ 2,809	N/A	US$ 2,809	
	Air Products and Chemicals, Inc.	-	〃	-	US$ 2,779	N/A	US$ 2,779	
	Reliance Standard Life Global Funding II	-	〃	-	US$ 2,765	N/A	US$ 2,765	
	PPL Electric Utilities Corporation	-	〃	-	US$ 2,753	N/A	US$ 2,753	
	Baxter International Inc.	-	〃	-	US$ 2,751	N/A	US$ 2,751	
	CVS Health Corporation	-	〃	-	US$ 2,725	N/A	US$ 2,725	
	Public Service Enterprise Group Incorporated	-	〃	-	US$ 2,715	N/A	US$ 2,715	
	NBN Co Limited	-	〃	-	US$ 2,707	N/A	US$ 2,707	
	DTE Energy Company	-	〃	-	US$ 2,703	N/A	US$ 2,703	
	Realty Income Corporation	-	〃	-	US$ 2,689	N/A	US$ 2,689	
	Nuveen Finance, LLC	-	〃	-	US$ 2,684	N/A	US$ 2,684	
	GA Global Funding Trust	-	〃	-	US$ 2,678	N/A	US$ 2,678	
	Gilead Sciences, Inc.	-	〃	-	US$ 2,671	N/A	US$ 2,671	
	CRH America, Inc.	-	〃	-	US$ 2,622	N/A	US$ 2,622	
	CMS Energy Corporation	-	〃	-	US$ 2,604	N/A	US$ 2,604	
	Kimco Realty Corporation	-	〃	-	US$ 2,596	N/A	US$ 2,596	
	Pinnacle West Capital Corporation	-	〃	-	US$ 2,586	N/A	US$ 2,586	
	The PNC Financial Services Group, Inc.	-	〃	-	US$ 2,580	N/A	US$ 2,580	
	American Electric Power Company, Inc.	-	〃	-	US$ 2,571	N/A	US$ 2,571	
	AutoZone, Inc.	-	〃	-	US$ 2,562	N/A	US$ 2,562	
	Yara International ASA	-	〃	-	US$ 2,553	N/A	US$ 2,553	
	Magellan Midstream Partners, L.P.	-	〃	-	US$ 2,548	N/A	US$ 2,548	
	WEC Energy Group, Inc.	-	〃	-	US$ 2,543	N/A	US$ 2,543	
	Air Lease Corporation	-	〃	-	US$ 2,540	N/A	US$ 2,540	
	John Deere Capital Corporation	-	〃	-	US$ 2,522	N/A	US$ 2,522	
	RGA Global Funding	-	〃	-	US$ 2,506	N/A	US$ 2,506	
	Empower Finance 2020, LP	-	〃	-	US$ 2,465	N/A	US$ 2,465	
	BP Capital Markets America, Inc.	-	〃	-	US$ 2,457	N/A	US$ 2,457	
	Chevron U.S.A. Inc.	-	〃	-	US$ 2,447	N/A	US$ 2,447	
	Georgia Power Company	-	〃	-	US$ 2,424	N/A	US$ 2,424	
	Reynolds American Inc.	-	〃	-	US$ 2,404	N/A	US$ 2,404	
	Berkshire Hathaway Inc.	-	〃	-	US$ 2,403	N/A	US$ 2,403	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Ryder System, Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 2,363	N/A	US$ 2,363	
	NiSource Inc.	-	〃	-	US$ 2,350	N/A	US$ 2,350	
	DuPont de Nemours, Inc.	-	〃	-	US$ 2,324	N/A	US$ 2,324	
	Union Pacific Corporation	-	〃	-	US$ 2,314	N/A	US$ 2,314	
	O'Reilly Automotive, Inc.	-	〃	-	US$ 2,311	N/A	US$ 2,311	
	Health Care Service Corporation	-	〃	-	US$ 2,238	N/A	US$ 2,238	
	Reckitt Benckiser Treasury Services plc	-	〃	-	US$ 2,216	N/A	US$ 2,216	
	ITC Holdings Corp.	-	〃	-	US$ 2,209	N/A	US$ 2,209	
	Georgia-Pacific LLC	-	〃	-	US$ 2,205	N/A	US$ 2,205	
	The East Ohio Gas Company	-	〃	-	US$ 2,190	N/A	US$ 2,190	
	Mead Johnson Nutrition Company	-	〃	-	US$ 2,178	N/A	US$ 2,178	
	Magna International Inc.	-	〃	-	US$ 2,172	N/A	US$ 2,172	
	Citizens Bank, National Association	-	〃	-	US$ 2,133	N/A	US$ 2,133	
	Amphenol Corporation	-	〃	-	US$ 2,123	N/A	US$ 2,123	
	Healthpeak Properties, Inc.	-	〃	-	US$ 2,122	N/A	US$ 2,122	
	Hormel Foods Corporation	-	〃	-	US$ 2,120	N/A	US$ 2,120	
	Olympus Corporation	-	〃	-	US$ 2,110	N/A	US$ 2,110	
	Cigna Corporation	-	〃	-	US$ 2,087	N/A	US$ 2,087	
	Tucson Electric Power Company	-	〃	-	US$ 2,082	N/A	US$ 2,082	
	Otis Worldwide Corporation	-	〃	-	US$ 2,065	N/A	US$ 2,065	
	General Electric Company	-	〃	-	US$ 2,038	N/A	US$ 2,038	
	Keurig Dr Pepper Inc.	-	〃	-	US$ 2,022	N/A	US$ 2,022	
	NextEra Energy Capital Holdings, Inc.	-	〃	-	US$ 2,000	N/A	US$ 2,000	
	Shinhan Financial Group Co., Ltd.	-	〃	-	US$ 1,970	N/A	US$ 1,970	
	Kinder Morgan, Inc.	-	〃	-	US$ 1,961	N/A	US$ 1,961	
	Mitsubishi Corporation	-	〃	-	US$ 1,953	N/A	US$ 1,953	
	NBK SPC Limited	-	〃	-	US$ 1,947	N/A	US$ 1,947	
	Automatic Data Processing, Inc.	-	〃	-	US$ 1,911	N/A	US$ 1,911	
	Sydney Airport Finance Company Pty Ltd	-	〃	-	US$ 1,910	N/A	US$ 1,910	
	AmerisourceBergen Corporation	-	〃	-	US$ 1,894	N/A	US$ 1,894	
	Kentucky Utilities Company	-	〃	-	US$ 1,894	N/A	US$ 1,894	
	Wipro IT Services LLC	-	〃	-	US$ 1,862	N/A	US$ 1,862	
	Evergy Kansas Central, Inc.	-	〃	-	US$ 1,847	N/A	US$ 1,847	
	Walmart Inc.	-	〃	-	US$ 1,831	N/A	US$ 1,831	
	Gulfstream Natural Gas System, L.L.C.	-	〃	-	US$ 1,829	N/A	US$ 1,829	
	Enbridge Inc.	-	〃	-	US$ 1,823	N/A	US$ 1,823	
	Caterpillar Financial Services Corporation	-	〃	-	US$ 1,821	N/A	US$ 1,821	
	Burlington Northern Santa Fe, LLC	-	〃	-	US$ 1,814	N/A	US$ 1,814	
	Tencent Holdings Limited	-	〃	-	US$ 1,803	N/A	US$ 1,803	
	McCormick & Company, Incorporated	-	〃	-	US$ 1,769	N/A	US$ 1,769	
	Infor, Inc.	-	〃	-	US$ 1,762	N/A	US$ 1,762	
	Tyson Foods, Inc.	-	〃	-	US$ 1,754	N/A	US$ 1,754	
	Quest Diagnostics Incorporated	-	〃	-	US$ 1,733	N/A	US$ 1,733	
	AIA Group Limited	-	〃	-	US$ 1,721	N/A	US$ 1,721	
	Berkshire Hathaway Energy Company	-	〃	-	US$ 1,719	N/A	US$ 1,719	
	eBay Inc.	-	〃	-	US$ 1,700	N/A	US$ 1,700	
	University of California	-	〃	-	US$ 1,700	N/A	US$ 1,700	
	International Business Machines Corporation	-	〃	-	US$ 1,692	N/A	US$ 1,692	
	Emerson Electric Co.	-	〃	-	US$ 1,683	N/A	US$ 1,683	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Raytheon Technologies Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 1,675	N/A	US$ 1,675	
	Westpac Banking Corporation	-	〃	-	US$ 1,670	N/A	US$ 1,670	
	Midwest Connector Capital Company LLC	-	〃	-	US$ 1,658	N/A	US$ 1,658	
	Anthem, Inc.	-	〃	-	US$ 1,651	N/A	US$ 1,651	
	Essex Portfolio Limited Partnership	-	〃	-	US$ 1,644	N/A	US$ 1,644	
	APT Pipelines Limited	-	〃	-	US$ 1,641	N/A	US$ 1,641	
	UBS Group Funding (Jersey) Ltd.	-	〃	-	US$ 1,635	N/A	US$ 1,635	
	China Resources Gas Group Limited	-	〃	-	US$ 1,614	N/A	US$ 1,614	
	MetLife, Inc.	-	〃	-	US$ 1,611	N/A	US$ 1,611	
	The Southern Company	-	〃	-	US$ 1,609	N/A	US$ 1,609	
	Alimentation Couche-Tard Inc.	-	〃	-	US$ 1,606	N/A	US$ 1,606	
	Suntory Holdings Limited	-	〃	-	US$ 1,598	N/A	US$ 1,598	
	Mondelez International Holdings Netherlands Bv	-	〃	-	US$ 1,597	N/A	US$ 1,597	
	Duke Energy Florida, LLC	-	〃	-	US$ 1,594	N/A	US$ 1,594	
	Panasonic Corporation	-	〃	-	US$ 1,588	N/A	US$ 1,588	
	NSTAR Electric Company	-	〃	-	US$ 1,581	N/A	US$ 1,581	
	Brookfield Finance LLC	-	〃	-	US$ 1,576	N/A	US$ 1,576	
	CK Hutchison International (19) Limited	-	〃	-	US$ 1,564	N/A	US$ 1,564	
	CPI Property Group S.A.	-	〃	-	US$ 1,562	N/A	US$ 1,562	
	Barclays Bank PLC	-	〃	-	US$ 1,546	N/A	US$ 1,546	
	Marsh & McLennan Companies, Inc.	-	〃	-	US$ 1,530	N/A	US$ 1,530	
	Marathon Petroleum Corporation	-	〃	-	US$ 1,524	N/A	US$ 1,524	
	KEB Hana Bank	-	〃	-	US$ 1,504	N/A	US$ 1,504	
	Alliant Energy Finance, LLC	-	〃	-	US$ 1,466	N/A	US$ 1,466	
	Eastern Gas Transmission and Storage, Inc.	-	〃	-	US$ 1,421	N/A	US$ 1,421	
	Virginia Electric and Power Company	-	〃	-	US$ 1,418	N/A	US$ 1,418	
	NetApp, Inc.	-	〃	-	US$ 1,384	N/A	US$ 1,384	
	Truist Financial Corporation	-	〃	-	US$ 1,375	N/A	US$ 1,375	
	Met Tower Global Funding	-	〃	-	US$ 1,368	N/A	US$ 1,368	
	Andrew W. Mellon Foundation, The	-	〃	-	US$ 1,365	N/A	US$ 1,365	
	PACCAR Financial Corp.	-	〃	-	US$ 1,327	N/A	US$ 1,327	
	Entergy Arkansas, LLC	-	〃	-	US$ 1,314	N/A	US$ 1,314	
	Martin Marietta Materials, Inc.	-	〃	-	US$ 1,305	N/A	US$ 1,305	
	State Of Tennessee	-	〃	-	US$ 1,258	N/A	US$ 1,258	
	Lincoln National Corporation	-	〃	-	US$ 1,182	N/A	US$ 1,182	
	State Street Corporation	-	〃	-	US$ 1,167	N/A	US$ 1,167	
	IBERDROLA INTL BV	-	〃	-	US$ 1,140	N/A	US$ 1,140	
	The Curators of the University of Missouri	-	〃	-	US$ 1,123	N/A	US$ 1,123	
	Glencore Funding LLC	-	〃	-	US$ 1,118	N/A	US$ 1,118	
	Enterprise Products Operating LLC	-	〃	-	US$ 1,110	N/A	US$ 1,110	
	Foxconn (Far East) Limited	-	〃	-	US$ 1,109	N/A	US$ 1,109	
	The Cleveland Electric Illuminating Company	-	〃	-	US$ 1,103	N/A	US$ 1,103	
	Baker Hughes Holdings LLC	-	〃	-	US$ 1,079	N/A	US$ 1,079	
	Sinopec Group Overseas Development (2014) Ltd.	-	〃	-	US$ 1,068	N/A	US$ 1,068	
	BBVA México, S.A., Institución de Banca Múltiple, Grupo Financiero BBVA México	-	〃	-	US$ 1,063	N/A	US$ 1,063	
	Brighthouse Financial Global Funding	-	〃	-	US$ 1,060	N/A	US$ 1,060	
	Pricoa Global Funding I	-	〃	-	US$ 1,050	N/A	US$ 1,050	
	Kansas City Southern	-	〃	-	US$ 1,047	N/A	US$ 1,047	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	DH Europe Finance II S.a.r.l.	-	Financial assets at fair value through other comprehensive income	-	US$ 1,038	N/A	US$ 1,038	
	Baltimore Gas and Electric Company	-	〃	-	US$ 1,030	N/A	US$ 1,030	
	Entergy Mississippi, LLC	-	〃	-	US$ 1,023	N/A	US$ 1,023	
	Loews Corporation	-	〃	-	US$ 1,021	N/A	US$ 1,021	
	Denver City & County Housing Authority	-	〃	-	US$ 1,019	N/A	US$ 1,019	
	MassMutual Global Funding II	-	〃	-	US$ 1,018	N/A	US$ 1,018	
	Texas Eastern Transmission, LP	-	〃	-	US$ 1,011	N/A	US$ 1,011	
	Kaiser Foundation Hospitals	-	〃	-	US$ 1,008	N/A	US$ 1,008	
	Board Of Regents State Of Iowa	-	〃	-	US$ 978	N/A	US$ 978	
	National Rural Utilities Cooperative Finance Corporation	-	〃	-	US$ 974	N/A	US$ 974	
	Aflac Incorporated	-	〃	-	US$ 945	N/A	US$ 945	
	QNB Finance Ltd.	-	〃	-	US$ 930	N/A	US$ 930	
	Unilever Capital Corporation	-	〃	-	US$ 930	N/A	US$ 930	
	Mitsubishi HC Capital Inc.	-	〃	-	US$ 910	N/A	US$ 910	
	BHP Billiton Finance (USA) Limited	-	〃	-	US$ 903	N/A	US$ 903	
	CubeSmart, L.P.	-	〃	-	US$ 889	N/A	US$ 889	
	KeyBank National Association	-	〃	-	US$ 871	N/A	US$ 871	
	Palm Beach County, Florida	-	〃	-	US$ 844	N/A	US$ 844	
	TransCanada PipeLines Limited	-	〃	-	US$ 841	N/A	US$ 841	
	Sinopec Capital (2013) Ltd.	-	〃	-	US$ 820	N/A	US$ 820	
	Aetna Inc.	-	〃	-	US$ 815	N/A	US$ 815	
	The Walt Disney Company	-	〃	-	US$ 814	N/A	US$ 814	
	Niagara Mohawk Power Corporation	-	〃	-	US$ 811	N/A	US$ 811	
	Oregon Health & Science University	-	〃	-	US$ 808	N/A	US$ 808	
	Visa Inc.	-	〃	-	US$ 805	N/A	US$ 805	
	Crédit Agricole S.A.	-	〃	-	US$ 790	N/A	US$ 790	
	Southern Power Company	-	〃	-	US$ 787	N/A	US$ 787	
	MASCO CORP	-	〃	-	US$ 771	N/A	US$ 771	
	Sky Limited	-	〃	-	US$ 745	N/A	US$ 745	
	Canadian Natural Resources Limited	-	〃	-	US$ 734	N/A	US$ 734	
	Hyundai Capital Services, Inc.	-	〃	-	US$ 731	N/A	US$ 731	
	Warner Media, LLC	-	〃	-	US$ 728	N/A	US$ 728	
	Southern California Gas Company	-	〃	-	US$ 726	N/A	US$ 726	
	Sodexo, Inc.	-	〃	-	US$ 717	N/A	US$ 717	
	Sinopec Group Overseas Development (2017) Limited	-	〃	-	US$ 707	N/A	US$ 707	
	Norsk Hydro ASA	-	〃	-	US$ 688	N/A	US$ 688	
	Abbott Laboratories	-	〃	-	US$ 679	N/A	US$ 679	
	Stryker Corporation	-	〃	-	US$ 670	N/A	US$ 670	
	State Of Washington	-	〃	-	US$ 654	N/A	US$ 654	
	Bell Canada, Inc.	-	〃	-	US$ 646	N/A	US$ 646	
	Republic Services, Inc.	-	〃	-	US$ 621	N/A	US$ 621	
	Florida Hurricane Catastrophe Fund Finance Corporation	-	〃	-	US$ 621	N/A	US$ 621	
	QUALCOMM Incorporated	-	〃	-	US$ 618	N/A	US$ 618	
	UBS AG (LONDON BRANCH)	-	〃	-	US$ 616	N/A	US$ 616	
	Intact U.S. Holdings Inc.	-	〃	-	US$ 612	N/A	US$ 612	
	American Water Capital Corp.	-	〃	-	US$ 608	N/A	US$ 608	
	Sinopec Group Overseas Development (2012) Ltd.	-	〃	-	US$ 606	N/A	US$ 606	
	Port of Morrow	-	〃	-	US$ 592	N/A	US$ 592	
	Dormitory Authority of the State of New York	-	〃	-	US$ 584	N/A	US$ 584	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Arizona Public Service Company	-	Financial assets at fair value through other comprehensive income	-	US$ 576	N/A	US$ 576	
	Duke Energy Progress, LLC	-	〃	-	US$ 571	N/A	US$ 571	
	Shell International Finance B.V.	-	〃	-	US$ 563	N/A	US$ 563	
	Fifth Third Bank, National Association	-	〃	-	US$ 556	N/A	US$ 556	
	State of Hawaii	-	〃	-	US$ 540	N/A	US$ 540	
	United Parcel Service, Inc.	-	〃	-	US$ 539	N/A	US$ 539	
	Trane Technologies Luxembourg Finance S.A.	-	〃	-	US$ 530	N/A	US$ 530	
	Ecolab Inc.	-	〃	-	US$ 526	N/A	US$ 526	
	TTX Company	-	〃	-	US$ 510	N/A	US$ 510	
	Altria Group, Inc.	-	〃	-	US$ 506	N/A	US$ 506	
	Simon Property Group, L.P.	-	〃	-	US$ 506	N/A	US$ 506	
	174 Power Global Corporation	-	〃	-	US$ 504	N/A	US$ 504	
	Commonwealth Bank of Australia	-	〃	-	US$ 501	N/A	US$ 501	
	DENSO Corporation	-	〃	-	US$ 488	N/A	US$ 488	
	Brazos Higher Education Authority Inc	-	〃	-	US$ 462	N/A	US$ 462	
	Target Corporation	-	〃	-	US$ 437	N/A	US$ 437	
	MUFG Union Bank, National Association	-	〃	-	US$ 430	N/A	US$ 430	
	PayPal Holdings, Inc.	-	〃	-	US$ 429	N/A	US$ 429	
	University of Massachusetts Building Authority	-	〃	-	US$ 425	N/A	US$ 425	
	Sierra Pacific Power Company	-	〃	-	US$ 416	N/A	US$ 416	
	McKesson Corporation	-	〃	-	US$ 414	N/A	US$ 414	
	Comerica Bank	-	〃	-	US$ 413	N/A	US$ 413	
	Boston Properties Limited Partnership	-	〃	-	US$ 411	N/A	US$ 411	
	Entergy Corporation	-	〃	-	US$ 411	N/A	US$ 411	
	Banco del Estado de Chile	-	〃	-	US$ 408	N/A	US$ 408	
	Komatsu Finance America, Inc.	-	〃	-	US$ 404	N/A	US$ 404	
	Honeywell International Inc.	-	〃	-	US$ 401	N/A	US$ 401	
	Duke Energy Corporation	-	〃	-	US$ 394	N/A	US$ 394	
	The Norinchukin Bank	-	〃	-	US$ 394	N/A	US$ 394	
	PepsiCo, Inc.	-	〃	-	US$ 387	N/A	US$ 387	
	StanCorp Financial Group Inc.	-	〃	-	US$ 374	N/A	US$ 374	
	Entergy Louisiana, LLC	-	〃	-	US$ 372	N/A	US$ 372	
	Principal Financial Group, Inc.	-	〃	-	US$ 360	N/A	US$ 360	
	First Republic Bank	-	〃	-	US$ 354	N/A	US$ 354	
	Pernod Ricard SA	-	〃	-	US$ 352	N/A	US$ 352	
	Coöperatieve Rabobank U.A., New York Branch	-	〃	-	US$ 345	N/A	US$ 345	
	Amgen Inc.	-	〃	-	US$ 337	N/A	US$ 337	
	Mid-America Apartments, L.P.	-	〃	-	US$ 328	N/A	US$ 328	
	The Allstate Corporation	-	〃	-	US$ 321	N/A	US$ 321	
	BP Capital Markets p.l.c.	-	〃	-	US$ 316	N/A	US$ 316	
	TotalEnergies Capital International	-	〃	-	US$ 310	N/A	US$ 310	
	Philip Morris International Inc.	-	〃	-	US$ 304	N/A	US$ 304	
	BOC Aviation (USA) Corporation	-	〃	-	US$ 300	N/A	US$ 300	
	Alabama State Federal Aid Highway Finance Authority	-	〃	-	US$ 298	N/A	US$ 298	
	salesforce.com, inc.	-	〃	-	US$ 297	N/A	US$ 297	
	Aon Corporation	-	〃	-	US$ 294	N/A	US$ 294	
	QatarEnergy	-	〃	-	US$ 294	N/A	US$ 294	
	Johnson Controls International plc	-	〃	-	US$ 290	N/A	US$ 290	
	Mondelez International, Inc.	-	〃	-	US$ 275	N/A	US$ 275	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Southern Natural Gas Company, L.L.C.	-	Financial assets at fair value through other comprehensive income	-	US$ 274	N/A	US$ 274	
	Equitable Holdings, Inc.	-	〃	-	US$ 253	N/A	US$ 253	
	The Huntington National Bank	-	〃	-	US$ 253	N/A	US$ 253	
	Sales Tax Securitization Corporation Of Chicago	-	〃	-	US$ 253	N/A	US$ 253	
	Capital One Bank (USA), National Association	-	〃	-	US$ 250	N/A	US$ 250	
	E. I. du Pont de Nemours and Company	-	〃	-	US$ 247	N/A	US$ 247	
	Waste Management, Inc.	-	〃	-	US$ 243	N/A	US$ 243	
	Nasdaq, Inc.	-	〃	-	US$ 220	N/A	US$ 220	
	Children's Hospital Of Orange County	-	〃	-	US$ 219	N/A	US$ 219	
	The Pennsylvania State University	-	〃	-	US$ 212	N/A	US$ 212	
	Deere & Company	-	〃	-	US$ 209	N/A	US$ 209	
	Suncor Energy Inc.	-	〃	-	US$ 205	N/A	US$ 205	
	Oregon Education Districts	-	〃	-	US$ 204	N/A	US$ 204	
	Riverside County Infrastructure Financing Authority	-	〃	-	US$ 204	N/A	US$ 204	
	Los Angeles Department of Water and Power, California	-	〃	-	US$ 203	N/A	US$ 203	
	Saudi Arabian Oil Company	-	〃	-	US$ 200	N/A	US$ 200	
	NongHyup Bank	-	〃	-	US$ 198	N/A	US$ 198	
	San Francisco Public Utilities Commission	-	〃	-	US$ 187	N/A	US$ 187	
	Nucor Corporation	-	〃	-	US$ 182	N/A	US$ 182	
	Hoover Alabama Board Of Education	-	〃	-	US$ 179	N/A	US$ 179	
	Starbucks Corporation	-	〃	-	US$ 174	N/A	US$ 174	
	The New York State Urban Development Corporation	-	〃	-	US$ 146	N/A	US$ 146	
	Electricité de France S.A.	-	〃	-	US$ 107	N/A	US$ 107	
	Beth Israel Deaconess Medical Center, Inc.	-	〃	-	US$ 100	N/A	US$ 100	
	Municipal Improvement Corporation of Los Angeles	-	〃	-	US$ 80	N/A	US$ 80	
	Pima County, Arizona	-	〃	-	US$ 79	N/A	US$ 79	
	State of Wisconsin	-	〃	-	US$ 64	N/A	US$ 64	
	Huntington Beach California	-	〃	-	US$ 50	N/A	US$ 50	
	City of Worcester, MA	-	〃	-	US$ 30	N/A	US$ 30	
	Nueces County	-	〃	-	US$ 25	N/A	US$ 25	
	Citigroup Global Markets Inc.	-	Financial assets at amortized cost	-	US$ 99,968	N/A	US$ 99,742	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 51,347	N/A	US$ 51,471	
	Wells Fargo & Company	-	〃	-	US$ 30,399	N/A	US$ 30,883	
	JPMorgan Chase & Co.	-	〃	-	US$ 10,054	N/A	US$ 10,068	
	Government bond							
	United States Department of The Treasury	-	Financial assets at fair value through other comprehensive income	-	US$ 768,483	N/A	US$ 768,483	
	Emirate of Abu Dhabi	-	〃	-	US$ 1,495	N/A	US$ 1,495	
	Qatar	-	〃	-	US$ 1,352	N/A	US$ 1,352	
	Agency bonds/Agency mortgage-backed securities							
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	-	Financial assets at fair value through other comprehensive income	-	US$ 595,794	N/A	US$ 595,794	
	Government National Mortgage Association	-	〃	-	US$ 309,985	N/A	US$ 309,985	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 253,075	N/A	US$ 253,075	
	Asset-backed securities							
	Hyundai Auto Receivables Trust 2021-C	-	Financial assets at fair value through other comprehensive income	-	US$ 10,922	N/A	US$ 10,922	
	JPMBB Commercial Mortgage Securities Trust 2014-C24	-	〃	-	US$ 10,326	N/A	US$ 10,326	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Wells Fargo Commercial Mortgage Trust 2016-Bnk1	-	Financial assets at fair value through other comprehensive income	-	US$ 10,020	N/A	US$ 10,020	
	Ford Credit Auto Owner Trust 2021-Rev2	-	〃	-	US$ 8,355	N/A	US$ 8,355	
	Ford Credit Auto Owner Trust 2020-REV2	-	〃	-	US$ 7,211	N/A	US$ 7,211	
	Bank 2020-BNK26	-	〃	-	US$ 6,974	N/A	US$ 6,974	
	Morgan Stanley Capital I Trust 2021-L6	-	〃	-	US$ 6,956	N/A	US$ 6,956	
	Morgan Stanley Bank America Merrill Lynch Trust 2016-C30	-	〃	-	US$ 6,898	N/A	US$ 6,898	
	Bank 2017-Bnk6	-	〃	-	US$ 6,310	N/A	US$ 6,310	
	Benchmark 2019-B11 Mortgage Trust	-	〃	-	US$ 6,297	N/A	US$ 6,297	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	〃	-	US$ 6,131	N/A	US$ 6,131	
	GM Financial Consumer Automobile Receivables Trust 2021-4	-	〃	-	US$ 5,807	N/A	US$ 5,807	
	Citigroup Commercial Mortgage Trust 2014-GC21	-	〃	-	US$ 5,760	N/A	US$ 5,760	
	Hudson Yards 2016-10HY Mortgage Trust	-	〃	-	US$ 5,697	N/A	US$ 5,697	
	Citigroup Commercial Mortgage Trust 2021-PRM2	-	〃	-	US$ 5,603	N/A	US$ 5,603	
	Wells Fargo Commercial Mortgage Trust 2021-C59	-	〃	-	US$ 5,568	N/A	US$ 5,568	
	BBCMS 2018-Tall Mortgage Trust	-	〃	-	US$ 5,438	N/A	US$ 5,438	
	CSAIL 2018-CX11	-	〃	-	US$ 5,392	N/A	US$ 5,392	
	WFRBS Commercial Mortgage Trust 2013-C13	-	〃	-	US$ 5,347	N/A	US$ 5,347	
	UBS-Barclays Commercial Mortgage Trust 2012-C2	-	〃	-	US$ 5,242	N/A	US$ 5,242	
	GM Financial Revolving Receivables Trust 2021-1	-	〃	-	US$ 4,910	N/A	US$ 4,910	
	Morgan Stanley Bank America Merrill Lynch Trust 2013-C10	-	〃	-	US$ 4,870	N/A	US$ 4,870	
	Commerce 2015-CCRE24 Mortgage Trust	-	〃	-	US$ 4,830	N/A	US$ 4,830	
	MRCD 2019-Prkc Mortgage Trust	-	〃	-	US$ 4,749	N/A	US$ 4,749	
	Bank 2017 - BNK7	-	〃	-	US$ 4,568	N/A	US$ 4,568	
	Honda Auto Receivables 2021 - 4 Owner Trust	-	〃	-	US$ 4,548	N/A	US$ 4,548	
	Bank 2019-Bnk22	-	〃	-	US$ 4,142	N/A	US$ 4,142	
	JPMCC 2017-JP7	-	〃	-	US$ 4,120	N/A	US$ 4,120	
	BANK 2017-BNK5	-	〃	-	US$ 4,102	N/A	US$ 4,102	
	Bank 2019-Bnk17	-	〃	-	US$ 4,100	N/A	US$ 4,100	
	Msbam 2016-C29	-	〃	-	US$ 3,840	N/A	US$ 3,840	
	Msbam 2016-C31	-	〃	-	US$ 3,692	N/A	US$ 3,692	
	J.P. Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	-	〃	-	US$ 3,684	N/A	US$ 3,684	
	UBS Barclays Commercial Mortgage Trust 2013-C6	-	〃	-	US$ 3,169	N/A	US$ 3,169	
	WFRBS Commercial Mortgage Trust 2014-C25	-	〃	-	US$ 3,157	N/A	US$ 3,157	
	GS Mortgage Securities Trust 2015-GC32	-	〃	-	US$ 3,140	N/A	US$ 3,140	
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	〃	-	US$ 3,040	N/A	US$ 3,040	
	GS Mortgage Securities Corporation Trust 2018-RIVR	-	〃	-	US$ 2,973	N/A	US$ 2,973	
	UBS Commercial Mortgage Trust 2018-C10	-	〃	-	US$ 2,973	N/A	US$ 2,973	
	Sreit Commercial Mortgage Trust 2021-Mfp	-	〃	-	US$ 2,886	N/A	US$ 2,886	
	Benchmark 2018-B3 Commercial Mortgage Trust	-	〃	-	US$ 2,882	N/A	US$ 2,882	
	JPMDB 2017-C7	-	〃	-	US$ 2,870	N/A	US$ 2,870	
	Hyundai Auto Receivables Trust 2018-A	-	〃	-	US$ 2,867	N/A	US$ 2,867	
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	〃	-	US$ 2,762	N/A	US$ 2,762	
	GS Mortgage Securities Trust 2013-GCJ12	-	〃	-	US$ 2,657	N/A	US$ 2,657	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C7	-	〃	-	US$ 2,633	N/A	US$ 2,633	
	Ford Credit Auto Owner Trust 2020-Rev1	-	〃	-	US$ 2,544	N/A	US$ 2,544	
	Wells Fargo Commercial Mortgage Trust 2020-C55	-	〃	-	US$ 2,498	N/A	US$ 2,498	
	UBS-Barclays Commercial Mortgage Trust 2012-C3	-	〃	-	US$ 2,405	N/A	US$ 2,405	
	Citigroup Commercial Mortgage Trust 2015-P1	-	〃	-	US$ 2,400	N/A	US$ 2,400	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	BBCMS Mortgage Trust 2020-C8	-	Financial assets at fair value through other comprehensive income	-	US$ 2,383	N/A	US$ 2,383	
	Bank 2021-bnk33	-	〃	-	US$ 2,371	N/A	US$ 2,371	
	Dolp Trust 2021-NYC	-	〃	-	US$ 2,304	N/A	US$ 2,304	
	Mhc Commercial Mortgage Trust 2021-Mhc	-	〃	-	US$ 2,285	N/A	US$ 2,285	
	Citigroup Commercial Mortgage Trust 2015-GC27	-	〃	-	US$ 2,249	N/A	US$ 2,249	
	Morgan Stanley Capital I Trust	-	〃	-	US$ 2,242	N/A	US$ 2,242	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	-	〃	-	US$ 2,110	N/A	US$ 2,110	
	Commerce 2013-CCRE12 Mortgage Trust	-	〃	-	US$ 2,090	N/A	US$ 2,090	
	UBS Commercial Mortgage Trust 2018-C11	-	〃	-	US$ 2,089	N/A	US$ 2,089	
	Morgan Stanley Capital I Trust 2018-H3	-	〃	-	US$ 2,077	N/A	US$ 2,077	
	Benchmark 2018-B4 Mortgage Trust	-	〃	-	US$ 2,068	N/A	US$ 2,068	
	CGCMT 2017-P8 Mortgage Trust	-	〃	-	US$ 2,040	N/A	US$ 2,040	
	Wells Fargo Commercial Mortgage Trust 2015-C30	-	〃	-	US$ 1,716	N/A	US$ 1,716	
	Morgan Stanley Capital I Trust 2021-L5	-	〃	-	US$ 1,651	N/A	US$ 1,651	
	Wells Fargo Commercial Mortgage Trust 2018-C44	-	〃	-	US$ 1,633	N/A	US$ 1,633	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	-	〃	-	US$ 1,568	N/A	US$ 1,568	
	COMM 2020-CBM Mortgage Trust	-	〃	-	US$ 1,556	N/A	US$ 1,556	
	JPMBB Commercial Mortgage Securities Trust 2013-C12	-	〃	-	US$ 1,517	N/A	US$ 1,517	
	Wells Fargo Commercial Mortgage Trust 2015-C29	-	〃	-	US$ 1,364	N/A	US$ 1,364	
	WFRBS Commercial Mortgage Trust 2013-UBS1	-	〃	-	US$ 1,309	N/A	US$ 1,309	
	Toyota Auto Receivables 2018-D Owner Trust	-	〃	-	US$ 1,302	N/A	US$ 1,302	
	Dbgs 2018-Biod Mortgage Trust	-	〃	-	US$ 1,299	N/A	US$ 1,299	
	Honda Auto Receivables 2021-2 Owner Trust	-	〃	-	US$ 1,288	N/A	US$ 1,288	
	Toyota Auto Receivables 2021-D Owner Trust	-	〃	-	US$ 1,192	N/A	US$ 1,192	
	Wells Fargo Commercial Mortgage Trust 2012-LC5	-	〃	-	US$ 1,153	N/A	US$ 1,153	
	Morgan Stanley Capital I Trust 2015 - UBS8	-	〃	-	US$ 1,071	N/A	US$ 1,071	
	Commerce 2014-Ccre17 Mortgage Trust	-	〃	-	US$ 1,048	N/A	US$ 1,048	
	WFRBSCommercial Mortgage Trust 2013-C17	-	〃	-	US$ 1,010	N/A	US$ 1,010	
	Citigroup Commercial Mortgage Trust 2013-GCJ11	-	〃	-	US$ 958	N/A	US$ 958	
	GS Mortgage Securities Trust 2014-GC22	-	〃	-	US$ 940	N/A	US$ 940	
	COMM 2013-LC6 Mortgage Trust	-	〃	-	US$ 927	N/A	US$ 927	
	COMM 2012-CCRE5 Mortgage Trust	-	〃	-	US$ 917	N/A	US$ 917	
	Morgan Stanley Bank Of America Merrill Lynch Trust 2013-C13	-	〃	-	US$ 914	N/A	US$ 914	
	Benchmark 2019-B14 Mortgage Trust	-	〃	-	US$ 909	N/A	US$ 909	
	Morgan Stanley Capital I Trust 2019-H6	-	〃	-	US$ 890	N/A	US$ 890	
	BX Trust 2021-BXMF	-	〃	-	US$ 843	N/A	US$ 843	
	GS Mortgage Securities Trust 2019-GSA1	-	〃	-	US$ 839	N/A	US$ 839	
	280 Park Avenue Trust 2017 - 280P	-	〃	-	US$ 829	N/A	US$ 829	
	GS Mortgage Securities Trust 2014-GC24	-	〃	-	US$ 825	N/A	US$ 825	
	Elp Commercial Mortgage Trust 2021-Elp	-	〃	-	US$ 795	N/A	US$ 795	
	Bx 2021-21M Mortgage Trust	-	〃	-	US$ 794	N/A	US$ 794	
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	〃	-	US$ 776	N/A	US$ 776	
	Benchmark 2019-B9 Mortgage Trust	-	〃	-	US$ 709	N/A	US$ 709	
	Bbcms Mortgage Trust 2017-C1	-	〃	-	US$ 698	N/A	US$ 698	
	JPMBB Commercial Mortgage Securities Trust 2014-C19	-	〃	-	US$ 663	N/A	US$ 663	
	Benchmark 2019-B15 Mortgage Trust	-	〃	-	US$ 642	N/A	US$ 642	
	Morgan Stanley Bank Of America Merrill Lynch Trust 2013-C12	-	〃	-	US$ 639	N/A	US$ 639	
	CF 2019-CF1 Mortgage Trust	-	〃	-	US$ 609	N/A	US$ 609	
	Gs Mortgage Securities Corporation Trust 2020-Uptn	-	〃	-	US$ 602	N/A	US$ 602	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Equs 2021-Eqaz Mortgage Trust	-	Financial assets at fair value through other comprehensive income	-	US$ 597	N/A	US$ 597	
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	〃	-	US$ 581	N/A	US$ 581	
	Bank 2019-BNK23	-	〃	-	US$ 579	N/A	US$ 579	
	Morgan Stanley Capital I Trust 2019-H7	-	〃	-	US$ 568	N/A	US$ 568	
	Wells Fargo Commercial Mortgage Trust 2015-NXS3	-	〃	-	US$ 555	N/A	US$ 555	
	Bx Commercial Mortgage Trust 2021-CIP	-	〃	-	US$ 550	N/A	US$ 550	
	Citigroup Commercial Mortgage Trust 2018-C5	-	〃	-	US$ 545	N/A	US$ 545	
	Citigroup Commercial Mortgage Trust 2014-GC23	-	〃	-	US$ 522	N/A	US$ 522	
	COMM 2015-CCRE22 Mortgage Trust	-	〃	-	US$ 464	N/A	US$ 464	
	JPMCC 2015 - JP1	-	〃	-	US$ 382	N/A	US$ 382	
	JPMDB Commercial Mortgage Securities Trust 2019-COR6	-	〃	-	US$ 374	N/A	US$ 374	
	UBS Barclays Commercial Mortgage Trust 2013-C5	-	〃	-	US$ 364	N/A	US$ 364	
	Citigroup Commercial Mortgage Trust 2014-GC19	-	〃	-	US$ 287	N/A	US$ 287	
	GS Mortgage Securities Trust 2014-GC26	-	〃	-	US$ 275	N/A	US$ 275	
	Citigroup Commercial Mortgage Trust 2016-C3	-	〃	-	US$ 243	N/A	US$ 243	
	Wells Fargo Commercial Mortgage Trust 2016-C36	-	〃	-	US$ 235	N/A	US$ 235	
	Citigroup Commercial Mortgage Trust 2015-GC35	-	〃	-	US$ 216	N/A	US$ 216	
	Ford Credit Auto Owner Trust 2019-A	-	〃	-	US$ 152	N/A	US$ 152	
	Bank 2020-BNK28	-	〃	-	US$ 132	N/A	US$ 132	
	COMM 2013-CCRE8 Mortgage Trust	-	〃	-	US$ 122	N/A	US$ 122	
	COMM 2015-DC1 Mortgage Trust	-	〃	-	US$ 109	N/A	US$ 109	
	BBCMS Mortgage Trust 2020-C7	-	〃	-	US$ 91	N/A	US$ 91	
	Wells Fargo Commercial Mortgage Trust 2015-NXS1	-	〃	-	US$ 36	N/A	US$ 36	
	Non-publicly traded equity investments							
	Primavera Capital Fund II L.P.	-	Financial assets at fair value through other comprehensive income	-	US$ 89,495	4	US$ 89,495	
VTAF II	Non-publicly traded equity investments							
	Aether Systems, Inc.	-	Financial assets at fair value through other comprehensive income	1,085	US$ 392	20	US$ 392	
	5V Technologies, Inc.	-	〃	4	-	-	-	
	Publicly traded stocks							
	Sentelic Corporation	-	Financial assets at fair value through other comprehensive income	1,019	US$ 2,954	3	US$ 2,954	
VTAF III	Non-publicly traded equity investments							
	LiquidLeds Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US$ 800	14	US$ 800	
	Neoconix, Inc.	-	〃	4,147	US$ 174	-	US$ 174	
Growth Fund	Non-publicly traded equity investments							
	Astera Labs, Inc.	-	Financial assets at fair value through other comprehensive income	637	US$ 2,142	-	US$ 2,142	
	CNEX Labs, Inc.	-	〃	24	US$ 214	-	US$ 214	
	Publicly traded stocks							
	Marvell Technology Group Ltd.	-	Financial assets at fair value through other comprehensive income	45	US$ 3,903	-	US$ 3,903	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
Emerging Fund	Non-publicly traded equity investments							
	Credo Technology Group Holding Ltd.	-	Financial assets at fair value through other comprehensive income	861	US$ 5,000	1	US$ 5,000	
	Astera Labs, Inc.	-	〃	1,487	US$ 5,000	1	US$ 5,000	

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES ACQUIRED AND DISPOSED OF AT COSTS OR PRICES OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC	Non-publicly traded equity investments													
	VisEra Tech	Investments accounted for using equity method	19 institutional investors, including: GIC, Capital Group, Fidelity International, Cathay Life Insurance Co., Ltd., Fubon Life Insurance Co., Ltd., Yuanta Securities, KGI Securities and Securities and Futures Investors Protection Center etc.	-	253,120	$ 6,363,099	-	$ -	39,501	$ 9,451,798	$ 1,045,516	Note 2	213,619	$ 6,521,231
	TSMC Arizona	〃	-	-	30	842,745	740	20,787,702	-	-	-	-	770	16,667,696
	JASM	〃	-	-	-	-	58	1,416,921	-	-	-	-	58	1,383,554
TSMC Partners	Non-publicly traded equity investments													
	Inpria Corporation	Financial assets at fair value through other comprehensive income	-	-	1,778	US$ 3,600	-	US$ -	1,778	US$ 17,146	US$ 4,000	US$ 13,146	-	US$ -
TSMC Global	Corporate bond													
	Bank of America Corporation	Financial assets at fair value through other comprehensive income	-	-	-	US$ 58,724	-	US$ 36,173	-	US$ 18,692	US$ 18,526	US$ 166	-	US$ 74,188
	Citigroup Inc.	〃	-	-	-	US$ 41,827	-	US$ 24,458	-	US$ 18,235	US$ 18,033	US$ 202	-	US$ 46,836
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 29,809	-	US$ 24,600	-	US$ 7,381	US$ 7,376	US$ 5	-	US$ 46,380
	JPMorgan Chase & Co.	〃	-	-	-	US$ 29,759	-	US$ 16,303	-	US$ 3,333	US$ 3,303	US$ 30	-	US$ 41,525
	AbbVie Inc.	〃	-	-	-	US$ 33,716	-	US$ 13,933	-	US$ 8,756	US$ 7,977	US$ 779	-	US$ 37,531

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	Wells Fargo & Company	Financial assets at fair value through other comprehensive income	-	-	-	US$ 26,074	-	US$ 20,040	-	US$ 10,192	US$ 9,865	US$ 327	-	US$ 34,978
	Mitsubishi UFJ Financial Group, Inc.	〃	-	-	-	US$ 34,946	-	US$ 8,784	-	US$ 10,906	US$ 10,709	US$ 197	-	US$ 31,881
	HSBC Holdings plc	〃	-	-	-	US$ 16,113	-	US$ 15,004	-	US$ 3,508	US$ 3,365	US$ 143	-	US$ 26,960
	BNP Paribas SA	〃	-	-	-	US$ 13,202	-	US$ 14,494	-	US$ 7,154	US$ 6,882	US$ 272	-	US$ 19,983
	Oracle Corporation	〃	-	-	-	US$ 7,822	-	US$ 13,979	-	US$ 2,000	US$ 2,000	US$ -	-	US$ 19,448
	Morgan Stanley	〃	-	-	-	US$ -	-	US$ 18,029	-	US$ -	US$ -	US$ -	-	US$ 17,917
	Morgan Stanley	〃	-	-	-	US$ -	-	US$ 17,210	-	US$ -	US$ -	US$ -	-	US$ 17,013
	Mizuho Financial Group, Inc.	〃	-	-	-	US$ 20,795	-	US$ 6,233	-	US$ 12,671	US$ 12,556	US$ 115	-	US$ 13,999
	NTT Finance Corporation	〃	-	-	-	US$ -	-	US$ 14,780	-	US$ 1,941	US$ 1,945	US$ (4)	-	US$ 12,546
	Morgan Stanley	〃	-	-	-	US$ 23,053	-	US$ -	-	US$ 11,390	US$ 11,125	US$ 265	-	US$ 11,096
	Verizon Communications Inc.	〃	-	-	-	US$ 10,558	-	US$ 16,617	-	US$ 16,037	US$ 15,940	US$ 97	-	US$ 10,971
	Bristol-Myers Squibb Company	〃	-	-	-	US$ 21,090	-	US$ -	-	US$ 11,028	US$ 10,613	US$ 415	-	US$ 9,412
	AstraZeneca Finance LLC	〃	-	-	-	US$ -	-	US$ 10,933	-	US$ 2,703	US$ 2,716	US$ (13)	-	US$ 8,123
	BP Capital Markets America, Inc.	〃	-	-	-	US$ 15,621	-	US$ -	-	US$ 12,848	US$ 12,545	US$ 303	-	US$ 2,457
	NextEra Energy Capital Holdings, Inc.	〃	-	-	-	US$ 9,527	-	US$ 4,985	-	US$ 12,258	US$ 11,963	US$ 295	-	US$ 2,000
	Citigroup Global Markets Inc.	Financial assets at amortized cost	-	-	-	US$ 99,965	-	US$ 100,000	-	US$ 100,000	US$ 100,000	US$ -	-	US$ 99,968
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 14,930	-	US$ 36,455	-	US$ -	US$ -	US$ -	-	US$ 51,347
	Wells Fargo & Company	〃	-	-	-	US$ 180,487	-	US$ -	-	US$ 150,000	US$ 150,000	US$ -	-	US$ 30,399
	JPMorgan Chase & Co.	〃	-	-	-	US$ 95,058	-	US$ -	-	US$ 85,000	US$ 85,000	US$ -	-	US$ 10,054
	<u>Government bond</u>													
	United States Department of The Treasury	Financial assets at fair value through other comprehensive income	-	-	-	US$ 182,533	-	US$1,298,345	-	US$ 980,985	US$ 985,925	US$ (4,940)	-	US$ 488,297
	United States Department of The Treasury	〃	-	-	-	US$ 287,012	-	US$ 74,148	-	US$ 107,638	US$ 108,069	US$ (431)	-	US$ 245,475
	United States Department of The Treasury	〃	-	-	-	US$ -	-	US$ 82,290	-	US$ 49,816	US$ 49,811	US$ 5	-	US$ 32,486
	United States Department of The Treasury	〃	-	-	-	US$ 3,073	-	US$ 13,441	-	US$ 14,389	US$ 14,218	US$ 171	-	US$ 2,225
	<u>Agency bonds/Agency mortgage-backed securities</u>													
	Government National Mortgage Association	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	-	US$ 436,640	-	US$ 207,178	US$ 207,916	US$ (738)	-	US$ 226,295
	Federal National Mortgage Association	〃	-	-	-	US$ 96,211	-	US$ 355,027	-	US$ 368,077	US$ 370,120	US$ (2,043)	-	US$ 79,577
	Federal National Mortgage Association	〃	-	-	-	US$ 4,035	-	US$ 895,855	-	US$ 845,383	US$ 845,168	US$ 215	-	US$ 54,626
	Federal National Mortgage Association	〃	-	-	-	US$ 56,510	-	US$ 2,460	-	US$ 14,850	US$ 15,495	US$ (645)	-	US$ 42,003
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 35,786	-	US$ 432	US$ 433	US$ (1)	-	US$ 35,138

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	FEDERAL NATIONAL MORTGAGE ASSOCIATION	Financial assets at fair value through other comprehensive income	-	-	-	US$ 7,969	-	US$ 253,784	-	US$ 233,044	US$ 233,517	US$ (473)	-	US$ 28,206
	Federal National Mortgage Association	〃	-	-	-	US$ 49,027	-	US$1,372,973	-	US$1,393,352	US$1,394,172	US$ (820)	-	US$ 27,725
	Federal National Mortgage Association	〃	-	-	-	US$ -	-	US$ 16,145	-	US$ -	US$ -	US$ -	-	US$ 16,150
	Federal National Mortgage Association	〃	-	-	-	US$ -	-	US$ 366,295	-	US$ 350,795	US$ 350,707	US$ 88	-	US$ 15,541
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 87,563	-	US$ 72,465	US$ 72,543	US$ (78)	-	US$ 14,756
	Government National Mortgage Association	〃	-	-	-	US$ 17,896	-	US$ 498,925	-	US$ 505,785	US$ 506,704	US$ (919)	-	US$ 10,073
	Federal National Mortgage Association	〃	-	-	-	US$ 31,980	-	US$ 184,032	-	US$ 208,832	US$ 208,922	US$ (90)	-	US$ 6,857
	Government National Mortgage Association	〃	-	-	-	US$ 30,307	-	US$ 38,746	-	US$ 61,172	US$ 62,158	US$ (986)	-	US$ 6,462
	Government National Mortgage Association	〃	-	-	-	US$ 9,795	-	US$ 214,076	-	US$ 217,697	US$ 217,835	US$ (138)	-	US$ 6,025
	Government National Mortgage Association	〃	-	-	-	US$ 14,244	-	US$ 391,758	-	US$ 399,817	US$ 400,027	US$ (210)	-	US$ 5,985
	Federal National Mortgage Association	〃	-	-	-	US$ 18,997	-	US$ 2,026	-	US$ 15,566	US$ 15,829	US$ (263)	-	US$ 5,048
	Federal National Mortgage Association	〃	-	-	-	US$ 24,084	-	US$ -	-	US$ 19,973	US$ 19,293	US$ 680	-	US$ 3,923
	Federal National Mortgage Association	〃	-	-	-	US$ 18,019	-	US$ -	-	US$ 13,821	US$ 13,363	US$ 458	-	US$ 3,822
	Government National Mortgage Association	〃	-	-	-	US$ 27,389	-	US$ -	-	US$ 23,510	US$ 23,329	US$ 181	-	US$ 3,202
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ 20,247	-	US$ 23,170	-	US$ 40,219	US$ 40,181	US$ 38	-	US$ 3,001
	Government National Mortgage Association	〃	-	-	-	US$ 24,481	-	US$ -	-	US$ 20,977	US$ 20,571	US$ 406	-	US$ 2,938
	Federal National Mortgage Association	〃	-	-	-	US$ 23,776	-	US$ 3,273	-	US$ 24,212	US$ 23,815	US$ 397	-	US$ 2,616
	Federal National Mortgage Association	〃	-	-	-	US$ 19,673	-	US$ 149,957	-	US$ 167,446	US$ 167,425	US$ 21	-	US$ 2,209
	Government National Mortgage Association	〃	-	-	-	US$ 1,067	-	US$ 30,360	-	US$ 29,604	US$ 29,632	US$ (28)	-	US$ 1,791
	Federal National Mortgage Association	〃	-	-	-	US$ 13,391	-	US$ -	-	US$ 12,337	US$ 12,300	US$ 37	-	US$ 694
	Government National Mortgage Association	〃	-	-	-	US$ 5,381	-	US$ 46,006	-	US$ 50,843	US$ 50,855	US$ (12)	-	US$ 529
	Federal National Mortgage Association	〃	-	-	-	US$ 21,409	-	US$ 162,780	-	US$ 183,757	US$ 183,736	US$ 21	-	US$ 426
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 145,065	-	US$ 145,122	US$ 145,065	US$ 57	-	US$ -
	Government National Mortgage Association	〃	-	-	-	US$ 199,835	-	US$ 82,010	-	US$ 278,349	US$ 280,290	US$ (1,941)	-	US$ -
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 124,232	-	US$ 124,218	US$ 124,232	US$ (14)	-	US$ -

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 2	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	-	US$ 97,498	-	US$ 97,545	US$ 97,498	US$ 47	-	US$ -
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ 11,872	-	US$ -	-	US$ 11,654	US$ 11,120	US$ 534	-	US$ -
	Federal National Mortgage Association	〃	-	-	-	US$ 5,253	-	US$ 11,906	-	US$ 17,015	US$ 17,228	US$ (213)	-	US$ -
	GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 2	〃	-	-	-	US$ -	-	US$ 93,686	-	US$ 93,420	US$ 93,686	US$ (266)	-	US$ -
	Government National Mortgage Association	〃	-	-	-	US$ 18,900	-	US$ 121,784	-	US$ 140,660	US$ 140,610	US$ 50	-	US$ -
	Federal National Mortgage Association	〃	-	-	-	US$ 8,394	-	US$ 89,440	-	US$ 97,826	US$ 97,829	US$ (3)	-	US$ -
	Asset-backed securities													
	Hyundai Auto Receivables Trust 2021-C	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	-	US$ 10,998	-	US$ -	US$ -	US$ -	-	US$ 10,922

Note 1: The ending balance includes the realized gain/loss on equity investment, the amortization of premium/discount on bonds investments and other related adjustment.

Note 2: To facilitate VisEra's IPO in Taiwan, 39,501 thousand common shares of VisEra at a price of NT$240 were sold by TSMC and an increase of NT$8,406,282 thousand in capital surplus was recognized. TSMC's shareholding in VisEra decreased from 87% to 73%. This disposal was accounted for as an equity transaction since the transaction did not change TSMC's control over VisEra.

(Concluded)

TABLE 5

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

ACQUISITION OF INDIVIDUAL REAL ESTATE PROPERTIES AT COSTS OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate	February 09, 2021 (Note)	$ 52,100,000 (Note)	Based on the terms in the purchase order	85 counterparties(Note), including： ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kedge Construction Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Li Jin Engineering Co., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated National Institute of Advanced Industrial Science & Technology								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Ying Pao Technology Inc. Zhao-Cheng Corp.								
	Real estate	April 22, 2021 (Note)	$ 9,500,000 (Note)	Based on the terms in the purchase order	70 counterparties(Note), including： J. Cypress Co., Ltd. L&K Engineering Co., Ltd. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Taiwan Puritic Corp. Uangyih-Tech Industrial Co., Ltd. United Integrated Services Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None
	Real estate	June 09, 2021 (Note)	54,500,000 (Note)	Based on the terms in the purchase order	101 counterparties(Note), including： ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kao Hsin Engineering Co., Ltd. Kedge Construction Co., Ltd. Kinetics Technology Corporation							

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trane Taiwan Distribution Limited Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.							
	Real estate	August 10, 2021 (Note)	$168,000,000 (Note)	Based on the terms in the purchase order	100 counterparties(Note), including： ABB Enterprise Software Inc. ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allied Supreme Corp. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. CTCI Corporation Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Johnson Controls, Inc. Jusun Instruments Co., Ltd. Kao Hsin Engineering Co., Ltd. Kedge Construction Co., Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Lumax International Corp., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated OBR Cooling Towers, Inc. Okland Construction Company, Inc. Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Propersys Corp. Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Puritic Corp. Taiwan Valqua Engineering International, Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				TASA Construction Corporation Techgo Industrial Co., Ltd. Trane Taiwan Distribution Limited Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.								
	Real estate	November 09, 2021 (Note)	$ 55,600,000 (Note)	Based on the terms in the purchase order	122 counterparties(Note), including： ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hsinchu Science Park Bureau, Ministry of Science and Technology Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates							

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kajima Corporation Kao Hsin Engineering Co., Ltd. Kaohsiung City Government Kedge Construction Co., Ltd. Kikuyo-machi Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd.							

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Power Company Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trane Taiwan Distribution Limited Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.								

Note: The disclosures are expected information based on the capital appropriation approved by the Board of Directors (Right-of-use assets are included). The actual information shall be subject to the final purchase order of TSMC.

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

TOTAL PURCHASES FROM OR SALES TO RELATED PARTIES OF AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Transaction Details				Abnormal Transaction		Notes/Accounts Payable or Receivable		Note
			Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)	% to Total	
TSMC	TSMC North America	Subsidiary	Sales	$ 1,040,985,786	66	Net 30 days from invoice date (Note)	-	(Note)	$ 137,956,681	75	
	GUC	Associate	Sales	5,880,085	-	Net 30 days from the end of the month of when invoice is issued	-	-	391,647	-	
	TSMC Nanjing	Subsidiary	Purchases	27,070,065	22	Net 30 days from the end of the month of when invoice is issued	-	-	(2,761,080)	6	
	TSMC China	Subsidiary	Purchases	21,321,353	17	Net 30 days from the end of the month of when invoice is issued	-	-	(1,802,314)	4	
	WaferTech	Indirect subsidiary	Purchases	7,743,263	6	Net 30 days from the end of the month of when invoice is issued	-	-	(732,533)	1	
	SSMC	Associate	Purchases	3,843,482	3	Net 30 days from the end of the month of when invoice is issued	-	-	(349,211)	1	
	VIS	Associate	Purchases	3,726,305	3	Net 30 days from the end of the month of when invoice is issued	-	-	(357,151)	1	
TSMC North America	GUC	Associate of TSMC	Sales	1,825,047 (US$ 65,319)	-	Net 30 days from invoice date	-	-	205,941 (US$ 7,442)	-	
VisEra Tech	Xintec	Associate of TSMC	Sales	750,373	8	Net 60 days from the end of the month of when invoice is issued	-	-	117,488	9	

Note: The tenor is determined by the payment terms granted to its clients by TSMC North America.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue		Amounts Received in Subsequent Period	Allowance for Bad Debts
					Amount	Action Taken		
TSMC	TSMC North America	Subsidiary	$ 142,957,244	42	$ -	-	$ -	$ -
	GUC	Associate	391,647	22	-	-	-	-
TSMC North America	TSMC	Parent company	208,050	Note 2	1,730	-	16,049	-
			(US$ 7,518)		(US$ 63)		(US$ 580)	
	GUC	Associate of TSMC	205,941	26	4,014	-	27,343	-
			(US$ 7,442)		(US$ 145)		(US$ 988)	
TSMC 3DIC	TSMC	Parent company	219,982	Note 2	-	-	-	-
			(JPY 911,277)					
TSMC China	TSMC Nanjing	The same parent company	24,390,011	Note 2	-	-	-	-
			(RMB 5,622,280)					
	TSMC	Parent company	1,802,314	29	-	-	-	-
			(RMB 415,462)					
TSMC Nanjing	TSMC	Parent company	2,761,080	31	-	-	-	-
			(RMB 636,473)					
VisEra Tech	Xintec	Associate of TSMC	117,488	74	-	-	-	-
JASM	TSMC	Parent company	1,389,861	Note 2	-	-	-	-
			(JPY 5,757,500)					
TSMC Technology	TSMC	The ultimate parent of the Company	350,916	Note 2	-	-	-	-
			(US$ 12,680)					
WaferTech	TSMC	The ultimate parent of the Company	732,533	34	-	-	-	-
			(US$ 26,470)					

Note 1: The calculation of turnover days excludes other receivables from related parties.

Note 2: The ending balance is primarily consisted of other receivables, which is not applicable for the calculation of turnover days.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INTERCOMPANY RELATIONSHIPS AND SIGNIFICANT INTERCOMPANY TRANSACTIONS
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars)

No.	Company Name	Counterparty	Nature of Relationship (Note 1)	Intercompany Transactions			
				Financial Statements Item	Amount	Terms (Note 2)	Percentage of Consolidated Net Revenue or Total Assets
0	TSMC	TSMC North America	1	Net revenue from sale of goods	$ 1,040,985,786	-	66%
				Receivables from related parties	137,956,681	-	4%
				Other receivables from related parties	5,000,563	-	-
				Accrued expenses and other current liabilities	20,650,062	-	1%
				Other noncurrent liabilities	127,361,560	-	3%
		TSMC JDC	1	Research and development expenses	359,899	-	-
		JASM	1	Accrued expenses and other current liabilities	1,389,861	-	-
		TSMC Europe	1	Marketing expenses - commission	465,783	-	-
		TSMC China	1	Purchases	21,321,353	-	1%
				Payables to related parties	1,802,314	-	-
		TSMC Nanjing	1	Purchases	27,070,065	-	2%
				Payables to related parties	2,761,080	-	-
		TSMC Technology	1	Research and development expenses	2,813,600	-	-
				Payables to related parties	350,916	-	-
		WaferTech	1	Purchases	7,743,263	-	-
				Payables to related parties	732,533	-	-
1	TSMC China	TSMC Nanjing	3	Other receivables from related parties	24,390,011	-	1%

Note 1: No. 1 represents the transactions from parent company to subsidiary.

No. 3 represents the transactions between subsidiaries.

Note 2: The sales prices and payment terms of intercompany sales are not significantly different from those to third parties. For other intercompany transactions, prices and terms are determined in accordance with mutual agreements.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEES OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2021			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2021 (Foreign Currencies in Thousands)	December 31, 2020 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC	TSMC Global	Tortola, British Virgin Islands	Investment activities	$355,162,309	$355,162,309	11	100	$374,639,406	$ 1,303,742	$ 1,303,742	Subsidiary
	TSMC Partners	Tortola, British Virgin Islands	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities	31,456,130	31,456,130	988,268	100	54,968,185	1,804,174	1,804,174	Subsidiary
	TSMC Arizona	Phoenix, Arizona, U.S.A.	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	21,643,300	855,599	770	100	16,667,696	(4,810,127)	(4,810,127)	Subsidiary
	VIS	Hsin-Chu, Taiwan	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	10,180,677	464,223	28	10,613,127	11,819,588	3,342,414	Associate
	SSMC	Singapore	Manufacturing and sales of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	6,795,699	2,544,371	986,962	Associate
	VisEra Tech	Hsin-Chu, Taiwan	Research, design, development, manufacturing, sales, packaging and test of color filter	5,005,171	5,005,171	213,619	73	6,521,231	2,165,280	1,631,948	Subsidiary
	TSMC North America	San Jose, California, U.S.A	Sales and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	4,871,149	375,611	375,611	Subsidiary
	Xintec	Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	3,046,961	1,877,082	770,202	Associate
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	1,484,683	1,460,149	508,706	Associate
	JASM	Kumamoto, Japan	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	1,416,921	-	58	100	1,383,554	(6,426)	(6,426)	Subsidiary
	TSMC Europe	Amsterdam, the Netherlands	Customer service and supporting activities	15,749	15,749	-	100	509,880	21,875	21,875	Subsidiary
	TSMC JDC	Yokohama, Japan	Engineering support activities	410,680	302,560	15	100	368,144	13,803	13,803	Subsidiary
	VTAF III	Cayman Islands	Investing in technology start-up companies	1,321,594	1,318,846	-	98	300,401	(8,978)	(8,798)	Subsidiary
	Emerging Fund	Cayman Islands	Investing in technology start-up companies	298,618	-	-	99.9	286,205	(10,015)	(10,005)	Subsidiary
	TSMC 3DIC	Yokohama, Japan	Engineering support activities	278,986	-	11	100	270,513	4,197	4,197	Subsidiary
	TSMC Japan	Yokohama, Japan	Customer service and supporting activities	83,760	83,760	6	100	132,411	4,662	4,662	Subsidiary
	VTAF II	Cayman Islands	Investing in technology start-up companies	260,300	260,300	-	98	112,320	(1,073)	(1,052)	Subsidiary
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	80	100	40,857	2,802	2,802	Subsidiary
TSMC Partners	TSMC Development	Delaware, U.S.A	Investing in companies involved in semiconductor manufacturing	16,242,944 (US$ 586,939)	16,242,944 (US$ 586,939)	-	100	30,557,431 (US$1,104,193)	1,521,812 (US$ 54,475)	Note 2	Subsidiary
	TSMC Technology	Delaware, U.S.A	Engineering support activities	395,241 (US$ 14,282)	395,241 (US$ 14,282)	-	100	835,888 (US$ 30,205)	78,921 (US$ 2,821)	Note 2	Subsidiary
	TSMC Canada	Ontario, Canada	Engineering support activities	63,650 (US$ 2,300)	63,650 (US$ 2,300)	2,300	100	278,766 (US$ 10,073)	25,324 (US$ 906)	Note 2	Subsidiary
VTAF III	Growth Fund	Cayman Islands	Investing in technology start-up companies	72,057 (US$ 2,604)	69,289 (US$ 2,504)	-	100	219,604 (US$ 7,935)	(1,217) (US$ (44))	Note 2	Subsidiary
	Mutual-Pak	New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	44,094 (US$ 1,593)	44,094 (US$ 1,593)	4,693	28	22,948 (US$ 829)	(18,466) (US$ (657))	Note 2	Associate

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2021			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2021 (Foreign Currencies in Thousands)	December 31, 2020 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC Development	WaferTech	Washington, U.S.A	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	$ -	$ -	293,637	100	$ 5,153,719 (US$ 186,230)	$ 1,456,072 (US$ 52,123)	Note 2	Subsidiary

Note 1: The share of profits/losses of investee includes the effect of unrealized gross profit on intercompany transactions.

Note 2: The share of profits/losses of the investee company is not reflected herein as such amount is already included in the share of profits/losses of the investor company.

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investee Company	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Accumulated Outflow of Investment from Taiwan as of January 1, 2021 (US$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2021 (US$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of December 31, 2021	Accumulated Inward Remittance of Earnings as of December 31, 2021
					Outflow (US$ in Thousands)	Inflow						
TSMC China	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	$ 18,939,667 (RMB 4,502,080)	Note 1	$ 18,939,667 (US$ 596,000)	$ -	$ -	$ 18,939,667 (US$ 596,000)	$ 8,555,130	100%	$ 8,619,026 (Note 2)	$ 73,470,628	$ -
TSMC Nanjing	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	30,521,412 (RMB 6,650,119)	Note 1	30,521,412 (US$ 1,000,000)	-	-	30,521,412 (US$ 1,000,000)	12,283,446	100%	12,283,460 (Note 2)	46,159,494	-

Accumulated Investment in Mainland China as of December 31, 2021 (US$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US$ in Thousands)	Upper Limit on Investment
$ 49,461,079 (US$ 1,596,000)	$ 119,412,667 (US$ 3,596,000)	$1,302,439,923 (Note 3)

Note 1: TSMC directly invested US$596,000 thousand in TSMC China and US$1,000,000 thousands in TSMC Nanjing.

Note 2: Amount was recognized based on the audited financial statements.

Note 3: The upper limit on investment in mainland China is determined by sixty percent (60%) of the Company's consolidated net worth.

Taiwan Semiconductor Manufacturing Company Limited

INFORMATION ON MAJOR SHAREHOLDERS
DECEMBER 31, 2021

Shareholders (Note)	Shares	
	Total Shares Owned	Ownership Percentage
ADR-Taiwan Semiconductor Manufacturing Company, Ltd.	5,321,212,928	20.52%
National Development Fund, Executive Yuan	1,653,709,980	6.38%

Note: Major shareholders shows the list of all shareholders with ownership of 5 percent or greater.

Taiwan Semiconductor Manufacturing Company Limited

Parent Company Only Financial Statements for the Years Ended December 31, 2021 and 2020 and Independent Auditors' Report

Deloitte.

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INDEPENDENT AUDITORS' REPORT

The Board of Directors and Shareholders
Taiwan Semiconductor Manufacturing Company Limited

Opinion

We have audited the accompanying parent company only financial statements of Taiwan Semiconductor Manufacturing Company Limited (the "Company"), which comprise the parent company only balance sheets as of December 31, 2021 and 2020, and the parent company only statements of comprehensive income, changes in equity and cash flows for the years then ended, and the notes to the parent company only financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying parent company only financial statements present fairly, in all material respects, the accompanying parent company only financial position of the Company as of December 31, 2021 and 2020, and its parent company only financial performance and its parent company only cash flows for the years then ended in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers.

Basis for Opinion

We conducted our audits in accordance with the Regulations Governing Auditing and Attestation of Financial Statements by Certified Public Accountants and auditing standards generally accepted in the Republic of China. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Parent Company Only Financial Statements section of our report. We are independent of the Company in accordance with The Norm of Professional Ethics for Certified Public Accountant of the Republic of China, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the parent company only financial statements for the year ended December 31, 2021. These matters were addressed in the context of our audit of the parent company only financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matter for the Company's parent company only financial statements for the year ended December 31, 2021 is stated as follows:

Property, plant and equipment (PP&E) – commencement of depreciation related to PP&E classified as equipment under installation and construction in progress (EUI/CIP)

Refer to Notes 4, 5 and 12 to the parent company only financial statements.

The Company's evaluation of when to commence depreciation of EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets

to be capable of operating in the intended manner. Changes in these assumptions could have a significant impact on when depreciation is recognized.

Given the subjectivity in determining the date to commence depreciation of EUI/CIP, performing audit procedures to evaluate the reasonableness of the Company's judgments and assumptions required a high degree of auditor judgment. Consequently, the validity of commencement of depreciation related to PP&E classified as EUI/CIP is identified as a key audit matter.

Our audit procedures related to the evaluation of when to commence depreciation of EUI/CIP included the following, among others:

1. We read the Company's policy and understood the criteria used to determine when to commence depreciation.

2. We tested the effectiveness of the controls over the evaluation of when to commence depreciation of EUI/CIP.

3. We sampled the year-end balance of EUI/CIP and performed the following for each selection:

    a. Evaluated whether the selection did not meet the criteria specified by the Company for commencement of depreciation.

    b. Observed the assets and evaluated their status.

4. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation during the year.

5. We sampled and evaluated whether the selection of EUI/CIP met the criteria specified by the Company for commencement of depreciation subsequent to year end.

Responsibilities of Management and Those Charged with Governance for the Parent Company Only Financial Statements

Management is responsible for the preparation and fair presentation of the parent company only financial statements in accordance with the Regulations Governing the Preparation of Financial Reports by Securities Issuers, and for such internal control as management determines is necessary to enable the preparation of parent company only financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the parent company only financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance (including members of the Audit Committee) are responsible for overseeing the Company's financial reporting process.

Auditors' Responsibilities for the Audit of the Parent Company Only Financial Statements

Our objectives are to obtain reasonable assurance about whether the parent company only financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with the auditing standards generally accepted in the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these parent company only financial statements.

As part of an audit in accordance with the auditing standards generally accepted in the Republic of China, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the parent company only financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control.

3. Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

4. Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditors' report to the related disclosures in the parent company only financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditors' report. However, future events or conditions may cause the Company to cease to continue as a going concern.

5. Evaluate the overall presentation, structure and content of the parent company only financial statements, including the disclosures, and whether the parent company only financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

6. Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Company to express an opinion on the parent company only financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the parent company only financial statements for the year ended December 31, 2021 and are therefore the key audit matters. We describe these matters in our auditors' report unless law or regulation precludes public disclosure about the matter or when, in extremely rare circumstances, we determine that a matter should not be communicated in our report because the adverse consequences of doing so would reasonably be expected to outweigh the public interest benefits of such communication.

The engagement partners on the audit resulting in this independent auditors' report are Mei Yen Chiang and Shang Chih Lin.





Deloitte & Touche
Taipei, Taiwan
Republic of China

February 15, 2022

Notice to Readers

The accompanying financial statements are intended only to present the financial position, financial performance and cash flows in accordance with accounting principles and practices generally accepted in the Republic of China and not those of any other jurisdictions. The standards, procedures and practices to audit such financial statements are those generally applied in the Republic of China.

For the convenience of readers, the independent auditors' report and the accompanying financial statements have been translated into English from the original Chinese version prepared and used in the Republic of China. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language independent auditors' report and financial statements shall prevail.

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY BALANCE SHEETS
(In Thousands of New Taiwan Dollars)

	December 31, 2021		December 31, 2020	
	Amount	%	Amount	%
ASSETS				
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	$ 396,294,241	12	$ 303,165,717	11
Financial assets at fair value through profit or loss (Note 7)	145,280	-	2,125,825	-
Notes and accounts receivable, net (Note 9)	45,900,297	2	34,611,115	1
Receivables from related parties (Note 30)	138,352,374	4	101,781,174	4
Other receivables from related parties (Note 30)	5,227,425	-	1,714,334	-
Inventories (Notes 5 and 10)	185,159,848	5	130,298,036	5
Other financial assets	3,861,859	-	1,425,594	-
Other current assets	8,264,613	-	5,827,453	-
Total current assets	783,205,937	23	580,949,248	21
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income	998,400	-	834,830	-
Investments accounted for using equity method (Note 11)	602,642,544	18	564,597,508	21
Property, plant and equipment (Notes 5 and 12)	1,889,970,529	56	1,511,784,556	55
Right-of-use assets (Notes 5 and 13)	30,123,052	1	25,184,827	1
Intangible assets (Notes 5 and 14)	22,910,400	1	21,733,597	1
Deferred income tax assets (Notes 5 and 23)	47,780,990	1	24,678,225	1
Refundable deposits	862,893	-	1,249,552	-
Other noncurrent assets	400	-	2,492,770	-
Total noncurrent assets	2,595,289,208	77	2,152,555,865	79
TOTAL	$ 3,378,495,145	100	$ 2,733,505,113	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans (Notes 15 and 27)	$ 114,921,333	3	$ 175,659,726	7
Financial liabilities at fair value through profit or loss (Note 7)	636,472	-	93,153	-
Accounts payable	41,204,422	1	36,238,637	1
Payables to related parties (Note 30)	7,687,673	-	7,017,623	-
Salary and bonus payable	20,814,434	1	17,478,038	1
Accrued profit sharing bonus to employees and compensation to directors (Note 26)	36,088,986	1	35,262,937	1
Payables to contractors and equipment suppliers	136,212,285	4	156,342,457	6
Cash dividends payable (Note 18)	142,617,093	4	129,651,902	5
Income tax payable (Notes 5 and 23)	58,755,245	2	53,297,025	2
Long-term liabilities - current portion (Notes 16 and 27)	4,400,000	-	2,600,000	-
Accrued expenses and other current liabilities (Notes 5, 13, 19, 27 and 30)	141,495,427	4	66,888,237	2
Total current liabilities	704,833,370	20	680,529,735	25
NONCURRENT LIABILITIES				
Bonds payable (Notes 16 and 27)	307,783,409	9	170,450,745	6
Deferred income tax liabilities (Notes 5 and 23)	1,848,966	-	1,716,367	-
Lease liabilities (Notes 5, 13 and 27)	18,742,323	1	18,480,111	1
Net defined benefit liability (Note 17)	11,036,879	-	11,914,074	1
Guarantee deposits	680,137	-	259,073	-
Others (Notes 19 and 30)	165,283,508	5	497,752	-
Total noncurrent liabilities	505,375,222	15	203,318,122	8
Total liabilities	1,210,208,592	35	883,847,857	33
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 18)	259,303,805	8	259,303,805	9
Capital surplus (Note 18)	64,761,602	2	56,347,243	2
Retained earnings (Note 18)				
Appropriated as legal capital reserve	311,146,899	9	311,146,899	11
Appropriated as special capital reserve	59,304,212	2	42,259,146	2
Unappropriated earnings	1,536,378,550	46	1,235,280,036	45
	1,906,829,661	57	1,588,686,081	58
Others (Note 18)	(62,608,515)	(2)	(54,679,873)	(2)
Total equity	2,168,286,553	65	1,849,657,256	67
TOTAL	$ 3,378,495,145	100	$ 2,733,505,113	100

The accompanying notes are an integral part of the parent company only financial statements.

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2021		2020	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 19 and 30)	$ 1,574,745,881	100	$ 1,314,793,013	100
COST OF REVENUE (Notes 5, 10, 26 and 30)	786,116,844	50	632,788,990	48
GROSS PROFIT	788,629,037	50	682,004,023	52
OPERATING EXPENSES (Notes 5, 26 and 30)				
Research and development	123,417,275	8	108,613,789	8
General and administrative	30,967,600	2	26,312,285	2
Marketing	4,282,882	-	4,359,436	1
Total operating expenses	158,667,757	10	139,285,510	11
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 12, 13 and 26)	(328,444)	-	746,994	-
INCOME FROM OPERATIONS	629,632,836	40	543,465,507	41
NON-OPERATING INCOME AND EXPENSES				
Share of profits of subsidiaries and associates (Note 11)	26,837,174	2	34,902,194	3
Interest income (Note 20)	927,754	-	951,877	-
Other income	789,810	-	209,885	-
Foreign exchange gain (loss), net (Note 32)	14,682,696	1	(1,759,386)	-
Finance costs (Note 21)	(2,534,721)	-	(1,766,297)	-
Other gains and losses, net (Note 22)	(9,833,358)	(1)	6,615,162	-
Total non-operating income and expenses	30,869,355	2	39,153,435	3
INCOME BEFORE INCOME TAX	660,502,191	42	582,618,942	44
INCOME TAX EXPENSE (Notes 5 and 23)	63,962,178	4	64,733,555	5
NET INCOME	596,540,013	38	517,885,387	39
OTHER COMPREHENSIVE INCOME (LOSS) (Notes 5, 11, 17, 18 and 23)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	242,079	-	(3,516,749)	-
Unrealized gain/(loss) on investments in equity instruments at fair value through other comprehensive income	170,127	-	(41,995)	-
Gain (loss) on hedging instruments	(41,416)	-	24,085	-
Share of other comprehensive gain of subsidiaries and associates	1,697,885	-	453,603	-
Income tax (expense) benefit related to items that will not be reclassified subsequently	(85,269)	-	422,663	-
	1,983,406	-	(2,658,393)	-

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME
(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2021		2020	
	Amount	%	Amount	%
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	$ (6,182,507)	-	$ (29,853,603)	(2)
Share of other comprehensive gain/(loss) of subsidiaries and associates	(3,422,853)	-	2,190,087	-
	(9,605,360)	-	(27,663,516)	(2)
Other comprehensive loss for the year, net of income tax	(7,621,954)	-	(30,321,909)	(2)
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	$ 588,918,059	38	$ 487,563,478	37
EARNINGS PER SHARE (NT$, Note 24)				
Basic earnings per share	$ 23.01		$ 19.97	
Diluted earnings per share	$ 23.01		$ 19.97	

The accompanying notes are an integral part of the parent company only financial statements. (Concluded)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CHANGES IN EQUITY
(In Thousands of New Taiwan Dollars)

	Capital Stock - Common Stock			Retained Earnings				Others					
	Shares (In Thousands)	Amount	Capital Surplus	Legal Capital Reserve	Special Capital Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at Fair Value Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total	Total Equity
BALANCE, JANUARY 1, 2020	25,930,380	$ 259,303,805	$ 56,339,709	$ 311,146,899	$ 10,675,106	$ 1,011,512,974	$ 1,333,334,979	$ (26,871,400)	$ (692,959)	$ (3,820)	$ (190)	$ (27,568,369)	$ 1,621,410,124
Appropriations of earnings													
Special capital reserve	-	-	-	-	31,584,040	(31,584,040)	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(259,303,805)	(259,303,805)	-	-	-	-	-	(259,303,805)
Total	-	-	-	-	31,584,040	(290,887,845)	(259,303,805)	-	-	-	-	-	(259,303,805)
Net income in 2020	-	-	-	-	-	517,885,387	517,885,387	-	-	-	-	-	517,885,387
Other comprehensive income (loss) in 2020, net of income tax	-	-	-	-	-	(3,121,793)	(3,121,793)	(30,130,227)	2,906,026	24,085	-	(27,200,116)	(30,321,909)
Total comprehensive income (loss) in 2020	-	-	-	-	-	514,763,594	514,763,594	(30,130,227)	2,906,026	24,085	-	(27,200,116)	487,563,478
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	(108,687)	(108,687)	-	108,687	-	-	108,687	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	-	-	-	-	(20,265)	-	(20,265)	(20,265)
Adjustments to share of changes in equities of associates	-	-	292	-	-	-	-	-	-	-	190	190	482
Donation from shareholders	-	-	7,242	-	-	-	-	-	-	-	-	-	7,242
BALANCE, DECEMBER 31, 2020	25,930,380	259,303,805	56,347,243	311,146,899	42,259,146	1,235,280,036	1,588,686,081	(57,001,627)	2,321,754	-	-	(54,679,873)	1,849,657,256
Appropriations of earnings													
Special capital reserve	-	-	-	-	17,045,066	(17,045,066)	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	-	-	(278,751,590)	(278,751,590)	-	-	-	-	-	(278,751,590)
Total	-	-	-	-	17,045,066	(295,796,656)	(278,751,590)	-	-	-	-	-	(278,751,590)
Net income in 2021	-	-	-	-	-	596,540,013	596,540,013	-	-	-	-	-	596,540,013
Other comprehensive income (loss) in 2021, net of income tax	-	-	-	-	-	167,503	167,503	(6,301,734)	(1,559,790)	72,067	-	(7,789,457)	(7,621,954)
Total comprehensive income (loss) in 2021	-	-	-	-	-	596,707,516	596,707,516	(6,301,734)	(1,559,790)	72,067	-	(7,789,457)	588,918,059
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	187,654	187,654	-	(187,654)	-	-	(187,654)	-
Basis adjustment for gain on hedging instruments	-	-	-	-	-	-	-	-	-	48,469	-	48,469	48,469
Adjustments to share of changes in equities of associates	-	-	4,796	-	-	-	-	-	-	-	-	-	4,796
From difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal	-	-	8,406,282	-	-	-	-	-	-	-	-	-	8,406,282
From share of changes in equities of subsidiaries	-	-	(7,891)	-	-	-	-	-	-	-	-	-	(7,891)
Donation from shareholders	-	-	11,172	-	-	-	-	-	-	-	-	-	11,172
BALANCE, DECEMBER 31, 2021	25,930,380	$ 259,303,805	$ 64,761,602	$ 311,146,899	$ 59,304,212	$ 1,536,378,550	$ 1,906,829,661	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)	$ 2,168,286,553

The accompanying notes are an integral part of the parent company only financial statements.

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2021	2020
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	$ 660,502,191	$ 582,618,942
Adjustments for:		
Depreciation expense	402,931,257	313,379,686
Amortization expense	8,100,730	7,047,694
Finance costs	2,534,721	1,766,297
Share of profits of subsidiaries and associates	(26,837,174)	(34,902,194)
Interest income	(927,754)	(951,877)
Loss (gain) on disposal or retirement of property, plant and equipment, net	222,387	(266,581)
Gain on disposal or retirement of intangible assets, net	(7,332)	(7,960)
Impairment loss on property, plant and equipment	274,388	-
Gain on financial instruments at fair value through profit or loss, net	-	(8,289)
Gain on foreign exchange, net	(16,975,706)	(7,747,615)
Dividend income	(178,979)	(186,854)
Others	(370,086)	13,808
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	2,482,448	(2,973,199)
Notes and accounts receivable, net	(11,289,182)	13,002,568
Receivables from related parties	(36,571,200)	(19,586,673)
Other receivables from related parties	(3,503,728)	(684,360)
Inventories	(54,861,812)	(54,034,185)
Other financial assets	(2,371,699)	(1,091,188)
Other current assets	(2,445,945)	(1,174,789)
Accounts payable	4,965,785	400,931
Payables to related parties	(746,871)	1,300,988
Salary and bonus payable	3,336,396	3,262,877
Accrued profit sharing bonus to employees and compensation to directors	826,049	11,736,788
Accrued expenses and other current liabilities	82,992,551	19,228,140
Other noncurrent liabilities	154,036,474	-
Net defined benefit liability	(635,116)	(785,171)
Cash generated from operations	1,165,482,793	829,357,784
Income taxes paid	(81,550,608)	(49,747,636)
Net cash generated by operating activities	1,083,932,185	779,610,148
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Equity interest in subsidiary	(157,243)	(937,679)
Property, plant and equipment	(793,327,208)	(494,310,468)
Intangible assets	(8,998,084)	(9,482,909)
Proceeds from disposal or redemption of:		
Property, plant and equipment	462,138	1,070,855
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	6,257	285
Derecognition of hedging financial instruments	-	19,786
Interest received	902,872	958,590
Other dividends received	178,979	186,854
Dividends received from investments accounted for using equity method	2,560,790	2,752,043

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS
(In Thousands of New Taiwan Dollars)

	2021	2020
Increase in prepayments for leases	$ (1,200,000)	$ (4,687,970)
Refundable deposits paid	(225,347)	(667,219)
Refundable deposits refunded	605,714	1,427,743
Net cash used in investing activities	(799,191,132)	(503,670,089)
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase (decrease) in short-term loans	(50,538,933)	31,944,333
Proceeds from short-term bills payable	-	7,485,303
Repayments of short-term bills payable	-	(7,500,000)
Proceeds from issuance of bonds	142,318,000	149,085,000
Repayment of bonds	(2,600,000)	(31,800,000)
Payments for transaction costs attributable to the issuance of bonds	(146,157)	(155,818)
Repayment of the principal portion of lease liabilities	(1,466,130)	(2,168,114)
Interest paid	(1,997,383)	(1,729,192)
Guarantee deposits received	467,964	144,364
Guarantee deposits refunded	(7,234)	(13,695)
Cash dividends	(265,786,399)	(259,303,805)
Disposal of ownership interests in subsidiaries (without losing control)	9,451,798	-
Payment of partial acquisition of interests in subsidiaries	(21,318,931)	(220,480)
Donation from shareholders	10,876	7,064
Net cash used in financing activities	(191,612,529)	(114,225,040)
NET INCREASE IN CASH AND CASH EQUIVALENTS	93,128,524	161,715,019
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	303,165,717	141,450,698
CASH AND CASH EQUIVALENTS, END OF YEAR	$ 396,294,241	$ 303,165,717

The accompanying notes are an integral part of the parent company only financial statements. (Concluded)

1. GENERAL

Taiwan Semiconductor Manufacturing Company Limited (the "Company" or "TSMC"), a Republic of China (R.O.C.) corporation, was incorporated on February 21, 1987. The Company is a dedicated foundry in the semiconductor industry which engages mainly in the manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing of masks.

On September 5, 1994, the Company's shares were listed on the Taiwan Stock Exchange (TWSE). On October 8, 1997, the Company listed some of its shares of stock on the New York Stock Exchange (NYSE) in the form of American Depositary Shares (ADSs).

The address of its registered office and principal place of business is No. 8, Li-Hsin Rd. 6, Hsinchu Science Park, Taiwan.

2. THE AUTHORIZATION OF FINANCIAL STATEMENTS

The accompanying parent company only financial statements were approved and authorized for issue by the Board of Directors on February 15, 2022.

3. APPLICATION OF NEW AND REVISED INTERNATIONAL FINANCIAL REPORTING STANDARDS

a. Initial application of the amendments to the International Financial Reporting Standards (IFRS), International Accounting Standards (IAS), IFRIC Interpretations (IFRIC), and SIC Interpretations (SIC) (collectively, "IFRSs") endorsed and issued into effect by the Financial Supervisory Commission (FSC)

The initial application of the amendments to the IFRSs endorsed and issued into effect by the FSC did not have a significant effect on the Company's accounting policies.

b. Amendments to the IFRSs issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2022

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Annual Improvements to IFRS Standards 2018 - 2020 Cycle	January 1, 2022
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

c. The IFRSs issued by IASB but not yet endorsed and issued into effect by the FSC

New, Revised or Amended Standards and Interpretations	Effective Date Issued by IASB
Amendments to IFRS 10 and IAS 28 "Sale or Contribution of Assets between an Investor and its Associate or Joint Venture"	To be determined by IASB
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

As of the date the accompanying parent company only financial statements were authorized for issue, the Company continues in evaluating the impact on its financial position and financial performance from the initial adoption of the aforementioned standards or interpretations and related applicable period. The related impact will be disclosed when the Company completes its evaluation.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

For the convenience of readers, the accompanying parent company only financial statements have been translated into English from the original Chinese version prepared and used in the R.O.C. If there is any conflict between the English version and the original Chinese version or any difference in the interpretation of the two versions, the Chinese-language parent company only financial statements shall prevail.

Statement of Compliance

The accompanying parent company only financial statements have been prepared in conformity with the Regulations Governing the Preparation of Financial Reports by Securities Issuers (the "Accounting Standards Used in Preparation of the Parent Company Only Financial Statements").

Basis of Preparation

The accompanying parent company only financial statements have been prepared on the historical cost basis except for financial instruments that are measured at fair values, as explained in the accounting policies below. Historical cost is generally based on the fair value of the consideration given in exchange for the assets.

When preparing the parent company only financial statements, the Company account for subsidiaries and associates by using the equity method. In order to agree with the amount of net income, other comprehensive income and equity attributable to shareholders of the parent in the consolidated financial statements, the differences of the accounting treatment between the parent company only basis and the consolidated basis are adjusted under the heading of investments accounted for using equity method, share of profits of subsidiaries and associates and share of other comprehensive income of subsidiaries and associates in the parent company only financial statements.

Foreign Currencies

In preparing the parent company only financial statements, transactions in currencies other than the entity's functional currency (foreign currencies) are recognized at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at that date. Such exchange differences are recognized in profit or loss in the year in which they arise. Non-monetary items measured at fair value that are denominated in foreign currencies are retranslated at the rates prevailing at the date when the fair value was determined. Exchange differences arising on the retranslation of non-monetary items are included in profit or loss for the year except

for exchange differences arising on the retranslation of non-monetary items in respect of which gains and losses are recognized directly in other comprehensive income, in which case, the exchange differences are also recognized directly in other comprehensive income. Non-monetary items that are measured in terms of historical cost in foreign currencies are not retranslated.

For the purposes of presenting parent company only financial statements, the assets and liabilities of the Company's foreign operations are translated into NT$ using exchange rates prevailing at the end of each reporting period. Income and expense items are translated at the average exchange rates for the period. Exchange differences arising, if any, are recognized in other comprehensive income and accumulated in equity.

Classification of Current and Noncurrent Assets and Liabilities

Current assets are assets held for trading purposes and assets expected to be converted to cash, sold or consumed within one year from the end of the reporting period. Current liabilities are obligations incurred for trading purposes and obligations expected to be settled within one year from the end of the reporting period. Assets and liabilities that are not classified as current are noncurrent assets and liabilities, respectively.

Cash Equivalents

Cash equivalents, for the purpose of meeting short-term cash commitments, consist of highly liquid time deposits and investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

Financial Instruments

Financial assets and liabilities shall be recognized when the Company becomes a party to the contractual provisions of the instruments.

Financial assets and liabilities are initially recognized at fair values. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognized immediately in profit or loss.

Financial Assets

The classification of financial assets depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Regular way purchases or sales of financial assets are recognized and derecognized on a trade date or settlement date basis for which financial assets were classified in the same way, respectively. Regular way purchases or sales are purchases or sales of financial assets that require delivery of assets within the time frame established by regulation or convention in the marketplace.

a. Category of financial assets and measurement

   Financial assets are classified into the following categories: financial assets at FVTPL, investments in debt instruments and equity instruments at FVTOCI, and financial assets at amortized cost.

   1) Financial asset at FVTPL

      For certain financial assets which include debt instruments that do not meet the criteria of amortized cost or FVTOCI, it is mandatorily required to measure them at FVTPL. Any gain or loss arising from remeasurement is recognized in profit or loss. The net gain or loss recognized in profit or loss incorporates any interest earned on the financial asset.

2) Investments in debt instruments at FVTOCI

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of collecting contractual cash flows and selling the financial assets, are measured at FVTOCI.

Interest income calculated using the effective interest method, foreign exchange gains and losses and impairment gains or losses on investments in debt instruments at FVTOCI are recognized in profit or loss. Other changes in the carrying amount of these debt instruments are recognized in other comprehensive income and will be reclassified to profit or loss when these debt instruments are disposed.

3) Investments in equity instruments at FVTOCI

On initial recognition, the Company may irrevocably designate investments in equity investments that is not held for trading as at FVTOCI.

Investments in equity instruments at FVTOCI are subsequently measured at fair value with gains and losses arising from changes in fair value recognized in other comprehensive income and accumulated in other equity.

Dividends on these investments in equity instruments at FVTOCI are recognized in profit or loss when the Company's right to receive the dividends is established, unless the Company's rights clearly represent a recovery of part of the cost of the investment.

4) Measured at amortized cost

Cash and cash equivalents, debt instrument investments, notes and accounts receivable (including related parties), other receivables and refundable deposits are measured at amortized cost.

Debt instruments with contractual terms specifying that cash flows are solely payments of principal and interest on the principal amount outstanding, together with objective of holding financial assets in order to collect contractual cash flows, are measured at amortized cost.

Subsequent to initial recognition, financial assets measured at amortized cost are measured at amortized cost, which equals to carrying amount determined by the effective interest method less any impairment loss.

b. Impairment of financial assets

At the end of each reporting period, a loss allowance for expected credit loss is recognized for financial assets at amortized cost (including accounts receivable) and for investments in debt instruments that are measured at FVTOCI.

The loss allowance for accounts receivable is measured at an amount equal to lifetime expected credit losses. For financial assets at amortized cost and investments in debt instruments that are measured at FVTOCI, when the credit risk on the financial instrument has not increased significantly since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from possible default events of a financial instrument within 12 months after the reporting date. If, on the other hand, there has been a significant increase in credit risk since initial recognition, a loss allowance is recognized at an amount equal to expected credit loss resulting from all possible default events over the expected life of a financial instrument.

The Company recognizes an impairment loss in profit or loss for all financial instruments with a corresponding adjustment to their carrying amount through a loss allowance account, except for investments in debt instruments that are measured at FVTOCI, for which the loss allowance is recognized in other comprehensive income and does not reduce the carrying amount of the financial asset.

c. Derecognition of financial assets

The Company derecognizes a financial asset only when the contractual rights to the cash flows from the financial asset expire, or when it transfers the financial asset and substantially all the risks and rewards of ownership of the financial asset to another entity.

On derecognition of a financial asset at amortized cost in its entirety, the difference between the asset's carrying amount and the sum of the consideration received and receivable is recognized in profit or loss. On derecognition of an investment in a debt instrument at FVTOCI, the difference between the asset's carrying amount and the sum of the consideration received and receivable and the cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss. However, on derecognition of an investment in an equity instrument at FVTOCI, the cumulative gain or loss that had been recognized in other comprehensive income is transferred directly to retained earnings, without recycling through profit or loss.

Financial Liabilities and Equity Instruments

Classification as debt or equity

Debt and equity instruments issued by the Company are classified as either financial liabilities or as equity in accordance with the substance of the contractual arrangements and the definitions of a financial liability and an equity instrument.

Equity instruments

An equity instrument is any contract that evidences a residual interest in the assets of an entity after deducting all of its liabilities. Equity instruments issued by the Company are recognized at the proceeds received, net of direct issue costs.

Financial liabilities

Financial liabilities are subsequently measured either at amortized cost using effective interest method or at FVTPL.

Financial liabilities are classified as at fair value through profit or loss when the financial liability is either held for trading or is designated as at fair value through profit or loss.

Financial liabilities at fair value through profit or loss are stated at fair value, with any gains or losses arising on remeasurement recognized in profit or loss.

Financial liabilities other than those held for trading purposes and designated as at FVTPL are subsequently measured at amortized cost at the end of each reporting period.

Derecognition of financial liabilities

The Company derecognizes financial liabilities when, and only when, the Company's obligations are discharged, cancelled or they expire. The difference between the carrying amount of the financial liability derecognized and the consideration paid and payable is recognized in profit or loss.

Derivative Financial Instruments

Derivative financial instruments are initially recognized at fair value at the date the derivative contracts are entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in profit or loss immediately unless the derivative financial instrument is designated and effective as a hedging instrument, in which event the timing of the recognition in profit or loss depends on the nature of the hedge relationship.

Hedge Accounting

Cash flow hedge

The Company designates certain hedging instruments, such as forward exchange contracts, to partially hedge its foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The effective portion of changes in the fair value of hedging instruments is recognized in other comprehensive income. When the forecast transactions actually take place, the associated gains or losses that were recognized in other comprehensive income are removed from equity and included in the initial cost of the hedged items. The gains or losses from hedging instruments relating to the ineffective portion are recognized immediately in profit or loss.

The Company prospectively discontinues hedge accounting only when the hedging relationship ceases to meet the qualifying criteria; for instance, when the hedging instrument expires or is sold, terminated or exercised.

Inventories

Inventories are stated at the lower of cost or net realizable value. Inventories are recorded at standard cost and adjusted to approximate weighted-average cost at the end of the reporting period. Net realizable value represents the estimated selling price of inventories less all estimated costs of completion and costs necessary to make the sale.

Investments Accounted for Using Equity Method

Investments accounted for using the equity method include investments in subsidiaries and associates.

Investment in subsidiaries

A subsidiary is an entity that is controlled by the Company.

Under the equity method, an investment in a subsidiary is initially recognized at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the subsidiary as well as the distribution received. The Company also recognized its share in the changes in the equity of subsidiaries.

Changes in the Company's ownership interests in subsidiaries that do not result in the Company losing control over the subsidiaries are accounted for as equity transactions. Any difference between the carrying amount of the subsidiary and the fair value of the consideration paid or received is recognized directly in equity.

When the Company loses control of a subsidiary, any retained investment of the former subsidiary is measured at the fair value at that date. A gain or loss is recognized in profit or loss and calculated as the difference between (a) the aggregate of the fair value of consideration received and the fair value of any retained interest at the date when control is lost; and (b) the previous carrying amount of the investments in such subsidiary. In addition, the Company shall account for all amounts previously recognized in other comprehensive income in relation to the subsidiary on the same basis as would be required if the subsidiary had directly disposed of the related assets and liabilities.

When the Company transacts with its subsidiaries, profits and losses resulting from the transactions with the subsidiaries are recognized in the Company's parent company only financial statements only to the extent of interests in the subsidiaries that are not owned by the Company.

Investment in associates

An associate is an entity over which the Company has significant influence and that is neither a subsidiary nor a joint venture. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

The operating results and assets and liabilities of associates are incorporated in these parent company only financial statements using the equity method of accounting. Under the equity method, an investment in an associate is initially recognized in the statement of financial position at cost and adjusted thereafter to recognize the Company's share of profit or loss and other comprehensive income of the associate as well as the distribution received. The Company also recognizes its share in the changes in the equities of associates.

Any excess of the cost of acquisition over the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities of an associate recognized at the date of acquisition is recognized as goodwill, which is included within the carrying amount of the investment. Any excess of the Company's share of the net fair value of the identifiable assets, liabilities and contingent liabilities over the cost of acquisition, after reassessment, is recognized immediately in profit or loss.

When necessary, the entire carrying amount of the investment (including goodwill) is tested for impairment as a single asset by comparing its recoverable amount (higher of value in use and fair value less costs to sell) with its carrying amount. Any impairment loss recognized forms part of the carrying amount of the investment. Any reversal of that impairment loss is recognized to the extent that the recoverable amount of the investment subsequently increases.

When the Company subscribes to additional shares in an associate at a percentage different from its existing ownership percentage, the resulting carrying amount of the investment differs from the amount of the Company's proportionate interest in the net assets of the associate. The Company records such a difference as an adjustment to investments with the corresponding amount charged or credited to capital surplus. If the Company's ownership interest is reduced due to the additional subscription to the shares of associate by other investors, the proportionate amount of the gains or losses previously recognized in other comprehensive income in relation to that associate shall be reclassified to profit or loss on the same basis as would be required if the associate had directly disposed of the related assets or liabilities.

When the Company transacts with an associate, profits and losses resulting from the transactions with the associate are recognized in the Company's parent company only financial statements only to the extent of interests in the associate that are not owned by the Company.

Property, Plant and Equipment

Property, plant and equipment are measured at cost less accumulated depreciation and accumulated impairment. Costs include any incremental costs that are directly attributable to the construction, acquisition of the item of property, plant and equipment or borrowing costs eligible for capitalization.

Property, plant and equipment in the course of construction for production, supply or administrative purposes are carried at cost, less any recognized impairment loss. Such assets are classified to the appropriate categories of property, plant and equipment when completed and ready for intended use. Depreciation of these assets, on the same basis as other identical categories of property, plant and equipment, commences when the assets are available for their intended use.

Depreciation is recognized so as to write off the cost of the assets less their residual values over their useful lives, and it is computed using the straight-line method mainly over the following estimated useful lives: buildings (assets used by the Company and assets subject to operating leases) - 10 to 20 years; machinery and equipment (assets used by the Company and assets subject to operating leases) - 5 years; and office equipment - 5 years. The estimated useful lives, residual values and depreciation method are reviewed at the end of each reporting period, with the effect of any changes in estimates accounted for on a prospective basis. Land is not depreciated.

An item of property, plant and equipment is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the assets. Any gain or loss arising on the disposal or retirement of an item of property, plant and equipment is determined as the difference between the sales proceeds and the carrying amount of the asset and is recognized in profit or loss.

Leases

For a contract that contains a lease component and non-lease component, the Company may elect to account for the lease and non-lease components as a single lease component.

The Company as lessor

Rental income from operating lease is recognized on a straight-line basis over the term of the lease.

The Company as lessee

Except for payments for low-value asset leases and short-term leases (leases of machinery and equipment and others) which are recognized as expenses on a straight-line basis, the Company recognizes right-of-use assets and lease liabilities for all leases at the commencement date of the lease.

Right-of-use assets are measured at cost. The cost of right-of-use assets comprises the initial measurement of lease liabilities adjusted for lease payments and initial direct costs made at or before the commencement date, plus an estimate of costs needed to restore the underlying assets. Subsequent measurement is calculated as cost less accumulated depreciation and accumulated impairment loss and adjusted for changes in lease liabilities as a result of lease term modifications or other related factors. Right-of-use assets are presented separately in the parent company only balance sheets.

Right-of-use assets are depreciated using the straight-line method from the commencement dates to the earlier of the end of the useful lives of the right-of-use assets or the end of the lease terms. If the lease transfers ownership of the underlying assets to the Company by the end of the lease terms or if the cost of right-of-use assets reflects that the Company will exercise a purchase option, the Company depreciates the right-of-use assets from the commencement dates to the end of the useful lives of the underlying assets.

Lease liabilities are measured at the present value of the lease payments. Lease payments comprise fixed payments, variable lease payments which depend on an index or a rate and the exercise price of a purchase option if the Company is reasonably certain to exercise that option. The lease payments are discounted using the lessee’s incremental borrowing rates.

Subsequently, lease liabilities are measured at amortized cost using the effective interest method, with interest expense recognized over the lease terms. When there is a change in a lease term, a change in future lease payments resulting from a change in an index or a rate used to determine those payments, or a change in the assessment of an option to purchase an underlying asset, the Company remeasures the lease liabilities with a corresponding adjustment to the right-of-use assets. Lease liabilities are presented on a separate line in the parent company only balance sheets.

Variable lease payments that do not depend on an index or a rate are recognized as expenses in the periods in which they are incurred.

Intangible Assets

Goodwill

Goodwill arising on an acquisition of a business is carried at cost as established at the date of acquisition of the business less accumulated impairment losses, if any.

Other intangible assets

Other separately acquired intangible assets with finite useful lives are carried at cost less accumulated amortization and accumulated impairment losses. Amortization is recognized using the straight-line method over the following estimated useful lives: Technology license fees - the estimated life of the technology or the term of the technology transfer contract; software and system design costs - 3 years or contract period; patent and others - the economic life or contract period. The estimated useful life and amortization method are reviewed at the end of each reporting period, with the effect of any changes in estimate being accounted for on a prospective basis.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets

Goodwill

Goodwill is not amortized and instead is tested for impairment annually, or more frequently when there is an indication that the cash generating unit may be impaired. For the purpose of impairment testing, goodwill is allocated to each of the Company's cash generating units or groups of cash-generating units that are expected to benefit. If the recoverable amount of a cash generating unit is less than its carrying amount, the difference is allocated first to reduce the carrying amount of any goodwill allocated to such cash-generating unit and then to the other assets of the cash generating unit pro rata based on the carrying amount of each asset in the cash generating unit. Any impairment loss for goodwill is recognized directly in profit or loss. An impairment loss recognized for goodwill is not reversed in subsequent periods.

Tangible assets, right-of-use assets and other intangible assets

At the end of each reporting period, the Company reviews the carrying amounts of its tangible assets (property, plant and equipment), right-of-use assets and other intangible assets to determine whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss. When it is not possible to estimate the recoverable amount of an individual asset, the Company estimates the recoverable amount of the cash-generating unit to which the asset belongs. When a reasonable and consistent basis of allocation can be identified, corporate assets are also allocated to individual cash-generating units, or otherwise they are allocated to the smallest group of cash-generating units for which a reasonable and consistent allocation basis can be identified.

Recoverable amount is the higher of fair value less costs to sell and value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate that reflects current market assessments of the time value of money and the risks specific to the asset for which the estimates of future cash flows have not been adjusted.

If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

When an impairment loss subsequently reverses, the carrying amount of the asset or a cash-generating unit is increased to the revised estimate of its recoverable amount, but the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognized for the asset or cash-generating unit in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

Revenue Recognition

The Company recognizes revenue when performance obligations are satisfied. The performance obligations are satisfied when customers obtain control of the promised goods which is generally when the goods are delivered to the customers' specified locations.

Revenue from sale of goods is measured at the fair value of the consideration received or receivable. Revenue is reduced for estimated customer returns, rebates and other similar allowances. Estimated sales returns and other allowances is generally made and adjusted based on historical experience and the consideration of varying contractual terms to recognize refund liabilities, which is classified under accrued expenses and other current liabilities.

In principle, payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month of when the invoice is issued. Due to the short term nature of the receivables from sale of goods with the immaterial discounted effect, the Company measures them at the original invoice amounts without discounting.

Employee Benefits

Short-term employee benefits

Liabilities recognized in respect of short-term employee benefits are measured at the undiscounted amount of the benefits expected to be paid in exchange for service rendered by employees.

Retirement benefits

For defined contribution retirement benefit plans, payments to the benefit plan are recognized as an expense when the employees have rendered service entitling them to the contribution. For defined benefit retirement benefit plans, the cost of providing benefit is recognized based on actuarial calculations.

Defined benefit costs (including service cost, net interest and remeasurement) under the defined benefit retirement benefit plans are determined using the Projected Unit Credit Method. Service cost (including current service cost), and net interest on the net defined benefit liability (asset) are recognized as employee benefits expense in the period they occur. Remeasurement, comprising actuarial gains and losses and the return on plan assets (excluding interest), is recognized in other comprehensive income in the period in which they occur. Remeasurement recognized in other comprehensive income is reflected immediately in retained earnings and will not be reclassified to profit or loss.

Net defined benefit liability represents the actual deficit in the Company's defined benefit plan.

Taxation

Income tax expense represents the sum of the tax currently payable and deferred tax.

Current tax

Income tax on unappropriated earnings is expensed in the year the shareholders approved the appropriation of earnings which is the year subsequent to the year the earnings are generated.

Adjustments of prior years' tax liabilities are added to or deducted from the current year's tax provision.

Deferred tax

Deferred tax is recognized on temporary differences between the carrying amounts of assets and liabilities in the parent company only financial statements and the corresponding tax bases used in the computation of taxable profit. Deferred tax liabilities are generally recognized for all taxable temporary differences. Deferred tax assets are generally recognized for all deductible temporary differences, net operating loss carryforwards and tax credits for research and development expenses to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries and associates, except where the Company is able to control the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax assets arising from deductible temporary differences associated with such investments are only recognized to the extent that it is probable that there will be sufficient taxable profits against which to utilize the benefits of the temporary differences and they are expected to reverse in the foreseeable future.

The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered. The deferred tax assets which originally not recognized is also reviewed at the end of each reporting period and recognized to the extent that it is probable that sufficient taxable profits will be available to allow all or part of the deferred tax asset to be recovered.

Deferred tax liabilities and assets are measured at the tax rates that are expected to apply in the year in which the liability is settled or the asset is realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Current and deferred tax for the year

Current and deferred tax are recognized in profit or loss, except when they relate to items that are recognized in other comprehensive income or directly in equity, in which case, the current and deferred tax are also recognized in other comprehensive income or directly in equity, respectively.

5. CRITICAL ACCOUNTING JUDGMENTS AND KEY SOURCES OF ESTIMATION AND UNCERTAINTY

The Company has considered the economic implications of COVID-19 on critical accounting estimates and will continue evaluating the impact on its financial position and financial performance as a result of the pandemic.

In the application of the aforementioned Company's accounting policies, the Company is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the year in which the estimate is revised if the revision affects only that year, or in the year of the revision and future years if the revision affects both current and future years.

Critical Accounting Judgments

Revenue Recognition

The Company recognizes revenue when the conditions described in Note 4 are satisfied.

Commencement of Depreciation Related to Property, Plant and Equipment Classified as Equipment under Installation and Construction in Progress (EUI/CIP)

As described in Note 4, commencement of depreciation related to EUI/CIP involves determining when the assets are available for their intended use. The criteria the Company uses to determine whether EUI/CIP are available for their intended use involves subjective judgments and assumptions about the conditions necessary for the assets to be capable of operating in the intended manner.

Judgments on Lease Terms

In determining a lease term, the Company considers all facts and circumstances that create an economic incentive to exercise or not to exercise an option, including any expected changes in facts and circumstances from the commencement date until the exercise date of the option. Main factors considered include contractual terms and conditions covered by the optional periods, and the importance of the underlying asset to the lessee's operations, etc. The lease term is reassessed if a significant change in circumstances that are within the control of the Company occurs.

Key Sources of Estimation and Uncertainty

Estimation of Sales Returns and Allowances

Sales returns and other allowance is estimated and recorded based on historical experience and in consideration of different contractual terms. The amount is deducted from revenue in the same period the related revenue is recorded. The Company periodically reviews the reasonableness of the estimates.

Valuation of Inventory

Inventories are stated at the lower of cost or net realizable value, and the Company uses estimate to determine the net realizable value of inventory at the end of each reporting period.

The Company estimates the net realizable value of inventory for normal waste, obsolescence and unmarketable items at the end of reporting period and then writes down the cost of inventories to net realizable value. The net realizable value of the inventory is determined mainly based on assumptions of future demand within a specific time horizon.

Impairment of Tangible Assets, Right-of-use Assets and Intangible Assets Other than Goodwill

In the process of evaluating the potential impairment of tangible assets, right-of-use assets and intangible assets other than goodwill, the Company determines the independent cash flows, useful lives, expected future revenue and expenses related to the specific asset groups with the consideration of the nature of semiconductor industry. Any change in these estimates based on changed economic conditions or business strategies could result in significant impairment charges or reversal in future years.

Realization of Deferred Income Tax Assets

Deferred tax assets are recognized to the extent that it is probable that future taxable profits will be available against which those deferred tax assets can be utilized. Assessment of the realization of the deferred tax assets requires subjective judgment and estimate, including the future revenue growth and profitability, tax holidays, the amount of tax credits can be utilized and feasible tax planning strategies. Any changes in the global economic environment, the industry trends and relevant laws and regulations could result in significant adjustments to the deferred tax assets.

Determination of Lessees' Incremental Borrowing Rates

In determining a lessee's incremental borrowing rate used in discounting lease payments, the Company mainly takes into account the market risk-free rates, the estimated lessee's credit spreads and secured status in a similar economic environment.

6. CASH AND CASH EQUIVALENTS

	December 31, 2021	December 31, 2020
Cash and deposits in banks	$ 395,463,340	$ 303,165,717
Repurchase agreements	830,901	-
	$ 396,294,241	$ 303,165,717

Deposits in banks consisted of highly liquid time deposits that were readily convertible to known amounts of cash and were subject to an insignificant risk of changes in value.

7. FINANCIAL ASSETS AND LIABILITIES AT FAIR VALUE THROUGH PROFIT OR LOSS

	December 31, 2021	December 31, 2020
Financial assets		
Mandatorily measured at FVTPL		
Forward exchange contracts	$ 145,280	$ 2,125,825
Financial liabilities		
Held for trading		
Forward exchange contracts	$ 636,472	$ 93,153

The Company entered into forward exchange contracts to manage exposures due to fluctuations of foreign exchange rates. These forward exchange contracts did not meet the criteria for hedge accounting. Therefore, the Company did not apply hedge accounting treatment for these forward exchange contracts.

Outstanding forward exchange contracts consisted of the following:

	Maturity Date	Contract Amount (In Thousands)
December 31, 2021		
Sell NT$	January 2022 to March 2022	NT$132,734,482
December 31, 2020		
Sell NT$	January 2021 to March 2021	NT$144,697,981

8. HEDGING FINANCIAL INSTRUMENTS

The Company entered into forward exchange contracts to partially hedge foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%. The forward exchange contracts have maturities of 12 months or less.

On the basis of economic relationships, the Company expects that the value of forward exchange contracts and the value of hedged transactions change in opposite directions in response to movements in foreign exchange rates.

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty's own credit risk on the fair value of forward exchange contracts. No other sources of ineffectiveness emerged from these hedging relationships. For the years ended December 31, 2021 and 2020, refer to Note 18(d) for gain or loss arising from changes in the fair value of hedging instruments and the amount transferred to initial carrying amount of hedged items.

The effect of hedging foreign currency risk for the years ended December 31, 2021 and 2020 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2021	2020
Hedging Instruments		
Forward exchange contracts	$ (41,416)	$ 24,085
Hedged Items		
Forecast transaction (capital expenditures)	$ 41,416	$ (24,085)

9. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2021	December 31, 2020
At amortized cost		
Notes and accounts receivable	$ 42,046,293	$ 31,899,524
Less: Loss allowance	(345,905)	(243,710)
	41,700,388	31,655,814
At FVTOCI	4,199,909	2,955,301
	$ 45,900,297	$ 34,611,115

The Company signed a contract with the bank to sell certain accounts receivable without recourse and transaction cost required. These accounts receivable are classified as at FVTOCI because they are held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets.

In principle, the payment term granted to customers is due 30 days from the invoice date or 30 days from the end of the month when the invoice is issued. Aside from recognizing impairment loss for credit-impaired

accounts receivable, the Company recognizes loss allowance based on the expected credit loss ratio of customers by different risk levels with consideration of factors of historical loss ratios and customers' financial conditions, competitiveness and business outlook. For accounts receivable past due over 90 days without collaterals or guarantees, the Company recognizes loss allowance at full amount.

Aging analysis of notes and accounts receivable

	December 31, 2021	December 31, 2020
Not past due	$ 44,056,424	$ 32,068,195
Past due		
Past due within 30 days	2,188,337	2,780,426
Past due 31-60 days	1,369	6,072
Past due 61-120 days	72	37
Past due over 121 days	-	95
Less: Loss allowance	(345,905)	(243,710)
	$ 45,900,297	$ 34,611,115

All of the Company's accounts receivable classified as at FVTOCI were not past due.

Movements of the loss allowance for accounts receivable

	Years Ended December 31	
	2021	2020
Balance, beginning of year	$ 243,710	$ 319,045
Provision (Reversal)	102,195	(75,335)
Balance, end of year	$ 345,905	$ 243,710

For the years ended December 31, 2021 and 2020, the changes in loss allowance were mainly due to the variations in the balance of accounts receivable of different risk levels.

10. INVENTORIES

	December 31, 2021	December 31, 2020
Finished goods	$ 32,290,346	$ 21,338,980
Work in process	134,097,879	88,575,222
Raw materials	10,368,446	13,758,417
Supplies and spare parts	8,403,177	6,625,417
	$ 185,159,848	$ 130,298,036

Write-down of inventories to net realizable value and reversal of write-down of inventories resulting from the increase in net realizable value were included in the cost of revenue during reporting period. The amounts are illustrated below:

	Years Ended December 31	
	2021	2020
Inventory losses	$ 520,096	$ 3,642,829

11. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Investments accounted for using the equity method consisted of the following:

	December 31, 2021	December 31, 2020
Subsidiaries	$ 580,702,074	$ 545,784,630
Associates	21,940,470	18,812,878
	$ 602,642,544	$ 564,597,508

a. Investments in subsidiaries

Subsidiaries consisted of the following:

Subsidiaries	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
TSMC Global Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	$ 374,639,406	$ 382,229,039	100%	100%
TSMC China Company Limited (TSMC China)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	73,470,628	64,243,766	100%	100%
TSMC Partners, Ltd. (TSMC Partners)	Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	Tortola, British Virgin Islands	54,968,185	52,649,936	100%	100%
TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	46,159,494	33,573,482	100%	100%
TSMC Arizona Corporation（TSMC Arizona）	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	Phoenix, Arizona, U.S.A.	16,667,696	842,745	100%	100%
VisEra Technologies Company Ltd. (VisEra Tech)	Research, design, development, manufacturing, sales, packaging and test of color filter	Hsinchu, Taiwan	6,521,231	6,363,099	73%	87%
TSMC North America	Selling and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	4,871,149	4,568,059	100%	100%
Japan Advanced Semiconductor Manufacturing, Inc.（JASM）	Manufacturing, sales, testing and computer aided design of integrated circuits and other semiconductor devices	Kumamoto, Japan	1,383,554	-	100%	-
TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	509,880	537,737	100%	100%
TSMC Design Technology Japan, Inc. (TSMC JDC)	Engineering support activities	Yokohama, Japan	368,144	292,266	100%	100%
VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in new start-up technology companies	Cayman Islands	300,401	214,881	98%	98%
Emerging Fund L.P.（Emerging Fund）	Investing in technology start-up companies	Cayman Islands	286,205	-	99.9%	-
TSMC Japan 3DIC R&D Center, Inc. (TSMC 3DIC)	Engineering support activities	Yokohama, Japan	270,513	-	100%	-
TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	132,411	144,784	100%	100%
VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	112,320	82,441	98%	98%
TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	40,857	42,395	100%	100%
			$ 580,702,074	$ 545,784,630		

The Company established a subsidiary, JASM, in December 2021 and invested in JASM for the amount of NT$1,416,921 thousand in January 2022. After JASM's capital increase in January 2022, the

Company's shareholding in JASM decreased from 100% to 81%. This transaction was accounted for as an equity transaction since the transaction did not change the Company's control over JASM.

To facilitate VisEra's IPO in Taiwan, 39,501 thousand common shares of VisEra at a price of NT$240 were sold by the Company and an increase of NT$8,406,282 thousand in capital surplus was recognized. The Company's shareholding in VisEra decreased from 87% to 73%. This disposal was accounted for as an equity transaction since the transaction did not change the Company's control over VisEra.

The Company established a subsidiary in March 2021 and continually increased its investment in TSMC 3DIC for the amount of NT$278,986 thousand.

The Company established a subsidiary in January 2021 and continually increased its investment in Emerging Fund for the amount of NT$298,618 thousand.

The Company established a subsidiary in November 2020 and, in both of 2021 and 2020, continually increased its investment in TSMC Arizona for the amount of NT$20,787,702 thousand and NT$855,599 thousand, respectively. Under the terms of the development agreement entered into between TSMC Arizona and the City of Phoenix, the City of Phoenix commits approximately US$205 million toward various public infrastructure projects in the area of the proposed manufacturing facility, conditioned on TSMC Arizona's achieving a minimum project scale with defined spending and job-creation thresholds.

The Company established a subsidiary in January 2020 and, in both of 2021 and 2020, continually increased its investment in TSMC JDC for the amount of NT$108,120 thousand and NT$302,560 thousand, respectively.

b. Investments in associates

Associates consisted of the following:

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2021	December 31, 2020	December 31, 2021	December 31, 2020
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	$ 10,613,127	$ 9,029,890	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	6,795,699	5,900,245	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	3,046,961	2,554,123	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	1,484,683	1,328,620	35%	35%
			$ 21,940,470	$ 18,812,878		

As of December 31, 2021 and 2020, no investments in associates are individually material to the Company. Please refer to the parent company only statements of comprehensive income for recognition of share of both profit (loss) and other comprehensive income (loss) of associates that are not individually material.

The market prices of the associates' ownership held by the Company in publicly traded stocks calculated by the closing price at the end of the reporting period are summarized as follows. The closing price represents the quoted price in active markets, the level 1 fair value measurement.

Name of Associate	December 31, 2021	December 31, 2020
VIS	$ 73,347,312	$ 53,849,925
GUC	$ 27,359,085	$ 15,827,184
Xintec	$ 15,913,315	$ 20,420,233

12. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2021	December 31, 2020
Assets used by the Company	$1,889,970,502	$1,510,807,506
Assets subject to operating leases	27	977,050
	$1,889,970,529	$1,511,784,556

a. Assets used by the Company

	Land	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
Balance at January 1, 2021	$ 3,212,000	$ 485,468,808	$ 3,449,111,312	$ 63,277,681	$ 220,142,047	$ 4,221,211,848
Additions	-	51,472,846	391,166,029	8,187,623	332,505,897	783,332,395
Disposals or retirements	-	(29,280)	(27,144,388)	(153,243)	-	(27,326,911)
Transfers from assets subject to operating leases	-	-	1,443,590	-	-	1,443,590
Transfers to assets subject to operating leases	-	-	(244,579)	-	-	(244,579)
Balance at December 31, 2021	$ 3,212,000	$ 536,912,374	$ 3,814,331,964	$ 71,312,061	$ 552,647,944	$ 4,978,416,343
Accumulated depreciation and impairment						
Balance at January 1, 2021	$ -	$ 249,513,714	$ 2,420,657,989	$ 40,232,639	$ -	$ 2,710,404,342
Additions	-	31,932,475	360,603,748	8,219,832	-	400,756,055
Disposals or retirements	-	(24,664)	(23,180,397)	(152,420)	-	(23,357,481)
Transfers from assets subject to operating leases	-	-	436,816	-	-	436,816
Transfers to assets subject to operating leases	-	-	(68,279)	-	-	(68,279)
Impairment	-	-	274,388	-	-	274,388
Balance at December 31, 2021	$ -	$ 281,421,525	$ 2,758,724,265	$ 48,300,051	$ -	$ 3,088,445,841
Carrying amounts at December 31, 2021	$ 3,212,000	$ 255,490,849	$ 1,055,607,699	$ 23,012,010	$ 552,647,944	$ 1,889,970,502

(Continued)

	Land	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
Cost						
Balance at January 1, 2020	$ 3,212,000	$ 401,141,445	$ 2,737,813,896	$ 49,644,875	$ 526,396,815	$ 3,718,209,031
Additions (deductions)	-	84,352,769	720,459,185	14,343,705	(306,254,768)	512,900,891
Disposals or retirements	-	(25,406)	(7,962,758)	(710,899)	-	(8,699,063)
Transfers to assets subject to operating leases	-	-	(1,199,011)	-	-	(1,199,011)
Balance at December 31, 2020	$ 3,212,000	$ 485,468,808	$ 3,449,111,312	$ 63,277,681	$ 220,142,047	$ 4,221,211,848
Accumulated depreciation and impairment						
Balance at January 1, 2020	$ -	$ 222,235,137	$ 2,150,734,249	$ 34,357,425	$ -	$ 2,407,326,811
Additions	-	27,292,400	277,252,114	6,584,391	-	311,128,905
Disposals or retirements	-	(13,823)	(7,125,781)	(709,177)	-	(7,848,781)
Transfers to assets subject to operating leases	-	-	(202,593)	-	-	(202,593)
Balance at December 31, 2020	$ -	$ 249,513,714	$ 2,420,657,989	$ 40,232,639	$ -	$ 2,710,404,342
Carrying amounts at December 31, 2020	$ 3,212,000	$ 235,955,094	$ 1,028,453,323	$ 23,045,042	$ 220,142,047	$ 1,510,807,506

(Concluded)

The significant part of the Company's buildings includes main plants, mechanical and electrical power equipment and clean rooms, and the related depreciation is calculated using the estimated useful lives of 20 years, 10 years and 10 years, respectively.

In the first quarter of 2021, the Company recognized an impairment loss of NT$274,388 thousand for certain machinery and equipment that was assessed to have no future use, and the recoverable amount of certain machinery and equipment was nil. Such impairment loss was recognized in other operating income and expenses.

b. Assets subject to operating leases

	Buildings	Machinery and Equipment	Total
Cost			
Balance at January 1, 2021	$ 182,643	$ 1,199,011	$ 1,381,654
Transfers to assets used by the Company	-	(1,443,590)	(1,443,590)
Transfers from assets used by the Company	-	244,579	244,579
Balance at December 31, 2021	$ 182,643	$ -	$ 182,643
Accumulated depreciation			
Balance at January 1, 2021	$ 182,612	$ 221,992	$ 404,604
Additions	4	146,545	146,549
Transfers to assets used by the Company	-	(436,816)	(436,816)
Transfers from assets used by the Company	-	68,279	68,279
Balance at December 31, 2021	$ 182,616	$ -	$ 182,616
Carrying amounts at December 31, 2021	$ 27	$ -	$ 27

(Continued)

	Buildings	Machinery and Equipment	Total
Cost			
Balance at January 1, 2020	$ 494,582	$ -	$ 494,582
Disposals or retirements	(311,939)	-	(311,939)
Transfers from assets used by the Company	-	1,199,011	1,199,011
Balance at December 31, 2020	$ 182,643	$ 1,199,011	$ 1,381,654
Accumulated depreciation			
Balance at January 1, 2020	$ 476,168	$ -	$ 476,168
Additions	12,210	19,399	31,609
Disposals or retirements	(305,766)	-	(305,766)
Transfers from assets used by the Company	-	202,593	202,593
Balance at December 31, 2020	$ 182,612	$ 221,992	$ 404,604
Carrying amounts at December 31, 2020	$ 31	$ 977,019	$ 977,050

(Concluded)

Operating leases relate to leases of buildings and leases of machinery and equipment with lease terms ranging between approximately 1 to 2 years. The lessees do not have purchase options to acquire the assets at the expiration of the lease periods.

The maturity analysis of operating lease payments receivable from the buildings and machinery and equipment is as follows:

	December 31, 2021	December 31, 2020
Year 1	$ 986	$ 132,128

13. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31, 2021	December 31, 2020
Carrying amounts		
Land	$ 29,525,788	$ 24,874,590
Buildings	574,009	283,086
Office equipment	23,255	27,151
	$ 30,123,052	$ 25,184,827

	Years Ended December 31	
	2021	2020
Additions to right-of-use assets	$ 7,053,815	$ 12,558,794
Depreciation of right-of-use assets		
Land	$ 1,810,555	$ 1,298,315
Buildings	203,006	131,436
Machinery and equipment	-	775,809
Office equipment	15,092	13,612
	$ 2,028,653	$ 2,219,172
Income from subleasing right-of-use assets (classified under other operating income and expenses, net)	$ 59,887	$ 52,317

b. Lease liabilities

	December 31, 2021	December 31, 2020
Carrying amounts		
Current portion (classified under accrued expenses and other current liabilities)	$ 1,591,153	$ 1,379,097
Noncurrent portion	18,742,323	18,480,111
	$ 20,333,476	$ 19,859,208

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2021	December 31, 2020
Land	0.39%-0.94%	0.48%-0.94%
Buildings	0.39%-0.71%	0.54%-0.71%
Office equipment	0.28%-0.69%	0.28%-0.71%

c. Material terms of right-of-use assets

The Company leases land and buildings mainly for the use of plants and offices with lease terms of 1 to 22 years. The lease contracts for land located in the R.O.C. specify that lease payments will be adjusted every 2 years on the basis of changes in announced land value prices. The Company does not have purchase options to acquire the leasehold land and buildings at the end of the lease terms.

d. Subleases

The Company subleases the right to use its buildings and machinery and equipment under operating leases with lease terms of 1 to 2 years.

The maturity analysis of lease payments receivable under operating subleases is as follows:

	December 31, 2021	December 31, 2020
Year 1	$ 60,771	$ 142,340

e. Other lease information

	Years Ended December 31	
	2021	2020
Expenses relating to short-term leases	$ 5,250,134	$ 3,171,455
Expenses relating to variable lease payments not included in the measurement of lease liabilities	$ 125,592	$ 212,955
Total cash outflow for leases	$ 6,975,064	$ 5,823,617

14. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
Cost					
Balance at January 1, 2021	$ 1,567,756	$ 22,110,332	$ 35,685,061	$ 11,245,851	$ 70,609,000
Additions	-	1,372,806	7,686,449	219,505	9,278,760
Disposals or retirements	-	-	(299,060)	-	(299,060)
Balance at December 31, 2021	$ 1,567,756	$ 23,483,138	$ 43,072,450	$ 11,465,356	$ 79,588,700
Accumulated amortization and impairment					
Balance at January 1, 2021	$ -	$ 12,174,686	$ 29,683,225	$ 7,017,492	$ 48,875,403
Additions	-	2,686,786	4,214,190	1,199,754	8,100,730
Disposals or retirements	-	-	(297,833)	-	(297,833)
Balance at December 31, 2021	$ -	$ 14,861,472	$ 33,599,582	$ 8,217,246	$ 56,678,300
Carrying amounts at December 31, 2021	$ 1,567,756	$ 8,621,666	$ 9,472,868	$ 3,248,110	$ 22,910,400
Cost					
Balance at January 1, 2020	$ 1,567,756	$ 15,801,406	$ 32,518,813	$ 8,271,046	$ 58,159,021
Additions	-	6,308,926	3,226,715	2,974,805	12,510,446
Disposals or retirements	-	-	(60,467)	-	(60,467)
Balance at December 31, 2020	$ 1,567,756	$ 22,110,332	$ 35,685,061	$ 11,245,851	$ 70,609,000
Accumulated amortization and impairment					
Balance at January 1, 2020	$ -	$ 9,770,225	$ 26,215,694	$ 5,901,658	$ 41,887,577
Additions	-	2,404,461	3,527,399	1,115,834	7,047,694
Disposals or retirements	-	-	(59,868)	-	(59,868)
Balance at December 31, 2020	$ -	$ 12,174,686	$ 29,683,225	$ 7,017,492	$ 48,875,403
Carrying amounts at December 31, 2020	$ 1,567,756	$ 9,935,646	$ 6,001,836	$ 4,228,359	$ 21,733,597

The Company's goodwill has been tested for impairment at the end of the annual reporting period and the recoverable amount is determined based on the value in use. The value in use was calculated based on the cash flow forecast from the financial budgets covering the future five-year period, and the Company used annual discount rates of 8.0% in both years in its test of impairment as of December 31, 2021 and 2020, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2021 and 2020, the Company did not recognize any impairment loss on goodwill.

15. SHORT-TERM LOANS

	December 31, 2021	December 31, 2020
Unsecured loans	$ 114,921,333	$ 88,559,026
Related parties unsecured loans	-	87,100,700
	$ 114,921,333	$ 175,659,726
Loan content		
US$ (in thousands)	$ -	$ 3,300,000
EUR(in thousands)	3,652,935	2,398,000
Annual interest rate	(0.73)%-0%	(0.54)%-0.33%
Maturity date	Due by June 2022	Due by July 2022

The borrowing rates from loans between the Company and related parties are determined by mutual consent. And the loan are repayable on related parties' demand.

16. BONDS PAYABLE

	December 31, 2021	December 31, 2020
Domestic unsecured bonds	$ 312,448,000	$ 173,197,000
Less: Discounts on bonds payable	(264,591)	(146,255)
Less: Current portion	(4,400,000)	(2,600,000)
	$ 307,783,409	$ 170,450,745

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
NT$ unsecured bonds					
101-3	-	October 2012 to October 2022	$ 4,400,000	1.53%	Bullet repayment; interest payable annually
101-4	B	January 2013 to January 2020	10,000,000	1.35%	The same as above
	C	January 2013 to January 2023	3,000,000	1.49%	The same as above
102-1	B	February 2013 to February 2020	11,600,000	1.38%	The same as above
	C	February 2013 to February 2023	3,600,000	1.50%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
102-2	A	July 2013 to July 2020	$ 10,200,000	1.50%	Bullet repayment; interest payable annually
	B	July 2013 to July 2023	3,500,000	1.70%	The same as above
102-4	D	September 2013 to March 2021	2,600,000	1.85%	Bullet repayment; interest payable annually (interest for the six months prior to maturity will accrue on the basis of actual days and be repayable at maturity)
	E	September 2013 to March 2023	5,400,000	2.05%	The same as above
	F	September 2013 to September 2023	2,600,000	2.10%	Bullet repayment; interest payable annually
109-1	A	March 2020 to March 2025	3,000,000	0.58%	The same as above
	B	March 2020 to March 2027	10,500,000	0.62%	The same as above
	C	March 2020 to March 2030	10,500,000	0.64%	The same as above
109-2	A	April 2020 to April 2025	5,900,000	0.52%	The same as above
	B	April 2020 to April 2027	10,400,000	0.58%	The same as above
	C	April 2020 to April 2030	5,300,000	0.60%	The same as above
109-3	A	May 2020 to May 2025	4,500,000	0.55%	The same as above
	B	May 2020 to May 2027	7,500,000	0.60%	The same as above
	C	May 2020 to May 2030	2,400,000	0.64%	The same as above
109-4	A	July 2020 to July 2025	5,700,000	0.58%	Two equal installments in last two years; interest payable annually
	B	July 2020 to July 2027	6,300,000	0.65%	The same as above
	C	July 2020 to July 2030	1,900,000	0.67%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
109-5	A	September 2020 to September 2025	$ 4,800,000	0.50%	Two equal installments in last two years; interest payable annually
	B	September 2020 to September 2027	8,000,000	0.58%	The same as above
	C	September 2020 to September 2030	2,800,000	0.60%	The same as above
109-6 (green bond)	A	December 2020 to December 2025	1,600,000	0.40%	The same as above
	B	December 2020 to December 2027	5,600,000	0.44%	The same as above
	C	December 2020 to December 2030	4,800,000	0.48%	The same as above
109-7	A	December 2020 to December 2025	1,900,000	0.36%	The same as above
	B	December 2020 to December 2027	10,200,000	0.41%	The same as above
	C	December 2020 to December 2030	6,400,000	0.45%	The same as above
110-1	A	March 2021 to March 2026	4,800,000	0.50%	Bullet repayment; interest payable annually
	B	March 2021 to March 2028	11,400,000	0.55%	The same as above
	C	March 2021 to March 2031	4,900,000	0.60%	The same as above
110-2	A	May 2021 to May 2026	5,200,000	0.50%	The same as above
	B	May 2021 to May 2028	8,400,000	0.58%	The same as above
	C	May 2021 to May 2031	5,600,000	0.65%	The same as above
110-3	A	June 2021 to June 2026	6,900,000	0.52%	The same as above
	B	June 2021 to June 2028	7,900,000	0.58%	The same as above
	C	June 2021 to June 2031	4,900,000	0.65%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
110-4	A	August 2021 to August 2025	$ 4,000,000	0.485%	Bullet repayment; interest payable annually
	B	August 2021 to August 2026	8,000,000	0.50%	The same as above
	C	August 2021 to August 2028	5,400,000	0.55%	The same as above
	D	August 2021 to August 2031	4,200,000	0.62%	The same as above
110-6	A	October 2021 to April 2026	3,200,000	0.535%	The same as above
	B	October 2021 to October 2026	6,900,000	0.54%	The same as above
	C	October 2021 to October 2028	4,600,000	0.60%	The same as above
	D	October 2021 to October 2031	1,600,000	0.62%	The same as above
110-7	A	December 2021 to December 2026	7,700,000	0.65%	The same as above
	B	December 2021 to June 2027	3,500,000	0.675%	The same as above
	C	December 2021 to December 2028	5,500,000	0.72%	The same as above

(Concluded)

Issuance	Tranche	Issuance Period	Total Amount (US$ in Thousands)	Coupon Rate	Repayment and Interest Payment
US$ unsecured bonds					
109-1	-	September 2020 to September 2060	US$1,000,000	2.70%	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter); interest payable annually
110-5	-	September 2021 to September 2051	1,000,000	3.10%	The same as above

The Company issued domestic unsecured bonds during the period from January, 1, 2022 to February 15, 2022, the major terms are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
NT$ unsecured bonds					
111-1 (green bond)	A	January 2022 to January 2027	$ 2,100,000	0.63%	Bullet repayment; interest payable annually
	B	January 2022 to January 2029	3,300,000	0.72%	The same as above

17. RETIREMENT BENEFIT PLANS

a. Defined contribution plans

The plan under the R.O.C. Labor Pension Act (the "Act") is deemed a defined contribution plan. Pursuant to the Act, the Company has made monthly contributions equal to 6% of each employee's monthly salary to employees' pension accounts. Accordingly, the Company recognized expenses of NT$3,028,282 thousand and NT$2,309,527 thousand for the years ended December 31, 2021 and 2020, respectively.

b. Defined benefit plans

The Company has defined benefit plans under the R.O.C. Labor Standards Law that provide benefits based on an employee's length of service and average monthly salary for the six-month period prior to retirement. The Company contributes an amount equal to 2% of salaries paid each month to their respective pension funds (the Funds), which are administered by the Labor Pension Fund Supervisory Committee (the Committee) and deposited in the Committee's name in the Bank of Taiwan. Before the end of each year, the Company assesses the balance in the Funds. If the amount of the balance in the Funds is inadequate to pay retirement benefits for employees who conform to retirement requirements in the next year, the Company is required to fund the difference in one appropriation that should be made before the end of March of the next year. The Funds are operated and managed by the government's designated authorities; as such, the Company does not have any right to intervene in the investments of the Funds.

Amounts recognized in respect of these defined benefit plans were as follows:

	Years Ended December 31	
	2021	2020
Current service cost	$ 145,289	$ 123,311
Net interest expense	47,196	81,604
Components of defined benefit costs recognized in profit or loss	192,485	204,915
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(73,298)	(139,212)
Actuarial loss arising from experience adjustments	94,278	494,051

(Continued)

	Years Ended December 31	
	2021	2020
Actuarial loss arising from changes in demographic assumptions	$ 277,454	$ -
Actuarial (gain) loss arising from changes in financial assumptions	(540,513)	3,161,910
Components of defined benefit costs recognized in other comprehensive income	(242,079)	3,516,749
Total	$ (49,594)	$ 3,721,664

(Concluded)

The pension costs of the aforementioned defined benefit plans were recognized in profit or loss by the following categories:

	Years Ended December 31	
	2021	2020
Cost of revenue	$ 124,548	$ 126,274
Research and development expenses	52,801	57,306
General and administrative expenses	12,430	18,248
Marketing expenses	2,706	3,087
	$ 192,485	$ 204,915

The amounts arising from the defined benefit obligation of the Company were as follows:

	December 31, 2021	December 31, 2020
Present value of defined benefit obligation	$ 16,585,442	$ 16,980,277
Fair value of plan assets	(5,548,563)	(5,066,203)
Net defined benefit liability	$ 11,036,879	$ 11,914,074

Movements in the present value of the defined benefit obligation were as follows:

	Years Ended December 31	
	2021	2020
Balance, beginning of year	$ 16,980,277	$ 13,484,090
Current service cost	145,289	123,311
Interest expense	66,664	118,808
Remeasurement:		
Actuarial loss arising from experience adjustments	94,278	494,051
Actuarial loss arising from changes in demographic assumptions	277,454	-
Actuarial (gain) loss arising from changes in financial assumptions	(540,513)	3,161,910
Benefits paid from plan assets	(431,817)	(398,986)
Benefits paid directly by the Company	(6,190)	(2,907)
Balance, end of year	$ 16,585,442	$ 16,980,277

Movements in the fair value of the plan assets were as follows:

	Years Ended December 31	
	2021	**2020**
Balance, beginning of year	$ 5,066,203	$ 4,301,594
Interest income	19,468	37,204
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	73,298	139,212
Contributions from employer	821,411	987,179
Benefits paid from plan assets	(431,817)	(398,986)
Balance, end of year	$ 5,548,563	$ 5,066,203

The fair value of the plan assets by major categories at the end of reporting period was as follows:

	December 31, 2021	**December 31, 2020**
Cash	$ 1,000,961	$ 632,769
Equity instruments	2,951,835	2,926,745
Debt instruments	1,595,767	1,506,689
	$ 5,548,563	$ 5,066,203

The actuarial valuations of the present value of the defined benefit obligation were carried out by qualified actuaries. The principal assumptions of the actuarial valuation were as follows:

	Measurement Date	
	December 31, 2021	**December 31, 2020**
Discount rate	0.75%	0.40%
Future salary increase rate	3.00%	3.00% (Note)

Note: The Company has an additional 20 percent pay raise in 2021.

Through the defined benefit plans under the R.O.C. Labor Standards Law, the Company is exposed to the following risks:

1) Investment risk: The pension funds are invested in equity and debt securities, bank deposits, etc. The investment is conducted at the discretion of the government's designated authorities or under the mandated management. However, under the R.O.C. Labor Standards Law, the rate of return on assets shall not be less than the average interest rate on a two-year time deposit published by the local banks and the government is responsible for any shortfall in the event that the rate of return is less than the required rate of return.

2) Interest risk: A decrease in the government bond interest rate will increase the present value of the defined benefit obligation; however, this will be partially offset by an increase in the return on the debt investments of the plan assets.

Assuming a hypothetical decrease in interest rate at the end of the reporting period contributed to a decrease of 0.5% (and not below 0.0%) in the discount rate and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$780,460 thousand and NT$694,732 thousand as of December 31, 2021 and 2020, respectively.

3) Salary risk: The present value of the defined benefit obligation is calculated by reference to the future salaries of plan participants. As such, an increase in the salary of the plan participants will increase the present value of the defined benefit obligation.

   Assuming the expected salary rate increases by 0.5% at the end of the reporting period and all other assumptions were held constant, the present value of the defined benefit obligation would increase by NT$759,527 thousand and NT$835,964 thousand as of December 31, 2021 and 2020, respectively.

The sensitivity analysis presented above may not be representative of the actual change in the defined benefit obligation as it is unlikely that the change in assumptions would occur in isolation of one another as some of the assumptions may be correlated.

Furthermore, in presenting the above sensitivity analysis, the present value of the defined benefit obligation has been calculated using the projected unit credit method at the end of the reporting period, which is the same as that applied in calculating the defined benefit obligation liability.

The Company expects to make contributions of NT$2,269,881 thousand to the defined benefit plans in the next year starting from December 31, 2021. The weighted average duration of the defined benefit obligation is 9 years.

18. EQUITY

a. Capital stock

	December 31, 2021	December 31, 2020
Authorized shares (in thousands)	28,050,000	28,050,000
Authorized capital	$ 280,500,000	$ 280,500,000
Issued and paid shares (in thousands)	25,930,380	25,930,380
Issued capital	$ 259,303,805	$ 259,303,805

A holder of issued common shares with par value of NT$10 per share is entitled to vote and to receive dividends.

The authorized shares include 500,000 thousand shares allocated for the exercise of employee stock options.

As of December 31, 2021, 1,064,243 thousand ADSs of the Company were traded on the NYSE. The number of common shares represented by the ADSs was 5,321,213 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2021	December 31, 2020
Additional paid-in capital	$ 24,184,939	$ 24,184,939
From merger	22,804,510	22,804,510
From convertible bonds	8,892,847	8,892,847
From difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal	8,406,282	-
From share of changes in equities of subsidiaries	113,952	121,843
From share of changes in equities of associates	307,322	302,526
Donations	51,750	40,578
	$ 64,761,602	$ 56,347,243

Under the relevant laws, the capital surplus generated from the excess of the issuance price over the par value of capital stock (including the stock issued for new capital, mergers and convertible bonds), the difference between the consideration received and the carrying amount of the subsidiaries' net assets during actual disposal and donations may be used to offset a deficit; in addition, when the Company has no deficit, such capital surplus may be distributed as cash dividends or stock dividends up to a certain percentage of the Company's paid-in capital. The capital surplus from share of changes in equities of subsidiaries and associates and dividend of a claim extinguished by a prescription may be used to offset a deficit.

c. Retained earnings and dividend policy

The Company's Articles of Incorporation provide that, earnings distribution may be made on a quarterly basis after the close of each quarter. Distribution of earnings by way of cash dividends should be approved by the Company's Board of Directors and reported to the Company's shareholders in its meeting. When allocating earnings, the Company shall first estimate and reserve the taxes to be paid, offset its losses, set aside a legal capital reserve at 10% of the remaining earnings (until the accumulated legal capital reserve equals the Company's paid-in capital), then set aside a special capital reserve in accordance with relevant laws or regulations or as requested by the authorities in charge. Any balance left over shall be allocated according to relevant laws and the Company's Articles of Incorporation.

The Company's Articles of Incorporation also provide that profits of the Company may be distributed by way of cash dividend and/or stock dividend. However, distribution of earnings shall be made preferably by way of cash dividend. Distribution of earnings may also be made by way of stock dividend, provided that the ratio for stock dividend shall not exceed 50% of the total distribution.

The legal capital reserve may be used to offset a deficit, or be distributed as dividends in cash or stocks for the portion in excess of 25% of the paid-in capital if the Company incurs no loss.

Pursuant to existing regulations, the Company is required to set aside additional special capital reserve equivalent to the net debit balance of the other components of stockholders' equity, such as the accumulated balance of foreign currency translation reserve, unrealized valuation gain or loss from fair value through other comprehensive income financial assets, gain or loss from changes in fair value of hedging instruments in cash flow hedges, etc. For the subsequent decrease in the deduction amount to stockholders' equity, any special reserve appropriated may be reversed to the extent that the net debit balance reverses.

The appropriations of 2021, 2020 and 2019 quarterly earnings have been approved by the Company's Board of Directors in its meeting, respectively. The appropriations and cash dividends per share were as follows:

Resolution Date of the Company's Board of Directors in its meeting	Fourth Quarter of 2021 February 15, 2022	Third Quarter of 2021 November 9, 2021	Second Quarter of 2021 August 10, 2021	First Quarter of 2021 June 9, 2021
Special capital reserve	$ 3,304,303	$ 710,169	$ 10,201,220	$ (6,287,050)
Cash dividends to shareholders	$ 71,308,546	$ 71,308,547	$ 71,308,546	$ 71,308,546
Cash dividends per share (NT$)	$ 2.75	$ 2.75	$ 2.75	$ 2.75

Resolution Date of the Company's Board of Directors in its meeting	Fourth Quarter of 2020 February 9, 2021	Third Quarter of 2020 November 10, 2020	Second Quarter of 2020 August 11, 2020	First Quarter of 2020 May 12, 2020
Special capital reserve	$ 12,420,727	$ 5,501,351	$ 11,884,457	$ (2,694,841)
Cash dividends to shareholders	$ 64,825,951	$ 64,825,951	$ 64,825,951	$ 64,825,951
Cash dividends per share (NT$)	$ 2.5	$ 2.5	$ 2.5	$ 2.5

Resolution Date of the Company's Board of Directors in its meeting	Fourth Quarter of 2019 February 11, 2020	Third Quarter of 2019 November 12, 2019	Second Quarter of 2019 August 13, 2019	First Quarter of 2019 June 5, 2019
Special capital reserve	$ 16,893,073	$ 3,289,166	$ (3,338,190)	$ (4,723,939)
Cash dividends to shareholders	$ 64,825,951	$ 64,825,951	$ 64,825,951	$ 51,860,761
Cash dividends per share (NT$)	$ 2.5	$ 2.5	$ 2.5	$ 2.0

The special capital reserve for 2021 is to be presented for approval in the Company's shareholders' meeting to be held on June 8, 2022 (expected).

d. Others

Changes in others were as follows:

	Year Ended December 31, 2021				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ (57,001,627)	$ 2,321,754	$ -	$ -	$ (54,679,873)
Exchange differences arising on translation of foreign operations	(6,182,507)	-	-	-	(6,182,507)
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	170,127	-	-	170,127
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(187,654)	-	-	(187,654)
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	(41,416)	-	(41,416)
Transferred to initial carrying amount of hedged items	-	-	48,469	-	48,469
Share of other comprehensive income (loss) of subsidiaries and associates	(119,227)	(1,673,697)	113,483	-	(1,679,441)
Income tax effect	-	(56,220)	-	-	(56,220)
Balance, end of year	$ (63,303,361)	$ 574,310	$ 120,536	$ -	$ (62,608,515)

	Year Ended December 31, 2020				
	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Financial Assets at FVTOCI	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total
Balance, beginning of year	$ (26,871,400)	$ (692,959)	$ (3,820)	$ (190)	$ (27,568,369)
Exchange differences arising on translation of foreign operations	(29,853,603)	-	-	-	(29,853,603)
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	(41,995)	-	-	(41,995)
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	108,687	-	-	108,687
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	24,085	-	24,085
Transferred to initial carrying amount of hedged items	-	-	(20,265)	-	(20,265)
Share of other comprehensive income (loss) of subsidiaries and associates	(276,624)	2,947,368	-	-	2,670,744
Share of unearned stock-based employee compensation of subsidiaries and associates	-	-	-	190	190
Income tax effect	-	653	-	-	653
Balance, end of year	$ (57,001,627)	$ 2,321,754	$ -	$ -	$ (54,679,873)

The aforementioned other equity includes the changes in other equities of the Company and the Company's share of its subsidiaries and associates.

e. Treasury stock

For the Company's shareholders' interests, the Company's Board of Directors approved a share buyback plan on February 15, 2022 to repurchase 1,387 thousand shares during the period from February 16, 2022 to April 15, 2022. The shares purchased will be cancelled subsequently.

19. NET REVENUE

a. Disaggregation of revenue from contracts with customers

	Years Ended December 31	
Product	**2021**	**2020**
Wafer	$1,402,118,668	$1,161,829,728
Others	172,627,213	152,963,285
	$1,574,745,881	$1,314,793,013

	Years Ended December 31	
Geography	**2021**	**2020**
Taiwan	$ 203,963,760	$ 129,082,884
United States	1,011,932,438	809,731,866
China	164,552,063	233,783,358
Europe, the Middle East and Africa	89,010,064	70,213,432
Japan	71,920,856	63,299,176
Others	33,366,700	8,682,297
	$1,574,745,881	$1,314,793,013

The Company categorized the net revenue mainly based on the countries where the customers are headquartered.

Platform	Years Ended December 31 2021	2020
Smartphone	$ 689,533,461	$ 632,600,168
High Performance Computing	582,854,806	432,049,509
Internet of Things	132,006,238	108,814,310
Automotive	66,624,542	43,735,803
Digital Consumer Electronics	55,190,318	53,440,805
Others	48,536,516	44,152,418
	$1,574,745,881	$1,314,793,013

Resolution	Years Ended December 31 2021	2020
5-nanometer	$ 261,623,571	$ 89,433,830
7-nanometer	439,070,618	388,846,412
10-nanometer	656,748	3,341,769
16-nanometer	190,667,571	195,205,444
20-nanometer	5,650,015	8,298,531
28-nanometer	152,807,948	147,291,670
40/45-nanometer	103,286,953	101,979,651
65-nanometer	66,373,107	60,435,664
90-nanometer	32,234,476	29,036,165
0.11/0.13 micron	40,454,036	32,727,855
0.15/0.18 micron	86,589,003	84,997,377
0.25 micron and above	22,704,622	20,235,360
Wafer revenue	$1,402,118,668	$1,161,829,728

b. Contract balances

	December 31, 2021	December 31, 2020	January 1, 2020
Contract liabilities (classified under accrued expenses and other current liabilities)	$ 33,951,838	$ 9,365,661	$ 4,095,915

The changes in the contract liability balances primarily result from the timing difference between the satisfaction of performance obligation and the customer's payment.

The Company recognized revenue from the beginning balance of contract liability, which amounted to NT$ 8,737,297 thousand and NT$3,843,787 thousand for the years ended December 31, 2021 and 2020, respectively.

c. Temporary receipts from customers

	December 31, 2021
Current portion (classified under accrued expenses and other current liabilities)	$ 30,612,702
Noncurrent portion (classified under other noncurrent liabilities)	155,381,485
	$ 185,994,187

The Company's temporary receipts from customer are payments made by customers to the Company to retain the Company's capacity. When the terms and conditions set forth in the agreements are subsequently satisfied, the treatment of temporary receipts will be determined by mutual consent.

d. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms. As of December 31, 2021 and 2020, the aforementioned refund liabilities amounted to NT$39,493,180 thousand and NT$30,995,223 thousand (classified under accrued expenses and other current liabilities), respectively.

20. INTEREST INCOME

	Years Ended December 31	
	2021	2020
Interest income		
Bank deposits	$ 927,754	$ 951,877

21. FINANCE COSTS

	Years Ended December 31	
	2021	2020
Interest expense		
Corporate bonds	$ 2,368,729	$ 1,082,311
Lease liabilities	156,117	168,854
Bank loans	9,854	500,080
Others	21	15,052
	$ 2,534,721	$ 1,766,297

22. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2021	2020
Gain (loss) on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	$ (10,091,171)	$ 6,430,713
Other gains, net	257,813	184,449
	$ (9,833,358)	$ 6,615,162

23. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2021	2020
Current income tax expense		
Current tax expense recognized in the current year	$ 86,705,704	$ 70,657,349
Income tax adjustments on prior years	160,565	70,617
Other income tax adjustments	151,344	149,768
	87,017,613	70,877,734
Deferred income tax benefit		
The origination and reversal of temporary differences	(17,433,690)	(6,144,179)
Investment tax credits	(5,621,745)	-
	(23,055,435)	(6,144,179)
Income tax expense recognized in profit or loss	$ 63,962,178	$ 64,733,555

A reconciliation of income before income tax and income tax expense recognized in profit or loss was as follows:

	Years Ended December 31	
	2021	2020
Income before tax	$ 660,502,191	$ 582,618,942
Income tax expense at the statutory rate	$ 132,100,438	$ 116,523,788
Tax effect of adjusting items:		
Nondeductible items in determining taxable income	11,605,518	1,248,820
Tax-exempt income	(89,852,940)	(65,988,096)
Additional income tax under the Alternative Minimum Tax Act	32,852,688	18,872,837
The origination and reversal of temporary differences	(17,433,690)	(6,144,179)
Income tax credits	(5,621,745)	-
	63,650,269	64,513,170
Income tax adjustments on prior years	160,565	70,617
Other income tax adjustments	151,344	149,768
Income tax expense recognized in profit or loss	$ 63,962,178	$ 64,733,555

For the years ended December 31, 2021 and 2020, the Company applied a tax rate of 20% subject to the R.O.C. Income Tax Law.

b. Income tax expense recognized in other comprehensive income

	Years Ended December 31	
	2021	2020
Deferred income tax benefit (expense)		
Related to remeasurement of defined benefit obligation	$ (29,049)	$ 422,010
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	(56,220)	653
	$ (85,269)	$ 422,663

c. Deferred income tax balance

The analysis of deferred income tax assets and liabilities was as follows:

	December 31, 2021	December 31, 2020
Deferred income tax assets		
Temporary differences		
Depreciation	$ 34,146,437	$ 18,723,852
Refund liability	5,903,698	3,719,427
Investment tax credits	5,621,745	-
Net defined benefit liability	1,237,086	1,341,960
Unrealized loss on inventories	861,924	826,666
Investments in equity instruments at FVTOCI	10,100	66,320
	$ 47,780,990	$ 24,678,225
Deferred income tax liabilities		
Temporary differences		
Unrealized exchange gains	$ (706,311)	$ (866,452)
Others	(1,142,655)	(849,915)
	$ (1,848,966)	$ (1,716,367)

	Year Ended December 31, 2021			
		Recognized in		
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Balance, End of Year
Deferred income tax assets				
Temporary differences				
Depreciation	$ 18,723,852	$ 15,422,585	$ -	$ 34,146,437
Refund liability	3,719,427	2,184,271	-	5,903,698
Investment tax credits	-	5,621,745	-	5,621,745
Net defined benefit liability	1,341,960	(75,825)	(29,049)	1,237,086
Unrealized loss on inventories	826,666	35,258	-	861,924
Investments in equity instruments at FVTOCI	66,320	-	(56,220)	10,100
	$ 24,678,225	$ 23,188,034	$ (85,269)	$ 47,780,990

(Continued)

	Year Ended December 31, 2021			
		Recognized in		
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Balance, End of Year
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	$ (866,452)	$ 160,141	$ -	$ (706,311)
Others	(849,915)	(292,740)	-	(1,142,655)
	$ (1,716,367)	$ (132,599)	$ -	$ (1,848,966)

(Concluded)

	Year Ended December 31, 2020			
		Recognized in		
	Balance, Beginning of Year	Profit or Loss	Other Comprehensive Income	Balance, End of Year
Deferred income tax assets				
Temporary differences				
Depreciation	$ 12,927,764	$ 5,796,088	$ -	$ 18,723,852
Refund liability	2,120,873	1,598,554	-	3,719,427
Net defined benefit liability	1,016,248	(96,298)	422,010	1,341,960
Unrealized loss on inventories	437,327	389,339	-	826,666
Investments in equity instruments at FVTOCI	65,667	-	653	66,320
Others	160,743	(160,743)	-	-
	$ 16,728,622	$ 7,526,940	$ 422,663	$ 24,678,225
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	$ (333,606)	$ (532,846)	$ -	$ (866,452)
Others	-	(849,915)	-	(849,915)
	$ (333,606)	$ (1,382,761)	$ -	$ (1,716,367)

d. The deductible temporary differences for which no deferred income tax assets have been recognized

As of December 31, 2021 and 2020, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT$66,431,255 thousand and NT$55,521,034 thousand, respectively.

e. Unused tax-exemption information

As of December 31, 2021, the profits generated from the following project of the Company are exempt from income tax for a five-year period:

	Tax-exemption Period
Construction and expansion of 2009	2018 to 2022

f. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2021 and 2020, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT$177,552,831 thousand and NT$152,827,360 thousand, respectively.

g. Income tax examination

The tax authorities have examined income tax returns of the Company through 2019. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

24. EARNINGS PER SHARE

	Years Ended December 31	
	2021	2020
Basic EPS	$ 23.01	$ 19.97
Diluted EPS	$ 23.01	$ 19.97

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT$)
Year Ended December 31, 2021			
Basic/Diluted EPS			
Net income available to common shareholders	$ 596,540,013	25,930,380	$ 23.01
Year Ended December 31, 2020			
Basic/Diluted EPS			
Net income available to common shareholders	$ 517,885,387	25,930,380	$ 19.97

25. SHARE-BASED PAYMENT ARRANGEMENTS

a. Employee restricted stock awards

The issuance of employee restricted stock awards (RSAs) for year 2021 of no more than 2,600 thousand common shares has been approved by the Company's shareholders' meeting held on July 26, 2021. The grants will be made free of charge. Under the aforementioned resolution, the Company's Board of Directors approved the issuance of RSAs of 1,387 thousand shares. The grant date and the issuance date will be on March 1, 2022.

Vesting conditions of the aforementioned arrangement are as follow:

1) The RSAs granted to a key management personnel can only be vested if

- the key management personnel remains employed by the Company on the last date of each vesting period;

- during the vesting period, the key management personnel may not breach any agreement with the Company or violate the Company's work rules; and

- certain key management personnel performance metrics and the Company's business performance metrics are met.

2) The maximum percentage of granted RSAs that may be vested each year shall be as follows: one-year anniversary of the grant: 50%; two-year anniversary of the grant: 25%; and three-year anniversary of the grant: 25%; provided that the actual percentage and number of the RSAs to be vested in each year will be calculated based on the achievement of the Company's business performance metrics.

3) The maximum number of RSAs that may be vested in each year will be set as 110%, among which 100% will be subject to a calculation based on the Company's relative Total Shareholder Return ("TSR", including capital gains and dividends) achievement to determine the number of RSAs to be vested; this number will be further subject to a modifier to increase or decrease up to 10% based on the Compensation Committee's evaluation of the Company's Environmental, Social, and Governance ("ESG") achievements. The number of shares so calculated should be rounded down to the nearest integral.

The Company's TSR relative to the TSR of S&P 500 IT Index	**Ratio of Shares to be Vested**
Above the Index by X percentage points	50% + X * 2.5%, with the maximum of 100%
Equal to the Index	50%
Below the Index by X percentage points	50% - X * 2.5%, with the minimum of 0%

Restrictions imposed on the key management personnel' rights in the RSAs before the vesting conditions are fulfilled

1) During each vesting period, no key management personnel granted RSAs, except for inheritance, may sell, pledge, transfer, give to another person, create any encumbrance on, or otherwise dispose of, any shares under the unvested RSAs.

2) Before the vesting conditions are fulfilled, the attendance, proposal rights, speech rights, voting rights and etc. shall be exercised by the engaged trustee/custodian on the key management personnel's behalf. Any other shareholder rights including but not limited to the entitlement to any distribution regarding dividends, bonuses and capital reserve, and the subscription right of the new shares issued for any capital increase, are the same as those of holders of common shares of the Company.

3) Granted RSAs shall be deposited in a trust/custody account.

On February 15, 2022, the Company's Board of Directors approved the issuance of RSAs for year 2022 of no more than 2,960 thousand common shares. The grants will be made free of charge. The actual number of shares to be issued will be resolved by the Board of Directors after the RSAs is approved at the shareholders' meeting and by the competent authority.

b. Cash-settled share-based payment arrangements

In February 2022, the Company executed a compensation plan to grant no more than 236 thousand units of employee cash-settled share-based payment arrangement without consideration. One unit of the right represents a right to the market value of one the Company's common share when vested. The vesting conditions and the ratio of units to be vested for key management personnel of the plan are the same as the aforementioned RSAs for year 2021.

26. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	Years Ended December 31	
	2021	2020
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	$ 375,608,062	$ 288,762,450
Recognized in operating expenses	27,176,646	24,585,627
Recognized in other operating income and expenses	146,549	31,609
	$ 402,931,257	$ 313,379,686
b. Amortization of intangible assets		
Recognized in cost of revenue	$ 5,510,463	$ 4,732,478
Recognized in operating expenses	2,590,267	2,315,216
	$ 8,100,730	$ 7,047,694
c. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	$ 3,028,282	$ 2,309,527
Defined benefit plans	192,485	204,915
	3,220,767	2,514,442
Other employee benefits	143,894,842	123,287,720
	$ 147,115,609	$ 125,802,162
Employee benefits expense summarized by function		
Recognized in cost of revenue	$ 90,226,056	$ 75,864,049
Recognized in operating expenses	56,889,553	49,938,113
	$ 147,115,609	$ 125,802,162

According to the Company's Articles of Incorporation, the Company shall allocate compensation to directors and profit sharing bonus to employees of the Company not more than 0.3% and not less than 1% of annual profits during the period, respectively.

The Company accrued profit sharing bonus to employees based on a percentage of net income before income tax, profit sharing bonus to employees and compensation to directors during the period; compensation to directors was expensed based on estimated amount payable. If there is a change in the proposed amounts after the annual parent company only financial statements are authorized for issue, the differences are recorded as a change in accounting estimate. Accrued profit sharing bonus to employees is illustrated below:

	Years Ended December 31	
	2021	2020
Profit sharing bonus to employees	$ 35,601,449	$ 34,753,184

The Company's profit sharing bonus to employees and compensation to directors for 2021, 2020 and 2019 had been approved by the Board of Directors of the Company, as illustrated below:

	Years Ended December 31		
	2021	2020	2019
Resolution Date of the Company's Board of Directors in its meeting	**February 15, 2022**	**February 9, 2021**	**February 11, 2020**
Profit sharing bonus to employees	$ 35,601,449	$ 34,753,184	$ 23,165,745
Compensation to directors	$ 487,537	$ 509,753	$ 360,404

There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2021, 2020 and 2019, respectively.

The information about the appropriations of the Company's profit sharing bonus to employees and compensation to directors is available at the Market Observation Post System website.

27. CASH FLOW INFORMATION

a. Non-cash transactions

	Years Ended December 31	
	2021	2020
Additions of property, plant and equipment	$ 783,332,395	$ 512,900,891
Exchange of assets	(3,256,517)	(1,148)
Changes in payables to contractors and equipment suppliers	13,292,746	(18,609,540)
Transferred to initial carrying amount of hedged items	(41,416)	20,265
Payments for acquisition of property, plant and equipment	$ 793,327,208	$ 494,310,468
Additions of intangible assets	$ 9,278,760	$ 12,510,446
Changes in accounts payable	-	191,429
Changes in accrued expenses and other current liabilities	(280,676)	(3,218,966)
Payments for acquisition of intangible assets	$ 8,998,084	$ 9,482,909

b. Reconciliation of liabilities arising from financing activities

			Non-cash changes			
	Balance as of January 1, 2021	Financing Cash Flow	Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	Balance as of December 31, 2021
Short-term loans	$ 175,659,726	$ (50,538,933)	$ (9,670,786)	$ -	$ (528,674)	$ 114,921,333
Bonds payable	173,050,745	139,571,843	(466,391)	-	27,212	312,183,409
Lease liabilities	19,859,208	(1,622,246)	-	1,940,397	156,117	20,333,476
Total	$ 368,569,679	$ 87,410,664	$ (10,137,177)	$ 1,940,397	$ (345,345)	$ 447,438,218

			Non-cash changes			
	Balance as of January 1, 2020	Financing Cash Flow	Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	Balance as of December 31, 2020
Short-term loans	$ 148,510,290	$ 31,944,333	$ (4,794,897)	$ -	$ -	$ 175,659,726
Bonds payable	56,900,000	117,129,182	(986,845)	-	8,408	173,050,745
Lease liabilities	15,143,819	(2,324,499)	17,489	6,853,545	168,854	19,859,208
Total	$ 220,554,109	$ 146,749,016	$ (5,764,253)	$ 6,853,545	$ 177,262	$ 368,569,679

Note: Other changes include discounts on short-term loans, amortization of bonds payable and financial cost of lease liabilities.

28. CAPITAL MANAGEMENT

The Company requires significant amounts of capital to build and expand its production facilities and acquire additional equipment. In consideration of the industry dynamics, the Company manages its capital in a manner to ensure that it has sufficient and necessary financial resources to fund its working capital needs, capital asset purchases, research and development activities, dividend payments, debt service requirements and other business requirements associated with its existing operations over the next 12 months.

29. FINANCIAL INSTRUMENTS

a. Categories of financial instruments

	December 31, 2021	December 31, 2020
Financial assets		
FVTPL (Note 1)	$ 145,280	$ 2,125,825
FVTOCI (Note 2)	5,198,309	3,790,131
Amortized cost (Note 3)	586,299,180	440,992,185
	$ 591,642,769	$ 446,908,141
Financial liabilities		
FVTPL (Note 4)	$ 636,472	$ 93,153
Amortized cost (Note 5)	1,026,450,717	734,363,642
	$1,027,087,189	$ 734,456,795

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable (net) and equity investments.

Note 3: Including cash and cash equivalents, notes and accounts receivable (including related parties), other receivables and refundable deposits.

Note 4: Held for trading.

Note 5: Including short-term loans, accounts payable (including related parties), payables to contractors and equipment suppliers, cash dividends payable, accrued expenses and other current liabilities, bonds payable, guarantee deposits and other noncurrent liabilities.

b. Financial risk management objectives

The Company manages its exposure to foreign currency risk, interest rate risk, equity price risk, credit risk and liquidity risk with the objective to reduce the potentially adverse effects the market uncertainties may have on its financial performance.

The plans for material treasury activities are reviewed by the Audit Committees and/or Board of Directors in accordance with procedures required by relevant regulations or internal controls. During the implementation of such plans, the Company must comply with certain treasury procedures that provide guiding principles for overall financial risk management and segregation of duties.

c. Market risk

The Company is exposed to the financial market risks, primarily changes in foreign currency exchange rates, interest rates and equity investment prices. A portion of these risks is hedged.

Foreign currency risk

Substantially the Company's sales is denominated in U.S. dollars and over half of its capital expenditures are denominated in currencies other than NT dollars, primarily in U.S. dollars, Japanese yen and Euros. As a result, any significant fluctuations to its disadvantage in the exchanges rate of NT dollar against such currencies, in particular a weakening of U.S. dollar against NT dollars, would have an adverse impact on the revenue and operating profit as expressed in NT dollar. The Company uses foreign currency derivative contracts, such as currency forwards or currency swaps, to protect against currency exchange rate risks associated with non-NT dollar-denominated assets and liabilities and certain forecasted transactions. These hedges reduce, but do not entirely eliminate, the effect of foreign currency exchange rate movements on the assets and liabilities.

Based on a sensitivity analysis performed on the Company's total monetary assets and liabilities for the years ended December 31, 2021 and 2020, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT$1,196,014 thousand and NT$832,231 thousand, respectively, after taking into account hedges and offsetting positions.

Interest rate risk

The Company is exposed to interest rate risks primarily related to its bank deposits and bank loans. Changes in interest rates affect the interest earned on the Company's bank deposits, as well as the interest paid on its bank loans. Because all of the Company's bonds issued are fixed-rate and measured at amortized cost, changes in interest rates would not affect the future cash flows and the carrying amount.

Other price risk

The Company is exposed to equity price risk arising from financial assets at FVTOCI.

Assuming a hypothetical decrease of 10% in prices of the equity investments at the end of the reporting period for the years ended December 31, 2021 and 2020, the other comprehensive income would have decreased by NT$87,841 thousand and NT$73,464 thousand, respectively.

d. Credit risk management

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial losses to the Company. The Company is exposed to credit risks from operating activities, primarily accounts receivable, and from investing activities, primarily deposits, fixed-income investments and other financial instruments with banks. Credit risk is managed separately for business related and financial related exposures. As of the end of the reporting period, the Company's maximum credit risk exposure is equal to the carrying amount of financial assets.

Business related credit risk

The Company's accounts receivable are from its customers worldwide. The majority of the Company's outstanding accounts receivable are not covered by collaterals or guarantees. While the Company has procedures to monitor and manage credit risk exposure on accounts receivable, there is no assurance such procedures will effectively eliminate losses resulting from its credit risk. This risk is heightened during periods when economic conditions worsen.

As of December 31, 2021 and 2020, the Company's ten largest customers accounted for 67% of accounts receivable in both years. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

The Company mitigates its financial credit risk by selecting counterparties with investment-grade credit ratings and by limiting the exposure to any individual counterparty. The Company regularly monitors and reviews the limit applied to counterparties and adjusts the limit according to market conditions and the credit standing of the counterparties.

e. Liquidity risk management

The objective of liquidity risk management is to ensure the Company has sufficient liquidity to fund its business operations over the next 12 months. The Company manages its liquidity risk by maintaining adequate cash and cash equivalents and sufficient cost-efficient funding.

The table below summarizes the maturity profile of the Company's financial liabilities based on contractual undiscounted payments, including principal and interest.

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
December 31, 2021					
Non-derivative financial liabilities					
Short-term loans	$ 114,767,034	$ -	$ -	$ -	$ 114,767,034
Accounts payable (including related parties)	48,892,095	-	-	-	48,892,095
Payables to contractors and equipment suppliers	136,212,285	-	-	-	136,212,285
Accrued expenses and other current liabilities	105,867,008	-	-	-	105,867,008
Bonds payable	7,705,092	31,050,325	87,631,487	248,960,671	375,347,575
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	1,740,990	3,129,411	2,868,048	13,739,223	21,477,672
Others	-	164,991,929	-	-	164,991,929
	415,184,504	199,171,665	90,499,535	262,699,894	967,555,598
Derivative financial instruments					
Forward exchange contracts					
Outflows	132,106,866	-	-	-	132,106,866
Inflows	(132,001,910)	-	-	-	(132,001,910)
	104,956	-	-	-	104,956
	$ 415,289,460	$ 199,171,665	$ 90,499,535	$ 262,699,894	$ 967,660,554

(Continued)

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
December 31, 2020					
Non-derivative financial liabilities					
Short-term loans	$ 175,658,226	$ -	$ -	$ -	$ 175,658,226
Accounts payable (including related parties)	43,256,260	-	-	-	43,256,260
Payables to contractors and equipment suppliers	156,342,457	-	-	-	156,342,457
Accrued expenses and other current liabilities	56,090,322	-	-	-	56,090,322
Bonds payable	4,423,599	25,822,844	30,134,920	148,299,359	208,680,722
Lease liabilities (including those classified under accrued expenses and other current liabilities) (Note)	1,539,173	2,864,146	2,763,636	13,977,371	21,144,326
	437,310,037	28,686,990	32,898,556	162,276,730	661,172,313
Derivative financial instruments					
Forward exchange contracts					
Outflows	144,697,981	-	-	-	144,697,981
Inflows	(148,236,932)	-	-	-	(148,236,932)
	(3,538,951)	-	-	-	(3,538,951)
	$ 433,771,086	$ 28,686,990	$ 32,898,556	$ 162,276,730	$ 657,633,362

(Concluded)

Note: Information about the maturity analysis for lease liabilities more than 5 years:

	5-10 Years	10-15 Years	15-20 Years	More Than 20 Years	Total
December 31, 2021					
Lease liabilities	$ 6,665,672	$ 4,994,134	$ 1,959,928	$ 119,489	$ 13,739,223
December 31, 2020					
Lease liabilities	$ 6,498,231	$ 5,082,504	$ 2,242,373	$ 154,263	$ 13,977,371

f. Fair value of financial instruments

1) Fair value measurements recognized in the parent company only balance sheets

Fair value measurements are grouped into Levels 1 to 3 based on the degree to which the fair value is observable:

- Level 1 fair value measurements are those derived from quoted prices (unadjusted) in active markets for identical assets or liabilities;
- Level 2 fair value measurements are those derived from inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices); and
- Level 3 fair value measurements are those derived from valuation techniques that include inputs for the asset or liability that are not based on observable market data (unobservable inputs).

2) Fair value of financial instruments that are measured at fair value on a recurring basis

Fair value hierarchy

The following table presents the Company's financial assets and liabilities measured at fair value on a recurring basis:

	December 31, 2021		
	Level 2	**Level 3**	**Total**
Financial assets at FVTPL			
Mandatorily measured at FVTPL			
Forward exchange contracts	$ 145,280	$ -	$ 145,280
Financial assets at FVTOCI			
Investments in equity instruments			
Non-publicly traded equity investments	$ -	$ 998,400	$ 998,400
Notes and accounts receivable, net	4,199,909	-	4,199,909
	$ 4,199,909	$ 998,400	$ 5,198,309
Financial liabilities at FVTPL			
Held for trading			
Forward exchange contracts	$ 636,472	$ -	$ 636,472

	December 31, 2020		
	Level 2	**Level 3**	**Total**
Financial assets at FVTPL			
Mandatorily measured at FVTPL			
Forward exchange contracts	$ 2,125,825	$ -	$ 2,125,825
Financial assets at FVTOCI			
Investments in equity instruments			
Non-publicly traded equity investments	$ -	$ 834,830	$ 834,830
Notes and accounts receivable, net	2,955,301	-	2,955,301
	$ 2,955,301	$ 834,830	$ 3,790,131
Financial liabilities at FVTPL			
Held for trading			
Forward exchange contracts	$ 93,153	$ -	$ 93,153

Reconciliation of Level 3 fair value measurements of financial assets

The financial assets measured at Level 3 fair value were equity investments classified as financial assets at FVTOCI. Reconciliations for the years ended December 31, 2021 and 2020 were as follows:

	Years Ended December 31	
	2021	**2020**
Balance, beginning of year	$ 834,830	$ 877,110
Recognized in other comprehensive income	170,127	(41,995)
Disposals and proceeds from return of capital of investments	(6,557)	(285)
Balance, end of year	$ 998,400	$ 834,830

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair values of financial assets and financial liabilities are determined as follows:

- Forward exchange contracts are measured using forward exchange rates and discount rates derived from quoted market prices.

- The fair value of accounts receivable classified as at FVTOCI is determined by the present value of future cash flows based on the discount rate that reflects the credit risk of counterparties.

Valuation techniques and assumptions used in Level 3 fair value measurement

The fair values of non-publicly traded equity investments are mainly determined by using the asset approach and market approach.

The asset approach takes into account the net asset value measured at the fair value by independent parties.

The market approach is used to arrive at their fair values, for which the recent financing activities of investees, the market transaction prices of the similar companies and market conditions are considered.

3) Fair value of financial instruments that are not measured at fair value

Except as detailed in the following table, the Company considers that the carrying amounts of financial instruments in the parent company only financial statements that are not measured at fair value approximate their fair values.

Fair value hierarchy

The table below sets out the fair value hierarchy for the Company's financial assets and liabilities which are not required to be measured at fair value:

	December 31, 2021	
	Carrying Amount	**Level 2 Fair Value**
Financial liabilities		
Financial liabilities at amortized costs		
Bonds payable	$ 312,183,409	$ 310,632,379

(Continued)

	December 31, 2020	
	Carrying Amount	Level 2 Fair Value
Financial liabilities		
Financial liabilities at amortized costs		
Bonds payable	$ 173,050,745	$ 173,972,033

(Concluded)

Valuation techniques and assumptions used in Level 2 fair value measurement

The fair value of the Company's bonds payable is determined by quoted market prices provided by third party pricing services.

30. RELATED PARTY TRANSACTIONS

The significant transactions between the Company and its related parties, other than those disclosed in other notes, are summarized as follows:

a. Related party name and categories

Related Party Name	Related Party Categories
TSMC Global	Subsidiaries
TSMC China	Subsidiaries
TSMC Nanjing	Subsidiaries
TSMC Arizona	Subsidiaries
VisEra Tech	Subsidiaries
TSMC North America	Subsidiaries
TSMC Europe	Subsidiaries
TSMC JDC	Subsidiaries
TSMC 3DIC	Subsidiaries
JASM	Subsidiaries
TSMC Japan	Subsidiaries
TSMC Korea	Subsidiaries
TSMC Design Technology Canada Inc. (TSMC Canada)	Indirect Subsidiaries
TSMC Technology, Inc. (TSMC Technology)	Indirect Subsidiaries
WaferTech, LLC (WaferTech)	Indirect Subsidiaries
GUC	Associates
VIS	Associates
SSMC	Associates
Xintec	Associates
TSMC Education and Culture Foundation	Other related parties
TSMC Charity Foundation	Other related parties

b. Net revenue

Item	Related Party Name/Categories	Years Ended December 31 2021	Years Ended December 31 2020
Net revenue from sale of goods	TSMC North America	$1,040,985,786	$ 824,139,751
	Associates	5,898,780	5,656,748
	Other subsidiaries	110,849	85,147
		$1,046,995,415	$ 829,881,646
Net revenue from royalties	Subsidiaries	$ 243	$ 214,352
	Associates	223,196	195,111
		$ 223,439	$ 409,463

c. Purchases

Related Party Categories	Years Ended December 31 2021	Years Ended December 31 2020
Subsidiaries	$ 56,134,681	$ 44,920,702
Associates	7,569,787	7,605,080
	$ 63,704,468	$ 52,525,782

d. Receivables from related parties

Item	Related Party Name/Categories	December 31, 2021	December 31, 2020
Receivables from related parties	TSMC North America	$ 137,956,681	$ 101,467,381
	Associates	391,647	313,064
	Other subsidiaries	4,046	729
		$ 138,352,374	$ 101,781,174
Other receivables from related parties	TSMC North America	$ 5,000,563	$ 1,390,902
	TSMC Nanjing	59,935	203,209
	Other subsidiaries	105,396	71,058
	Associates	61,531	49,165
		$ 5,227,425	$ 1,714,334

e. Payables to related parties

Item	Related Party Name/Categories	December 31, 2021	December 31, 2020
Payables to related parties	TSMC Nanjing	$ 2,761,080	$ 1,889,906
	TSMC China	1,802,314	1,643,070
	Xintec	725,261	1,358,624
	Other subsidiaries	1,687,157	1,376,983
	Other associates	711,861	749,040
		$ 7,687,673	$ 7,017,623

f. Accrued expenses and other current liabilities

Item	Related Party Name/Categories	December 31, 2021	December 31, 2020
Other payables and other current liabilities	Subsidiaries	$ 1,389,861	$ 318,654
	Associates	726,350	-
		$ 2,116,211	$ 318,654
Temporary receipts	TSMC North America	$ 20,650,062	$ -

g. Other noncurrent liabilities

Item	Related Party Name	December 31, 2021	December 31, 2020
Temporary receipts	TSMC North America	$ 127,361,560	$ -

h. Disposal of property, plant and equipment

	Proceeds	
	Years Ended December 31	
Related Party Name/Categories	2021	2020
TSMC Nanjing	$ 102,721	$ 527,134
Other subsidiaries	21,103	6,115
	$ 123,824	$ 533,249

	Gains	
	Years Ended December 31	
	2021	2020
Related Party Name/Categories		
TSMC Nanjing	$ 24,765	$ 31,494
Other subsidiaries	38,931	49,844
	$ 63,696	$ 81,338

	Deferred Gains (Losses) from Disposal of Property, Plant and Equipment	
	December 31, 2021	December 31, 2020
Related Party Name/Categories		
TSMC Nanjing	$ 50,816	$ 4,221
Other subsidiaries	67,783	86,186
	$118,599	$ 90,407

i. Others

		Years Ended December 31	
		2021	2020
Item	Related Party Name/Categories		
Manufacturing expenses	Associates	$ 5,445,819	$ 5,425,878
	Subsidiaries	20,791	29,700
		$ 5,466,610	$ 5,455,578
Research and development expenses	Subsidiaries	$ 3,719,115	$ 3,409,037
	Associates	252,054	256,496
		$ 3,971,169	$ 3,665,533
Marketing expenses - commission	TSMC Europe	$ 465,783	$ 735,295
	Other subsidiaries	517,205	474,553
		$ 982,988	$ 1,209,848

The sales prices and payment terms to related parties were not significantly different from those of sales to third parties. For other related party transactions, price and terms were determined in accordance with mutual agreements.

The Company leased factory and office from associates. The lease terms and prices were both determined in accordance with mutual agreements. The rental expenses were paid to associates monthly; the related expenses were both classified under manufacturing expenses.

The Company deferred the disposal gain or loss derived from sales of property, plant and equipment to

related parties using equity method, and then recognized such gain or loss over the depreciable lives of the disposed assets.

j. Compensation of key management personnel

The compensation to directors and other key management personnel were as follows:

	Years Ended December 31	
	2021	2020
Short-term employee benefits	$ 2,768,725	$ 2,567,833
Post-employment benefits	2,458	1,951
	$ 2,771,183	$ 2,569,784

The compensation to directors and other key management personnel were determined by the Compensation Committee of the Company in accordance with the individual performance and the market trends.

31. SIGNIFICANT CONTINGENT LIABILITIES AND UNRECOGNIZED COMMITMENTS

Significant contingent liabilities and unrecognized commitments of the Company as of the end of the reporting period, excluding those disclosed in other notes, were as follows:

a. Under a technical cooperation agreement with Industrial Technology Research Institute, the R.O.C. Government or its designee approved by the Company can use up to 35% of the Company's capacity provided the Company's outstanding commitments to its customers are not prejudiced. The term of this agreement is for five years beginning from January 1, 1987 and is automatically renewed for successive periods of five years unless otherwise terminated by either party with one year prior notice. As of December 31, 2021, the R.O.C. Government did not invoke such right.

b. Under a Shareholders Agreement entered into with Philips and EDB Investments Pte Ltd. on March 30, 1999, the parties formed a joint venture company, SSMC, which is an integrated circuit foundry in Singapore. The Company's equity interest in SSMC was 32%. Nevertheless, in September 2006, Philips spun-off its semiconductor subsidiary which was renamed as NXP B.V. Further, the Company and NXP B.V. purchased all the SSMC shares owned by EDB Investments Pte Ltd. pro rata according to the Shareholders Agreement on November 15, 2006. After the purchase, the Company and NXP B.V. currently own approximately 39% and 61% of the SSMC shares, respectively. The Company and NXP B.V. are required, in the aggregate, to purchase at least 70% of SSMC's capacity, but the Company alone is not required to purchase more than 28% of the capacity. If any party defaults on the commitment and the capacity utilization of SSMC falls below a specific percentage of its capacity, the defaulting party is required to compensate SSMC for all related unavoidable costs. There was no default from the aforementioned commitment as of December 31, 2021.

c. The Company entered into long-term purchase agreements of materials and supplies and agreements of waste disposal with multiple suppliers. The relative minimum fulfillment quantity and price are specified in the agreements.

d. The Company entered into a long-term purchase agreement of equipment. The relative fulfillment quantity and price are specified in the agreement.

e. The Company entered into long-term energy purchase agreements with multiple suppliers. The relative fulfillment period, quantity and price are specified in the agreements.

f. As of December 31, 2021, the Company provided endorsement guarantees of NT$2,302,845 thousand to

its subsidiary, TSMC North America, in respect of providing endorsement guarantees for office leasing contract.

g. As of December 31, 2021, the Company provided a NT$207,555,000 thousand endorsement guarantee for its subsidiary, TSMC Global, in respect of its issuance of US dollar-denominated senior unsecured corporate bonds.

h. As of December 31, 2021, the Company provided a NT$222,289,191 thousand endorsement guarantee for its subsidiary, TSMC Arizona, in respect of its issuance of US dollar-denominated senior unsecured corporate bonds and operation needs.

32. EXCHANGE RATE INFORMATION OF FOREIGN-CURRENCY FINANCIAL ASSETS AND LIABILITIES

The following information was summarized according to the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	Foreign Currencies (In Thousands)	Exchange Rate (Note)	Carrying Amount (In Thousands)
December 31, 2021			
Financial assets			
Monetary items			
USD	$ 11,386,512	27.674	$ 315,110,347
EUR	14,420	31.460	453,666
JPY	10,673,383	0.2414	2,576,555
Financial liabilities			
Monetary items			
USD	11,851,225	27.674	327,970,810
EUR	3,494,588	31.460	109,939,747
JPY	109,729,158	0.2414	26,488,619
December 31, 2020			
Financial assets			
Monetary items			
USD	6,556,606	28.097	184,220,958
EUR	10,505	34.587	363,340
JPY	83,135,801	0.2729	22,687,760
Financial liabilities			
Monetary items			
USD	6,906,646	28.097	194,056,024
EUR	4,146,458	34.587	143,413,558
JPY	103,973,930	0.2729	28,374,485

Note: Exchange rate represents the number of NT dollar for which one foreign currency could be exchanged.

Please refer to the parent company only statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss for the years ended December 31, 2021 and 2020, respectively. Since there were varieties of foreign currency transactions of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

33. ADDITIONAL DISCLOSURES

Following are the additional disclosures required by the Securities and Futures Bureau for the Company:

a. Financings provided: See Table 1 attached;

b. Endorsement/guarantee provided: See Table 2 attached;

c. Marketable securities held (excluding investments in subsidiaries and associates): See Table 3 attached;

d. Marketable securities acquired and disposed of at costs or prices of at least NT$300 million or 20% of the paid-in capital: See Table 4 attached;

e. Acquisition of individual real estate properties at costs of at least NT$300 million or 20% of the paid-in capital: See Table 5 attached;

f. Disposal of individual real estate properties at prices of at least NT$300 million or 20% of the paid-in capital: None;

g. Total purchases from or sales to related parties of at least NT$100 million or 20% of the paid-in capital: See Table 6 attached;

h. Receivables from related parties amounting to at least NT$100 million or 20% of the paid-in capital: See Table 7 attached;

i. Information about the derivative financial instruments transaction: See Notes 7 and 8;

j. Names, locations, and related information of investees over which the Company exercises significant influence (excluding information on investment in mainland China): See Table 8 attached;

k. Information on investment in mainland China

   1) The name of the investee in mainland China, the main businesses and products, its issued capital, method of investment, information on inflow or outflow of capital, percentage of ownership, income (losses) of the investee, share of profits/losses of investee, ending balance, amount received as dividends from the investee, and the limitation on investee: See Table 9 attached.

   2) Significant direct or indirect transactions with the investee, its prices and terms of payment, unrealized gain or loss, and other related information which is helpful to understand the impact of investment in mainland China on financial reports: See Note 30.

l. Information of major shareholder

   List of all shareholders with ownership of 5 percent or greater showing the names and the number of shares and percentage of ownership held by each shareholder: See Table 10 attached.

34. OPERATING SEGMENTS INFORMATION

The Company has provided the operating segments disclosure in the consolidated financial statements.

Taiwan Semiconductor Manufacturing Company Limited and Investees

FINANCINGS PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Financing Company	Counterparty	Financial Statement Account	Related Party	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Interest Rate	Nature for Financing	Transaction Amounts	Reason for Financing	Allowance for Bad Debt	Collateral		Financing Limits for Each Borrowing Company (Notes 1 and 2)	Financing Company's Total Financing Amount Limits (Notes 1 and 2)
													Item	Value		
1	TSMC China	TSMC Nanjing	Other receivables from related parties	Yes	$ 55,669,760 (RMB 10,600,000) & (US$ 350,000)	$ 33,979,260 (RMB 5,600,000) & (US$ 350,000)	$ 24,293,360 (RMB 5,600,000)	1.30%-1.50%	The need for short-term and long-term financing	$ -	Operating capital	$ -	-	$ -	$ 73,690,307	$ 73,690,307
2	TSMC Global	TSMC	Other receivables from related parties	Yes	102,393,800 (US$ 3,700,000)	-	-	0.00%	The need for short-term financing	-	Operating capital	-	-	-	749,278,812	749,278,812

Note 1: The aggregate amount available for lending to TSMC Nanjing from TSMC China shall not exceed the net worth of TSMC China.

Note 2: The aggregate amount available for lending to TSMC from TSMC Global shall not exceed two times (200%) of the net worth of TSMC Global.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

Taiwan Semiconductor Manufacturing Company Limited and Investees

ENDORSEMENTS/GUARANTEES PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Endorsement/ Guarantee Provider	Guaranteed Party		Limits on Endorsement/ Guarantee Amount Provided to Each Guaranteed Party (Notes 1 and 2)	Maximum Balance for the Period (Foreign Currencies in Thousands) (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (Foreign Currencies in Thousands)	Amount of Endorsement/ Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Notes 1 and 2)	Guarantee Provided by Parent Company	Guarantee Provided by A Subsidiary	Guarantee Provided to Subsidiaries in Mainland China
		Name	Nature of Relationship										
0	TSMC	TSMC North America	Subsidiary	$ 542,071,638	$ 2,302,845 (US$ 83,213)	$ 2,302,845 (US$ 83,213)	$ 2,302,845 (US$ 83,213)	$ -	0.11%	$ 542,071,638	Yes	No	No
		TSMC Global	Subsidiary	542,071,638	207,555,000 (US$ 7,500,000)	207,555,000 (US$ 7,500,000)	179,881,000 (US$ 6,500,000)	-	9.57%	542,071,638	Yes	No	No
		TSMC Arizona	Subsidiary	542,071,638	222,289,191 (US$ 8,032,420)	222,289,191 (US$ 8,032,420)	125,430,191 (US$ 4,532,420)	-	10.25%	542,071,638	Yes	No	No
1	TSMC Japan	TSMC JDC	The same parent company	331,028	318,648 (JPY 1,320,000)	318,648 (JPY 1,320,000)	318,648 (JPY 1,320,000)	-	0.01%	331,028	No	No	No

Note 1: The total amount of the endorsement/guarantee provided by TSMC to TSMC North America, TSMC Global and TSMC Arizona shall not exceed twenty-five percent (25%) of TSMC's net worth.

Note 2: The total amount of the endorsement/guarantee provided by TSMC Japan to TSMC JDC shall not exceed two hundred and fifty percent (250%) of TSMC Japan's net worth.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES HELD
DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC	Non-publicly traded equity investments							
	United Industrial Gases Co., Ltd.	-	Financial assets at fair value through other comprehensive income	21,230	$ 497,641	10	$ 497,641	
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	〃	10,500	387,072	7	387,072	
	Global Investment Holding Inc.	-	〃	10,442	111,441	6	111,441	
	Crimson Asia Capital	-	〃	-	2,246	1	2,246	
TSMC Partners	Non-publicly traded equity investments							
	Shanghai Walden Venture Capital Enterprise	-	Financial assets at fair value through other comprehensive income	-	US$ 45,254	6	US$ 45,254	
	China Walden Venture Investments II, L.P.	-	〃	-	US$ 16,456	9	US$ 16,456	
	China Walden Venture Investments III, L.P.	-	〃	-	US$ 11,755	4	US$ 11,755	
	Movella Inc.	-	〃	6,333	-	10	-	
	Tela Innovations	-	〃	6,942	-	22	-	
TSMC Global	Corporate bond							
	Bank of America Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 75,265	N/A	US$ 75,265	
	Morgan Stanley	-	〃	-	US$ 65,115	N/A	US$ 65,115	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 53,756	N/A	US$ 53,756	
	Citigroup Inc.	-	〃	-	US$ 49,298	N/A	US$ 49,298	
	JPMorgan Chase & Co.	-	〃	-	US$ 45,332	N/A	US$ 45,332	
	Wells Fargo & Company	-	〃	-	US$ 38,439	N/A	US$ 38,439	
	AbbVie Inc.	-	〃	-	US$ 37,531	N/A	US$ 37,531	
	Mitsubishi UFJ Financial Group, Inc.	-	〃	-	US$ 31,881	N/A	US$ 31,881	
	Sumitomo Mitsui Financial Group, Inc.	-	〃	-	US$ 27,669	N/A	US$ 27,669	
	HSBC Holdings plc	-	〃	-	US$ 26,960	N/A	US$ 26,960	
	Athene Global Funding	-	〃	-	US$ 25,606	N/A	US$ 25,606	
	Lloyds Banking Group plc	-	〃	-	US$ 21,675	N/A	US$ 21,675	
	BNP Paribas SA	-	〃	-	US$ 21,320	N/A	US$ 21,320	
	Apple Inc.	-	〃	-	US$ 20,502	N/A	US$ 20,502	
	Hyundai Capital America, Inc.	-	〃	-	US$ 19,683	N/A	US$ 19,683	
	Nordea Bank Abp	-	〃	-	US$ 19,605	N/A	US$ 19,605	
	Oracle Corporation	-	〃	-	US$ 19,448	N/A	US$ 19,448	
	Banco Santander, S.A.	-	〃	-	US$ 18,461	N/A	US$ 18,461	
	Volkswagen Group of America Finance, LLC	-	〃	-	US$ 18,205	N/A	US$ 18,205	
	AT&T Inc.	-	〃	-	US$ 17,883	N/A	US$ 17,883	
	Metropolitan Life Global Funding I	-	〃	-	US$ 17,341	N/A	US$ 17,341	
	Sumitomo Mitsui Trust Bank, Limited	-	〃	-	US$ 16,182	N/A	US$ 16,182	
	NatWest Markets Plc	-	〃	-	US$ 16,070	N/A	US$ 16,070	
	Credit Suisse AG, New York Branch	-	〃	-	US$ 15,372	N/A	US$ 15,372	
	The Toronto-Dominion Bank	-	〃	-	US$ 14,786	N/A	US$ 14,786	
	Toyota Motor Credit Corporation	-	〃	-	US$ 14,567	N/A	US$ 14,567	
	Deutsche Bank AG - New York Branch	-	〃	-	US$ 14,423	N/A	US$ 14,423	
	Mizuho Financial Group, Inc.	-	〃	-	US$ 13,999	N/A	US$ 13,999	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Standard Chartered PLC	-	Financial assets at fair value through other comprehensive income	-	US$ 13,484	N/A	US$ 13,484	
	Principal Life Global Funding II	-	〃	-	US$ 13,462	N/A	US$ 13,462	
	Macquarie Group Limited	-	〃	-	US$ 13,190	N/A	US$ 13,190	
	Royal Bank of Canada	-	〃	-	US$ 13,159	N/A	US$ 13,159	
	Barclays PLC	-	〃	-	US$ 13,019	N/A	US$ 13,019	
	AIG Global Funding	-	〃	-	US$ 12,808	N/A	US$ 12,808	
	Nationwide Building Society	-	〃	-	US$ 12,794	N/A	US$ 12,794	
	Banque Fédérative du Crédit Mutuel Société anonyme	-	〃	-	US$ 12,731	N/A	US$ 12,731	
	NTT Finance Corporation	-	〃	-	US$ 12,546	N/A	US$ 12,546	
	Equitable Financial Life Global Funding	-	〃	-	US$ 12,485	N/A	US$ 12,485	
	Capital One Financial Corporation	-	〃	-	US$ 12,063	N/A	US$ 12,063	
	BPCE SA	-	〃	-	US$ 11,849	N/A	US$ 11,849	
	National Securities Clearing Corporation	-	〃	-	US$ 11,771	N/A	US$ 11,771	
	Amazon.com, Inc.	-	〃	-	US$ 11,711	N/A	US$ 11,711	
	Société Générale Société anonyme	-	〃	-	US$ 11,448	N/A	US$ 11,448	
	Protective Life Global Funding	-	〃	-	US$ 11,256	N/A	US$ 11,256	
	Intel Corporation	-	〃	-	US$ 11,221	N/A	US$ 11,221	
	Verizon Communications Inc.	-	〃	-	US$ 10,971	N/A	US$ 10,971	
	Santander UK Group Holdings plc	-	〃	-	US$ 10,463	N/A	US$ 10,463	
	Chevron Corporation	-	〃	-	US$ 10,326	N/A	US$ 10,326	
	Fédération des caisses Desjardins du Québec	-	〃	-	US$ 10,055	N/A	US$ 10,055	
	ING Groep N.V.	-	〃	-	US$ 10,028	N/A	US$ 10,028	
	U.S. Bancorp	-	〃	-	US$ 9,799	N/A	US$ 9,799	
	Roper Technologies, Inc.	-	〃	-	US$ 9,790	N/A	US$ 9,790	
	Daimler Trucks Finance North America LLC	-	〃	-	US$ 9,675	N/A	US$ 9,675	
	Merck & Co., Inc.	-	〃	-	US$ 9,625	N/A	US$ 9,625	
	Bristol-Myers Squibb Company	-	〃	-	US$ 9,412	N/A	US$ 9,412	
	Equinor ASA	-	〃	-	US$ 9,213	N/A	US$ 9,213	
	Canadian Imperial Bank of Commerce	-	〃	-	US$ 9,075	N/A	US$ 9,075	
	NIKE, Inc.	-	〃	-	US$ 8,867	N/A	US$ 8,867	
	New York Life Global Funding	-	〃	-	US$ 8,801	N/A	US$ 8,801	
	The Bank of Nova Scotia	-	〃	-	US$ 8,543	N/A	US$ 8,543	
	Danske Bank A/S	-	〃	-	US$ 8,362	N/A	US$ 8,362	
	KfW	-	〃	-	US$ 8,258	N/A	US$ 8,258	
	UnitedHealth Group Incorporated	-	〃	-	US$ 8,213	N/A	US$ 8,213	
	Guardian Life Global Funding	-	〃	-	US$ 8,171	N/A	US$ 8,171	
	AstraZeneca Finance LLC	-	〃	-	US$ 8,123	N/A	US$ 8,123	
	International Bank for Reconstruction and Development	-	〃	-	US$ 8,107	N/A	US$ 8,107	
	ASB Bank Limited	-	〃	-	US$ 8,030	N/A	US$ 8,030	
	Great-West Lifeco U.S. Finance 2020, Lp	-	〃	-	US$ 7,944	N/A	US$ 7,944	
	Inter-American Development Bank	-	〃	-	US$ 7,937	N/A	US$ 7,937	
	Suncorp-Metway Limited	-	〃	-	US$ 7,846	N/A	US$ 7,846	
	Nomura Holdings, Inc.	-	〃	-	US$ 7,818	N/A	US$ 7,818	
	Equifax Inc.	-	〃	-	US$ 7,807	N/A	US$ 7,807	
	Pacific Life Global Funding II	-	〃	-	US$ 7,543	N/A	US$ 7,543	
	Santander UK plc	-	〃	-	US$ 7,428	N/A	US$ 7,428	
	Credit Agricole SA London Branch	-	〃	-	US$ 7,342	N/A	US$ 7,342	
	Intuit Inc.	-	〃	-	US$ 7,231	N/A	US$ 7,231	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	AstraZeneca PLC	-	Financial assets at fair value through other comprehensive income	-	US$ 7,128	N/A	US$ 7,128	
	SMBC Aviation Capital Finance DAC	-	〃	-	US$ 7,006	N/A	US$ 7,006	
	Prudential Funding Corp.	-	〃	-	US$ 6,971	N/A	US$ 6,971	
	Cargill, Incorporated	-	〃	-	US$ 6,566	N/A	US$ 6,566	
	Credit Suisse Group AG	-	〃	-	US$ 6,485	N/A	US$ 6,485	
	Discover Bank (New Castle, Delaware)	-	〃	-	US$ 6,471	N/A	US$ 6,471	
	Banco Bilbao Vizcaya Argentaria, S.A.	-	〃	-	US$ 6,373	N/A	US$ 6,373	
	Montpelier Re Holdings Ltd.	-	〃	-	US$ 6,371	N/A	US$ 6,371	
	UBS Group Funding (Switzerland) AG	-	〃	-	US$ 6,370	N/A	US$ 6,370	
	Bank of Montreal	-	〃	-	US$ 6,295	N/A	US$ 6,295	
	Huntington Bancshares Incorporated	-	〃	-	US$ 6,275	N/A	US$ 6,275	
	Exxon Mobil Corporation	-	〃	-	US$ 6,254	N/A	US$ 6,254	
	ANZ New Zealand (Int'l) Limited	-	〃	-	US$ 6,211	N/A	US$ 6,211	
	Scentre Group Trust 1	-	〃	-	US$ 6,200	N/A	US$ 6,200	
	Enel Finance International N.V.	-	〃	-	US$ 6,118	N/A	US$ 6,118	
	The Bank of New York Mellon Corporation	-	〃	-	US$ 6,072	N/A	US$ 6,072	
	Fox Corporation	-	〃	-	US$ 6,052	N/A	US$ 6,052	
	Macquarie Bank Limited	-	〃	-	US$ 5,991	N/A	US$ 5,991	
	WPP Finance 2010	-	〃	-	US$ 5,950	N/A	US$ 5,950	
	Shire Acquisitions Investments Ireland Designated Activity Company	-	〃	-	US$ 5,929	N/A	US$ 5,929	
	UBS AG, London Branch	-	〃	-	US$ 5,880	N/A	US$ 5,880	
	Siemens Financieringsmaatschappij N.V.	-	〃	-	US$ 5,871	N/A	US$ 5,871	
	W. P. Carey Inc.	-	〃	-	US$ 5,763	N/A	US$ 5,763	
	Alabama Power Company	-	〃	-	US$ 5,704	N/A	US$ 5,704	
	Cox Communications, Inc.	-	〃	-	US$ 5,649	N/A	US$ 5,649	
	UBS Group AG	-	〃	-	US$ 5,526	N/A	US$ 5,526	
	Fiserv, Inc.	-	〃	-	US$ 5,463	N/A	US$ 5,463	
	CenterPoint Energy, Inc.	-	〃	-	US$ 5,359	N/A	US$ 5,359	
	Roche Holdings, Inc.	-	〃	-	US$ 5,327	N/A	US$ 5,327	
	Five Corners Funding Trust	-	〃	-	US$ 5,299	N/A	US$ 5,299	
	CGI Inc.	-	〃	-	US$ 5,222	N/A	US$ 5,222	
	Capital One, National Association	-	〃	-	US$ 5,202	N/A	US$ 5,202	
	Credit Suisse Group Funding (Guernsey) Limited	-	〃	-	US$ 5,133	N/A	US$ 5,133	
	Sprint Spectrum Co Llc	-	〃	-	US$ 4,958	N/A	US$ 4,958	
	HP Inc.	-	〃	-	US$ 4,897	N/A	US$ 4,897	
	DNB Bank ASA	-	〃	-	US$ 4,836	N/A	US$ 4,836	
	Northwestern Mutual Global Funding	-	〃	-	US$ 4,789	N/A	US$ 4,789	
	Jackson National Life Global Funding	-	〃	-	US$ 4,713	N/A	US$ 4,713	
	Intercontinental Exchange, Inc.	-	〃	-	US$ 4,706	N/A	US$ 4,706	
	Comcast Corporation	-	〃	-	US$ 4,658	N/A	US$ 4,658	
	American International Group, Inc.	-	〃	-	US$ 4,604	N/A	US$ 4,604	
	NatWest Group plc	-	〃	-	US$ 4,583	N/A	US$ 4,583	
	Thermo Fisher Scientific Inc.	-	〃	-	US$ 4,570	N/A	US$ 4,570	
	Bank of New Zealand	-	〃	-	US$ 4,570	N/A	US$ 4,570	
	AvalonBay Communities, Inc.	-	〃	-	US$ 4,499	N/A	US$ 4,499	
	Eversource Energy	-	〃	-	US$ 4,477	N/A	US$ 4,477	
	OGE Energy Corp.	-	〃	-	US$ 4,428	N/A	US$ 4,428	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Florida Power & Light Company	-	Financial assets at fair value through other comprehensive income	-	US$ 4,383	N/A	US$ 4,383	
	Swedbank AB (publ)	-	〃	-	US$ 4,334	N/A	US$ 4,334	
	7-Eleven, Inc.	-	〃	-	US$ 4,301	N/A	US$ 4,301	
	Pioneer Natural Resources Company	-	〃	-	US$ 4,210	N/A	US$ 4,210	
	Daimler Finance North America LLC	-	〃	-	US$ 4,206	N/A	US$ 4,206	
	Fidelity National Information Services, Inc.	-	〃	-	US$ 4,204	N/A	US$ 4,204	
	Element Fleet Management Corp.	-	〃	-	US$ 4,200	N/A	US$ 4,200	
	Coöperatieve Rabobank U.A.	-	〃	-	US$ 4,194	N/A	US$ 4,194	
	Public Storage	-	〃	-	US$ 4,078	N/A	US$ 4,078	
	Svenska Handelsbanken AB (publ)	-	〃	-	US$ 4,074	N/A	US$ 4,074	
	European Bank for Reconstruction and Development	-	〃	-	US$ 4,069	N/A	US$ 4,069	
	Exelon Corporation	-	〃	-	US$ 4,063	N/A	US$ 4,063	
	MPLX LP	-	〃	-	US$ 4,040	N/A	US$ 4,040	
	Ameren Corporation	-	〃	-	US$ 4,028	N/A	US$ 4,028	
	American Express Credit Corporation	-	〃	-	US$ 4,007	N/A	US$ 4,007	
	CNO Global Funding	-	〃	-	US$ 4,007	N/A	US$ 4,007	
	B.A.T. International Finance p.l.c.	-	〃	-	US$ 4,005	N/A	US$ 4,005	
	Appalachian Power Company	-	〃	-	US$ 3,978	N/A	US$ 3,978	
	Coca-Cola Europacific Partners PLC	-	〃	-	US$ 3,975	N/A	US$ 3,975	
	Dominion Energy, Inc.	-	〃	-	US$ 3,899	N/A	US$ 3,899	
	BorgWarner Inc.	-	〃	-	US$ 3,856	N/A	US$ 3,856	
	V.F. Corporation	-	〃	-	US$ 3,830	N/A	US$ 3,830	
	Bayer US Finance II LLC	-	〃	-	US$ 3,802	N/A	US$ 3,802	
	Fifth Third Bancorp	-	〃	-	US$ 3,725	N/A	US$ 3,725	
	Public Service Electric and Gas Company	-	〃	-	US$ 3,714	N/A	US$ 3,714	
	The Charles Schwab Corporation	-	〃	-	US$ 3,669	N/A	US$ 3,669	
	Truist Bank	-	〃	-	US$ 3,655	N/A	US$ 3,655	
	Monongahela Power Company	-	〃	-	US$ 3,652	N/A	US$ 3,652	
	Welltower Inc.	-	〃	-	US$ 3,634	N/A	US$ 3,634	
	Ross Stores, Inc.	-	〃	-	US$ 3,608	N/A	US$ 3,608	
	Diageo Capital plc	-	〃	-	US$ 3,554	N/A	US$ 3,554	
	F&G Global Funding	-	〃	-	US$ 3,519	N/A	US$ 3,519	
	Highmark Inc.	-	〃	-	US$ 3,512	N/A	US$ 3,512	
	Verisk Analytics, Inc.	-	〃	-	US$ 3,494	N/A	US$ 3,494	
	ERAC USA Finance LLC	-	〃	-	US$ 3,493	N/A	US$ 3,493	
	American Honda Finance Corporation	-	〃	-	US$ 3,473	N/A	US$ 3,473	
	Skandinaviska Enskilda Banken AB (publ)	-	〃	-	US$ 3,458	N/A	US$ 3,458	
	Pfizer Inc.	-	〃	-	US$ 3,416	N/A	US$ 3,416	
	HSBC Bank Canada	-	〃	-	US$ 3,406	N/A	US$ 3,406	
	USAA Capital Corp.	-	〃	-	US$ 3,375	N/A	US$ 3,375	
	Penske Truck Leasing Co., L.P.	-	〃	-	US$ 3,364	N/A	US$ 3,364	
	Xcel Energy Inc.	-	〃	-	US$ 3,318	N/A	US$ 3,318	
	The Western Union Company	-	〃	-	US$ 3,313	N/A	US$ 3,313	
	BMW US Capital, LLC	-	〃	-	US$ 3,298	N/A	US$ 3,298	
	Johnson & Johnson	-	〃	-	US$ 3,292	N/A	US$ 3,292	
	Nestlé Holdings, Inc.	-	〃	-	US$ 3,291	N/A	US$ 3,291	
	ONE Gas, Inc.	-	〃	-	US$ 3,195	N/A	US$ 3,195	
	PNC Bank, National Association	-	〃	-	US$ 3,187	N/A	US$ 3,187	
	Texas Instruments Incorporated	-	〃	-	US$ 3,184	N/A	US$ 3,184	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	CNA Financial Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 3,165	N/A	US$ 3,165	
	Avangrid, Inc.	-	〃	-	US$ 3,136	N/A	US$ 3,136	
	Oncor Electric Delivery Company LLC	-	〃	-	US$ 3,111	N/A	US$ 3,111	
	Baidu, Inc.	-	〃	-	US$ 3,091	N/A	US$ 3,091	
	Novartis Capital Corporation	-	〃	-	US$ 3,052	N/A	US$ 3,052	
	BOC Aviation Limited	-	〃	-	US$ 3,041	N/A	US$ 3,041	
	Ralph Lauren Corporation	-	〃	-	US$ 3,018	N/A	US$ 3,018	
	Baxalta Incorporated	-	〃	-	US$ 3,017	N/A	US$ 3,017	
	Phillips 66	-	〃	-	US$ 2,952	N/A	US$ 2,952	
	Southern California Edison Company	-	〃	-	US$ 2,938	N/A	US$ 2,938	
	Chevron Phillips Chemical Company LLC	-	〃	-	US$ 2,936	N/A	US$ 2,936	
	Hewlett Packard Enterprise Company	-	〃	-	US$ 2,936	N/A	US$ 2,936	
	B.A.T Capital Corporation	-	〃	-	US$ 2,936	N/A	US$ 2,936	
	Ameriprise Financial, Inc.	-	〃	-	US$ 2,911	N/A	US$ 2,911	
	National Bank of Canada	-	〃	-	US$ 2,879	N/A	US$ 2,879	
	Eastern Energy Gas Holdings, LLC	-	〃	-	US$ 2,843	N/A	US$ 2,843	
	Ventas Realty, Limited Partnership	-	〃	-	US$ 2,832	N/A	US$ 2,832	
	American Express Company	-	〃	-	US$ 2,809	N/A	US$ 2,809	
	Air Products and Chemicals, Inc.	-	〃	-	US$ 2,779	N/A	US$ 2,779	
	Reliance Standard Life Global Funding II	-	〃	-	US$ 2,765	N/A	US$ 2,765	
	PPL Electric Utilities Corporation	-	〃	-	US$ 2,753	N/A	US$ 2,753	
	Baxter International Inc.	-	〃	-	US$ 2,751	N/A	US$ 2,751	
	CVS Health Corporation	-	〃	-	US$ 2,725	N/A	US$ 2,725	
	Public Service Enterprise Group Incorporated	-	〃	-	US$ 2,715	N/A	US$ 2,715	
	NBN Co Limited	-	〃	-	US$ 2,707	N/A	US$ 2,707	
	DTE Energy Company	-	〃	-	US$ 2,703	N/A	US$ 2,703	
	Realty Income Corporation	-	〃	-	US$ 2,689	N/A	US$ 2,689	
	Nuveen Finance, LLC	-	〃	-	US$ 2,684	N/A	US$ 2,684	
	GA Global Funding Trust	-	〃	-	US$ 2,678	N/A	US$ 2,678	
	Gilead Sciences, Inc.	-	〃	-	US$ 2,671	N/A	US$ 2,671	
	CRH America, Inc.	-	〃	-	US$ 2,622	N/A	US$ 2,622	
	CMS Energy Corporation	-	〃	-	US$ 2,604	N/A	US$ 2,604	
	Kimco Realty Corporation	-	〃	-	US$ 2,596	N/A	US$ 2,596	
	Pinnacle West Capital Corporation	-	〃	-	US$ 2,586	N/A	US$ 2,586	
	The PNC Financial Services Group, Inc.	-	〃	-	US$ 2,580	N/A	US$ 2,580	
	American Electric Power Company, Inc.	-	〃	-	US$ 2,571	N/A	US$ 2,571	
	AutoZone, Inc.	-	〃	-	US$ 2,562	N/A	US$ 2,562	
	Yara International ASA	-	〃	-	US$ 2,553	N/A	US$ 2,553	
	Magellan Midstream Partners, L.P.	-	〃	-	US$ 2,548	N/A	US$ 2,548	
	WEC Energy Group, Inc.	-	〃	-	US$ 2,543	N/A	US$ 2,543	
	Air Lease Corporation	-	〃	-	US$ 2,540	N/A	US$ 2,540	
	John Deere Capital Corporation	-	〃	-	US$ 2,522	N/A	US$ 2,522	
	RGA Global Funding	-	〃	-	US$ 2,506	N/A	US$ 2,506	
	Empower Finance 2020, LP	-	〃	-	US$ 2,465	N/A	US$ 2,465	
	BP Capital Markets America, Inc.	-	〃	-	US$ 2,457	N/A	US$ 2,457	
	Chevron U.S.A. Inc.	-	〃	-	US$ 2,447	N/A	US$ 2,447	
	Georgia Power Company	-	〃	-	US$ 2,424	N/A	US$ 2,424	
	Reynolds American Inc.	-	〃	-	US$ 2,404	N/A	US$ 2,404	
	Berkshire Hathaway Inc.	-	〃	-	US$ 2,403	N/A	US$ 2,403	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Ryder System, Inc.	-	Financial assets at fair value through other comprehensive income	-	US$ 2,363	N/A	US$ 2,363	
	NiSource Inc.	-	〃	-	US$ 2,350	N/A	US$ 2,350	
	DuPont de Nemours, Inc.	-	〃	-	US$ 2,324	N/A	US$ 2,324	
	Union Pacific Corporation	-	〃	-	US$ 2,314	N/A	US$ 2,314	
	O'Reilly Automotive, Inc.	-	〃	-	US$ 2,311	N/A	US$ 2,311	
	Health Care Service Corporation	-	〃	-	US$ 2,238	N/A	US$ 2,238	
	Reckitt Benckiser Treasury Services plc	-	〃	-	US$ 2,216	N/A	US$ 2,216	
	ITC Holdings Corp.	-	〃	-	US$ 2,209	N/A	US$ 2,209	
	Georgia-Pacific LLC	-	〃	-	US$ 2,205	N/A	US$ 2,205	
	The East Ohio Gas Company	-	〃	-	US$ 2,190	N/A	US$ 2,190	
	Mead Johnson Nutrition Company	-	〃	-	US$ 2,178	N/A	US$ 2,178	
	Magna International Inc.	-	〃	-	US$ 2,172	N/A	US$ 2,172	
	Citizens Bank, National Association	-	〃	-	US$ 2,133	N/A	US$ 2,133	
	Amphenol Corporation	-	〃	-	US$ 2,123	N/A	US$ 2,123	
	Healthpeak Properties, Inc.	-	〃	-	US$ 2,122	N/A	US$ 2,122	
	Hormel Foods Corporation	-	〃	-	US$ 2,120	N/A	US$ 2,120	
	Olympus Corporation	-	〃	-	US$ 2,110	N/A	US$ 2,110	
	Cigna Corporation	-	〃	-	US$ 2,087	N/A	US$ 2,087	
	Tucson Electric Power Company	-	〃	-	US$ 2,082	N/A	US$ 2,082	
	Otis Worldwide Corporation	-	〃	-	US$ 2,065	N/A	US$ 2,065	
	General Electric Company	-	〃	-	US$ 2,038	N/A	US$ 2,038	
	Keurig Dr Pepper Inc.	-	〃	-	US$ 2,022	N/A	US$ 2,022	
	NextEra Energy Capital Holdings, Inc.	-	〃	-	US$ 2,000	N/A	US$ 2,000	
	Shinhan Financial Group Co., Ltd.	-	〃	-	US$ 1,970	N/A	US$ 1,970	
	Kinder Morgan, Inc.	-	〃	-	US$ 1,961	N/A	US$ 1,961	
	Mitsubishi Corporation	-	〃	-	US$ 1,953	N/A	US$ 1,953	
	NBK SPC Limited	-	〃	-	US$ 1,947	N/A	US$ 1,947	
	Automatic Data Processing, Inc.	-	〃	-	US$ 1,911	N/A	US$ 1,911	
	Sydney Airport Finance Company Pty Ltd	-	〃	-	US$ 1,910	N/A	US$ 1,910	
	AmerisourceBergen Corporation	-	〃	-	US$ 1,894	N/A	US$ 1,894	
	Kentucky Utilities Company	-	〃	-	US$ 1,894	N/A	US$ 1,894	
	Wipro IT Services LLC	-	〃	-	US$ 1,862	N/A	US$ 1,862	
	Evergy Kansas Central, Inc.	-	〃	-	US$ 1,847	N/A	US$ 1,847	
	Walmart Inc.	-	〃	-	US$ 1,831	N/A	US$ 1,831	
	Gulfstream Natural Gas System, L.L.C.	-	〃	-	US$ 1,829	N/A	US$ 1,829	
	Enbridge Inc.	-	〃	-	US$ 1,823	N/A	US$ 1,823	
	Caterpillar Financial Services Corporation	-	〃	-	US$ 1,821	N/A	US$ 1,821	
	Burlington Northern Santa Fe, LLC	-	〃	-	US$ 1,814	N/A	US$ 1,814	
	Tencent Holdings Limited	-	〃	-	US$ 1,803	N/A	US$ 1,803	
	McCormick & Company, Incorporated	-	〃	-	US$ 1,769	N/A	US$ 1,769	
	Infor, Inc.	-	〃	-	US$ 1,762	N/A	US$ 1,762	
	Tyson Foods, Inc.	-	〃	-	US$ 1,754	N/A	US$ 1,754	
	Quest Diagnostics Incorporated	-	〃	-	US$ 1,733	N/A	US$ 1,733	
	AIA Group Limited	-	〃	-	US$ 1,721	N/A	US$ 1,721	
	Berkshire Hathaway Energy Company	-	〃	-	US$ 1,719	N/A	US$ 1,719	
	eBay Inc.	-	〃	-	US$ 1,700	N/A	US$ 1,700	
	University of California	-	〃	-	US$ 1,700	N/A	US$ 1,700	
	International Business Machines Corporation	-	〃	-	US$ 1,692	N/A	US$ 1,692	
	Emerson Electric Co.	-	〃	-	US$ 1,683	N/A	US$ 1,683	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Raytheon Technologies Corporation	-	Financial assets at fair value through other comprehensive income	-	US$ 1,675	N/A	US$ 1,675	
	Westpac Banking Corporation	-	〃	-	US$ 1,670	N/A	US$ 1,670	
	Midwest Connector Capital Company LLC	-	〃	-	US$ 1,658	N/A	US$ 1,658	
	Anthem, Inc.	-	〃	-	US$ 1,651	N/A	US$ 1,651	
	Essex Portfolio Limited Partnership	-	〃	-	US$ 1,644	N/A	US$ 1,644	
	APT Pipelines Limited	-	〃	-	US$ 1,641	N/A	US$ 1,641	
	UBS Group Funding (Jersey) Ltd.	-	〃	-	US$ 1,635	N/A	US$ 1,635	
	China Resources Gas Group Limited	-	〃	-	US$ 1,614	N/A	US$ 1,614	
	MetLife, Inc.	-	〃	-	US$ 1,611	N/A	US$ 1,611	
	The Southern Company	-	〃	-	US$ 1,609	N/A	US$ 1,609	
	Alimentation Couche-Tard Inc.	-	〃	-	US$ 1,606	N/A	US$ 1,606	
	Suntory Holdings Limited	-	〃	-	US$ 1,598	N/A	US$ 1,598	
	Mondelez International Holdings Netherlands Bv	-	〃	-	US$ 1,597	N/A	US$ 1,597	
	Duke Energy Florida, LLC	-	〃	-	US$ 1,594	N/A	US$ 1,594	
	Panasonic Corporation	-	〃	-	US$ 1,588	N/A	US$ 1,588	
	NSTAR Electric Company	-	〃	-	US$ 1,581	N/A	US$ 1,581	
	Brookfield Finance LLC	-	〃	-	US$ 1,576	N/A	US$ 1,576	
	CK Hutchison International (19) Limited	-	〃	-	US$ 1,564	N/A	US$ 1,564	
	CPI Property Group S.A.	-	〃	-	US$ 1,562	N/A	US$ 1,562	
	Barclays Bank PLC	-	〃	-	US$ 1,546	N/A	US$ 1,546	
	Marsh & McLennan Companies, Inc.	-	〃	-	US$ 1,530	N/A	US$ 1,530	
	Marathon Petroleum Corporation	-	〃	-	US$ 1,524	N/A	US$ 1,524	
	KEB Hana Bank	-	〃	-	US$ 1,504	N/A	US$ 1,504	
	Alliant Energy Finance, LLC	-	〃	-	US$ 1,466	N/A	US$ 1,466	
	Eastern Gas Transmission and Storage, Inc.	-	〃	-	US$ 1,421	N/A	US$ 1,421	
	Virginia Electric and Power Company	-	〃	-	US$ 1,418	N/A	US$ 1,418	
	NetApp, Inc.	-	〃	-	US$ 1,384	N/A	US$ 1,384	
	Truist Financial Corporation	-	〃	-	US$ 1,375	N/A	US$ 1,375	
	Met Tower Global Funding	-	〃	-	US$ 1,368	N/A	US$ 1,368	
	Andrew W. Mellon Foundation, The	-	〃	-	US$ 1,365	N/A	US$ 1,365	
	PACCAR Financial Corp.	-	〃	-	US$ 1,327	N/A	US$ 1,327	
	Entergy Arkansas, LLC	-	〃	-	US$ 1,314	N/A	US$ 1,314	
	Martin Marietta Materials, Inc.	-	〃	-	US$ 1,305	N/A	US$ 1,305	
	State Of Tennessee	-	〃	-	US$ 1,258	N/A	US$ 1,258	
	Lincoln National Corporation	-	〃	-	US$ 1,182	N/A	US$ 1,182	
	State Street Corporation	-	〃	-	US$ 1,167	N/A	US$ 1,167	
	IBERDROLA INTL BV	-	〃	-	US$ 1,140	N/A	US$ 1,140	
	The Curators of the University of Missouri	-	〃	-	US$ 1,123	N/A	US$ 1,123	
	Glencore Funding LLC	-	〃	-	US$ 1,118	N/A	US$ 1,118	
	Enterprise Products Operating LLC	-	〃	-	US$ 1,110	N/A	US$ 1,110	
	Foxconn (Far East) Limited	-	〃	-	US$ 1,109	N/A	US$ 1,109	
	The Cleveland Electric Illuminating Company	-	〃	-	US$ 1,103	N/A	US$ 1,103	
	Baker Hughes Holdings LLC	-	〃	-	US$ 1,079	N/A	US$ 1,079	
	Sinopec Group Overseas Development (2014) Ltd.	-	〃	-	US$ 1,068	N/A	US$ 1,068	
	BBVA México, S.A., Institución de Banca Múltiple, Grupo Financiero BBVA México	-	〃	-	US$ 1,063	N/A	US$ 1,063	
	Brighthouse Financial Global Funding	-	〃	-	US$ 1,060	N/A	US$ 1,060	
	Pricoa Global Funding I	-	〃	-	US$ 1,050	N/A	US$ 1,050	
	Kansas City Southern	-	〃	-	US$ 1,047	N/A	US$ 1,047	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	DH Europe Finance II S.a.r.l.	-	Financial assets at fair value through other comprehensive income	-	US$ 1,038	N/A	US$ 1,038	
	Baltimore Gas and Electric Company	-	〃	-	US$ 1,030	N/A	US$ 1,030	
	Entergy Mississippi, LLC	-	〃	-	US$ 1,023	N/A	US$ 1,023	
	Loews Corporation	-	〃	-	US$ 1,021	N/A	US$ 1,021	
	Denver City & County Housing Authority	-	〃	-	US$ 1,019	N/A	US$ 1,019	
	MassMutual Global Funding II	-	〃	-	US$ 1,018	N/A	US$ 1,018	
	Texas Eastern Transmission, LP	-	〃	-	US$ 1,011	N/A	US$ 1,011	
	Kaiser Foundation Hospitals	-	〃	-	US$ 1,008	N/A	US$ 1,008	
	Board Of Regents State Of Iowa	-	〃	-	US$ 978	N/A	US$ 978	
	National Rural Utilities Cooperative Finance Corporation	-	〃	-	US$ 974	N/A	US$ 974	
	Aflac Incorporated	-	〃	-	US$ 945	N/A	US$ 945	
	QNB Finance Ltd.	-	〃	-	US$ 930	N/A	US$ 930	
	Unilever Capital Corporation	-	〃	-	US$ 930	N/A	US$ 930	
	Mitsubishi HC Capital Inc.	-	〃	-	US$ 910	N/A	US$ 910	
	BHP Billiton Finance (USA) Limited	-	〃	-	US$ 903	N/A	US$ 903	
	CubeSmart, L.P.	-	〃	-	US$ 889	N/A	US$ 889	
	KeyBank National Association	-	〃	-	US$ 871	N/A	US$ 871	
	Palm Beach County, Florida	-	〃	-	US$ 844	N/A	US$ 844	
	TransCanada PipeLines Limited	-	〃	-	US$ 841	N/A	US$ 841	
	Sinopec Capital (2013) Ltd.	-	〃	-	US$ 820	N/A	US$ 820	
	Aetna Inc.	-	〃	-	US$ 815	N/A	US$ 815	
	The Walt Disney Company	-	〃	-	US$ 814	N/A	US$ 814	
	Niagara Mohawk Power Corporation	-	〃	-	US$ 811	N/A	US$ 811	
	Oregon Health & Science University	-	〃	-	US$ 808	N/A	US$ 808	
	Visa Inc.	-	〃	-	US$ 805	N/A	US$ 805	
	Crédit Agricole S.A.	-	〃	-	US$ 790	N/A	US$ 790	
	Southern Power Company	-	〃	-	US$ 787	N/A	US$ 787	
	MASCO CORP	-	〃	-	US$ 771	N/A	US$ 771	
	Sky Limited	-	〃	-	US$ 745	N/A	US$ 745	
	Canadian Natural Resources Limited	-	〃	-	US$ 734	N/A	US$ 734	
	Hyundai Capital Services, Inc.	-	〃	-	US$ 731	N/A	US$ 731	
	Warner Media, LLC	-	〃	-	US$ 728	N/A	US$ 728	
	Southern California Gas Company	-	〃	-	US$ 726	N/A	US$ 726	
	Sodexo, Inc.	-	〃	-	US$ 717	N/A	US$ 717	
	Sinopec Group Overseas Development (2017) Limited	-	〃	-	US$ 707	N/A	US$ 707	
	Norsk Hydro ASA	-	〃	-	US$ 688	N/A	US$ 688	
	Abbott Laboratories	-	〃	-	US$ 679	N/A	US$ 679	
	Stryker Corporation	-	〃	-	US$ 670	N/A	US$ 670	
	State Of Washington	-	〃	-	US$ 654	N/A	US$ 654	
	Bell Canada, Inc.	-	〃	-	US$ 646	N/A	US$ 646	
	Republic Services, Inc.	-	〃	-	US$ 621	N/A	US$ 621	
	Florida Hurricane Catastrophe Fund Finance Corporation	-	〃	-	US$ 621	N/A	US$ 621	
	QUALCOMM Incorporated	-	〃	-	US$ 618	N/A	US$ 618	
	UBS AG (LONDON BRANCH)	-	〃	-	US$ 616	N/A	US$ 616	
	Intact U.S. Holdings Inc.	-	〃	-	US$ 612	N/A	US$ 612	
	American Water Capital Corp.	-	〃	-	US$ 608	N/A	US$ 608	
	Sinopec Group Overseas Development (2012) Ltd.	-	〃	-	US$ 606	N/A	US$ 606	
	Port of Morrow	-	〃	-	US$ 592	N/A	US$ 592	
	Dormitory Authority of the State of New York	-	〃	-	US$ 584	N/A	US$ 584	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Arizona Public Service Company	-	Financial assets at fair value through other comprehensive income	-	US$ 576	N/A	US$ 576	
	Duke Energy Progress, LLC	-	〃	-	US$ 571	N/A	US$ 571	
	Shell International Finance B.V.	-	〃	-	US$ 563	N/A	US$ 563	
	Fifth Third Bank, National Association	-	〃	-	US$ 556	N/A	US$ 556	
	State of Hawaii	-	〃	-	US$ 540	N/A	US$ 540	
	United Parcel Service, Inc.	-	〃	-	US$ 539	N/A	US$ 539	
	Trane Technologies Luxembourg Finance S.A.	-	〃	-	US$ 530	N/A	US$ 530	
	Ecolab Inc.	-	〃	-	US$ 526	N/A	US$ 526	
	TTX Company	-	〃	-	US$ 510	N/A	US$ 510	
	Altria Group, Inc.	-	〃	-	US$ 506	N/A	US$ 506	
	Simon Property Group, L.P.	-	〃	-	US$ 506	N/A	US$ 506	
	174 Power Global Corporation	-	〃	-	US$ 504	N/A	US$ 504	
	Commonwealth Bank of Australia	-	〃	-	US$ 501	N/A	US$ 501	
	DENSO Corporation	-	〃	-	US$ 488	N/A	US$ 488	
	Brazos Higher Education Authority Inc	-	〃	-	US$ 462	N/A	US$ 462	
	Target Corporation	-	〃	-	US$ 437	N/A	US$ 437	
	MUFG Union Bank, National Association	-	〃	-	US$ 430	N/A	US$ 430	
	PayPal Holdings, Inc.	-	〃	-	US$ 429	N/A	US$ 429	
	University of Massachusetts Building Authority	-	〃	-	US$ 425	N/A	US$ 425	
	Sierra Pacific Power Company	-	〃	-	US$ 416	N/A	US$ 416	
	McKesson Corporation	-	〃	-	US$ 414	N/A	US$ 414	
	Comerica Bank	-	〃	-	US$ 413	N/A	US$ 413	
	Boston Properties Limited Partnership	-	〃	-	US$ 411	N/A	US$ 411	
	Entergy Corporation	-	〃	-	US$ 411	N/A	US$ 411	
	Banco del Estado de Chile	-	〃	-	US$ 408	N/A	US$ 408	
	Komatsu Finance America, Inc.	-	〃	-	US$ 404	N/A	US$ 404	
	Honeywell International Inc.	-	〃	-	US$ 401	N/A	US$ 401	
	Duke Energy Corporation	-	〃	-	US$ 394	N/A	US$ 394	
	The Norinchukin Bank	-	〃	-	US$ 394	N/A	US$ 394	
	PepsiCo, Inc.	-	〃	-	US$ 387	N/A	US$ 387	
	StanCorp Financial Group Inc.	-	〃	-	US$ 374	N/A	US$ 374	
	Entergy Louisiana, LLC	-	〃	-	US$ 372	N/A	US$ 372	
	Principal Financial Group, Inc.	-	〃	-	US$ 360	N/A	US$ 360	
	First Republic Bank	-	〃	-	US$ 354	N/A	US$ 354	
	Pernod Ricard SA	-	〃	-	US$ 352	N/A	US$ 352	
	Coöperatieve Rabobank U.A., New York Branch	-	〃	-	US$ 345	N/A	US$ 345	
	Amgen Inc.	-	〃	-	US$ 337	N/A	US$ 337	
	Mid-America Apartments, L.P.	-	〃	-	US$ 328	N/A	US$ 328	
	The Allstate Corporation	-	〃	-	US$ 321	N/A	US$ 321	
	BP Capital Markets p.l.c.	-	〃	-	US$ 316	N/A	US$ 316	
	TotalEnergies Capital International	-	〃	-	US$ 310	N/A	US$ 310	
	Philip Morris International Inc.	-	〃	-	US$ 304	N/A	US$ 304	
	BOC Aviation (USA) Corporation	-	〃	-	US$ 300	N/A	US$ 300	
	Alabama State Federal Aid Highway Finance Authority	-	〃	-	US$ 298	N/A	US$ 298	
	salesforce.com, inc.	-	〃	-	US$ 297	N/A	US$ 297	
	Aon Corporation	-	〃	-	US$ 294	N/A	US$ 294	
	QatarEnergy	-	〃	-	US$ 294	N/A	US$ 294	
	Johnson Controls International plc	-	〃	-	US$ 290	N/A	US$ 290	
	Mondelez International, Inc.	-	〃	-	US$ 275	N/A	US$ 275	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Southern Natural Gas Company, L.L.C.	-	Financial assets at fair value through other comprehensive income	-	US$ 274	N/A	US$ 274	
	Equitable Holdings, Inc.	-	〃	-	US$ 253	N/A	US$ 253	
	The Huntington National Bank	-	〃	-	US$ 253	N/A	US$ 253	
	Sales Tax Securitization Corporation Of Chicago	-	〃	-	US$ 253	N/A	US$ 253	
	Capital One Bank (USA), National Association	-	〃	-	US$ 250	N/A	US$ 250	
	E. I. du Pont de Nemours and Company	-	〃	-	US$ 247	N/A	US$ 247	
	Waste Management, Inc.	-	〃	-	US$ 243	N/A	US$ 243	
	Nasdaq, Inc.	-	〃	-	US$ 220	N/A	US$ 220	
	Children's Hospital Of Orange County	-	〃	-	US$ 219	N/A	US$ 219	
	The Pennsylvania State University	-	〃	-	US$ 212	N/A	US$ 212	
	Deere & Company	-	〃	-	US$ 209	N/A	US$ 209	
	Suncor Energy Inc.	-	〃	-	US$ 205	N/A	US$ 205	
	Oregon Education Districts	-	〃	-	US$ 204	N/A	US$ 204	
	Riverside County Infrastructure Financing Authority	-	〃	-	US$ 204	N/A	US$ 204	
	Los Angeles Department of Water and Power, California	-	〃	-	US$ 203	N/A	US$ 203	
	Saudi Arabian Oil Company	-	〃	-	US$ 200	N/A	US$ 200	
	NongHyup Bank	-	〃	-	US$ 198	N/A	US$ 198	
	San Francisco Public Utilities Commission	-	〃	-	US$ 187	N/A	US$ 187	
	Nucor Corporation	-	〃	-	US$ 182	N/A	US$ 182	
	Hoover Alabama Board Of Education	-	〃	-	US$ 179	N/A	US$ 179	
	Starbucks Corporation	-	〃	-	US$ 174	N/A	US$ 174	
	The New York State Urban Development Corporation	-	〃	-	US$ 146	N/A	US$ 146	
	Electricité de France S.A.	-	〃	-	US$ 107	N/A	US$ 107	
	Beth Israel Deaconess Medical Center, Inc.	-	〃	-	US$ 100	N/A	US$ 100	
	Municipal Improvement Corporation of Los Angeles	-	〃	-	US$ 80	N/A	US$ 80	
	Pima County, Arizona	-	〃	-	US$ 79	N/A	US$ 79	
	State of Wisconsin	-	〃	-	US$ 64	N/A	US$ 64	
	Huntington Beach California	-	〃	-	US$ 50	N/A	US$ 50	
	City of Worcester, MA	-	〃	-	US$ 30	N/A	US$ 30	
	Nueces County	-	〃	-	US$ 25	N/A	US$ 25	
	Citigroup Global Markets Inc.	-	Financial assets at amortized cost	-	US$ 99,968	N/A	US$ 99,742	
	The Goldman Sachs Group, Inc.	-	〃	-	US$ 51,347	N/A	US$ 51,471	
	Wells Fargo & Company	-	〃	-	US$ 30,399	N/A	US$ 30,883	
	JPMorgan Chase & Co.	-	〃	-	US$ 10,054	N/A	US$ 10,068	
	Government bond							
	United States Department of The Treasury	-	Financial assets at fair value through other comprehensive income	-	US$ 768,483	N/A	US$ 768,483	
	Emirate of Abu Dhabi	-	〃	-	US$ 1,495	N/A	US$ 1,495	
	Qatar	-	〃	-	US$ 1,352	N/A	US$ 1,352	
	Agency bonds/Agency mortgage-backed securities							
	FEDERAL NATIONAL MORTGAGE ASSOCIATION	-	Financial assets at fair value through other comprehensive income	-	US$ 595,794	N/A	US$ 595,794	
	Government National Mortgage Association	-	〃	-	US$ 309,985	N/A	US$ 309,985	
	Federal Home Loan Mortgage Corporation	-	〃	-	US$ 253,075	N/A	US$ 253,075	
	Asset-backed securities							
	Hyundai Auto Receivables Trust 2021-C	-	Financial assets at fair value through other comprehensive income	-	US$ 10,922	N/A	US$ 10,922	
	JPMBB Commercial Mortgage Securities Trust 2014-C24	-	〃	-	US$ 10,326	N/A	US$ 10,326	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Wells Fargo Commercial Mortgage Trust 2016-Bnk1	-	Financial assets at fair value through other comprehensive income	-	US$ 10,020	N/A	US$ 10,020	
	Ford Credit Auto Owner Trust 2021-Rev2	-	〃	-	US$ 8,355	N/A	US$ 8,355	
	Ford Credit Auto Owner Trust 2020-REV2	-	〃	-	US$ 7,211	N/A	US$ 7,211	
	Bank 2020-BNK26	-	〃	-	US$ 6,974	N/A	US$ 6,974	
	Morgan Stanley Capital I Trust 2021-L6	-	〃	-	US$ 6,956	N/A	US$ 6,956	
	Morgan Stanley Bank America Merrill Lynch Trust 2016-C30	-	〃	-	US$ 6,898	N/A	US$ 6,898	
	Bank 2017-Bnk6	-	〃	-	US$ 6,310	N/A	US$ 6,310	
	Benchmark 2019-B11 Mortgage Trust	-	〃	-	US$ 6,297	N/A	US$ 6,297	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	〃	-	US$ 6,131	N/A	US$ 6,131	
	GM Financial Consumer Automobile Receivables Trust 2021-4	-	〃	-	US$ 5,807	N/A	US$ 5,807	
	Citigroup Commercial Mortgage Trust 2014-GC21	-	〃	-	US$ 5,760	N/A	US$ 5,760	
	Hudson Yards 2016-10HY Mortgage Trust	-	〃	-	US$ 5,697	N/A	US$ 5,697	
	Citigroup Commercial Mortgage Trust 2021-PRM2	-	〃	-	US$ 5,603	N/A	US$ 5,603	
	Wells Fargo Commercial Mortgage Trust 2021-C59	-	〃	-	US$ 5,568	N/A	US$ 5,568	
	BBCMS 2018-Tall Mortgage Trust	-	〃	-	US$ 5,438	N/A	US$ 5,438	
	CSAIL 2018-CX11	-	〃	-	US$ 5,392	N/A	US$ 5,392	
	WFRBS Commercial Mortgage Trust 2013-C13	-	〃	-	US$ 5,347	N/A	US$ 5,347	
	UBS-Barclays Commercial Mortgage Trust 2012-C2	-	〃	-	US$ 5,242	N/A	US$ 5,242	
	GM Financial Revolving Receivables Trust 2021-1	-	〃	-	US$ 4,910	N/A	US$ 4,910	
	Morgan Stanley Bank America Merrill Lynch Trust 2013-C10	-	〃	-	US$ 4,870	N/A	US$ 4,870	
	Commerce 2015-CCRE24 Mortgage Trust	-	〃	-	US$ 4,830	N/A	US$ 4,830	
	MRCD 2019-Prkc Mortgage Trust	-	〃	-	US$ 4,749	N/A	US$ 4,749	
	Bank 2017 - BNK7	-	〃	-	US$ 4,568	N/A	US$ 4,568	
	Honda Auto Receivables 2021 - 4 Owner Trust	-	〃	-	US$ 4,548	N/A	US$ 4,548	
	Bank 2019-Bnk22	-	〃	-	US$ 4,142	N/A	US$ 4,142	
	JPMCC 2017-JP7	-	〃	-	US$ 4,120	N/A	US$ 4,120	
	BANK 2017-BNK5	-	〃	-	US$ 4,102	N/A	US$ 4,102	
	Bank 2019-Bnk17	-	〃	-	US$ 4,100	N/A	US$ 4,100	
	Msbam 2016-C29	-	〃	-	US$ 3,840	N/A	US$ 3,840	
	Msbam 2016-C31	-	〃	-	US$ 3,692	N/A	US$ 3,692	
	J.P. Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	-	〃	-	US$ 3,684	N/A	US$ 3,684	
	UBS Barclays Commercial Mortgage Trust 2013-C6	-	〃	-	US$ 3,169	N/A	US$ 3,169	
	WFRBS Commercial Mortgage Trust 2014-C25	-	〃	-	US$ 3,157	N/A	US$ 3,157	
	GS Mortgage Securities Trust 2015-GC32	-	〃	-	US$ 3,140	N/A	US$ 3,140	
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	〃	-	US$ 3,040	N/A	US$ 3,040	
	GS Mortgage Securities Corporation Trust 2018-RIVR	-	〃	-	US$ 2,973	N/A	US$ 2,973	
	UBS Commercial Mortgage Trust 2018-C10	-	〃	-	US$ 2,973	N/A	US$ 2,973	
	Sreit Commercial Mortgage Trust 2021-Mfp	-	〃	-	US$ 2,886	N/A	US$ 2,886	
	Benchmark 2018-B3 Commercial Mortgage Trust	-	〃	-	US$ 2,882	N/A	US$ 2,882	
	JPMDB 2017-C7	-	〃	-	US$ 2,870	N/A	US$ 2,870	
	Hyundai Auto Receivables Trust 2018-A	-	〃	-	US$ 2,867	N/A	US$ 2,867	
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	〃	-	US$ 2,762	N/A	US$ 2,762	
	GS Mortgage Securities Trust 2013-GCJ12	-	〃	-	US$ 2,657	N/A	US$ 2,657	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C7	-	〃	-	US$ 2,633	N/A	US$ 2,633	
	Ford Credit Auto Owner Trust 2020-Rev1	-	〃	-	US$ 2,544	N/A	US$ 2,544	
	Wells Fargo Commercial Mortgage Trust 2020-C55	-	〃	-	US$ 2,498	N/A	US$ 2,498	
	UBS-Barclays Commercial Mortgage Trust 2012-C3	-	〃	-	US$ 2,405	N/A	US$ 2,405	
	Citigroup Commercial Mortgage Trust 2015-P1	-	〃	-	US$ 2,400	N/A	US$ 2,400	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	BBCMS Mortgage Trust 2020-C8	-	Financial assets at fair value through other comprehensive income	-	US$ 2,383	N/A	US$ 2,383	
	Bank 2021-bnk33	-	〃	-	US$ 2,371	N/A	US$ 2,371	
	Dolp Trust 2021-NYC	-	〃	-	US$ 2,304	N/A	US$ 2,304	
	Mhc Commercial Mortgage Trust 2021-Mhc	-	〃	-	US$ 2,285	N/A	US$ 2,285	
	Citigroup Commercial Mortgage Trust 2015-GC27	-	〃	-	US$ 2,249	N/A	US$ 2,249	
	Morgan Stanley Capital I Trust	-	〃	-	US$ 2,242	N/A	US$ 2,242	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	-	〃	-	US$ 2,110	N/A	US$ 2,110	
	Commerce 2013-CCRE12 Mortgage Trust	-	〃	-	US$ 2,090	N/A	US$ 2,090	
	UBS Commercial Mortgage Trust 2018-C11	-	〃	-	US$ 2,089	N/A	US$ 2,089	
	Morgan Stanley Capital I Trust 2018-H3	-	〃	-	US$ 2,077	N/A	US$ 2,077	
	Benchmark 2018-B4 Mortgage Trust	-	〃	-	US$ 2,068	N/A	US$ 2,068	
	CGCMT 2017-P8 Mortgage Trust	-	〃	-	US$ 2,040	N/A	US$ 2,040	
	Wells Fargo Commercial Mortgage Trust 2015-C30	-	〃	-	US$ 1,716	N/A	US$ 1,716	
	Morgan Stanley Capital I Trust 2021-L5	-	〃	-	US$ 1,651	N/A	US$ 1,651	
	Wells Fargo Commercial Mortgage Trust 2018-C44	-	〃	-	US$ 1,633	N/A	US$ 1,633	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	-	〃	-	US$ 1,568	N/A	US$ 1,568	
	COMM 2020-CBM Mortgage Trust	-	〃	-	US$ 1,556	N/A	US$ 1,556	
	JPMBB Commercial Mortgage Securities Trust 2013-C12	-	〃	-	US$ 1,517	N/A	US$ 1,517	
	Wells Fargo Commercial Mortgage Trust 2015-C29	-	〃	-	US$ 1,364	N/A	US$ 1,364	
	WFRBS Commercial Mortgage Trust 2013-UBS1	-	〃	-	US$ 1,309	N/A	US$ 1,309	
	Toyota Auto Receivables 2018-D Owner Trust	-	〃	-	US$ 1,302	N/A	US$ 1,302	
	Dbgs 2018-Biod Mortgage Trust	-	〃	-	US$ 1,299	N/A	US$ 1,299	
	Honda Auto Receivables 2021-2 Owner Trust	-	〃	-	US$ 1,288	N/A	US$ 1,288	
	Toyota Auto Receivables 2021-D Owner Trust	-	〃	-	US$ 1,192	N/A	US$ 1,192	
	Wells Fargo Commercial Mortgage Trust 2012-LC5	-	〃	-	US$ 1,153	N/A	US$ 1,153	
	Morgan Stanley Capital I Trust 2015 - UBS8	-	〃	-	US$ 1,071	N/A	US$ 1,071	
	Commerce 2014-Ccre17 Mortgage Trust	-	〃	-	US$ 1,048	N/A	US$ 1,048	
	WFRBSCommercial Mortgage Trust 2013-C17	-	〃	-	US$ 1,010	N/A	US$ 1,010	
	Citigroup Commercial Mortgage Trust 2013-GCJ11	-	〃	-	US$ 958	N/A	US$ 958	
	GS Mortgage Securities Trust 2014-GC22	-	〃	-	US$ 940	N/A	US$ 940	
	COMM 2013-LC6 Mortgage Trust	-	〃	-	US$ 927	N/A	US$ 927	
	COMM 2012-CCRE5 Mortgage Trust	-	〃	-	US$ 917	N/A	US$ 917	
	Morgan Stanley Bank Of America Merrill Lynch Trust 2013-C13	-	〃	-	US$ 914	N/A	US$ 914	
	Benchmark 2019-B14 Mortgage Trust	-	〃	-	US$ 909	N/A	US$ 909	
	Morgan Stanley Capital I Trust 2019-H6	-	〃	-	US$ 890	N/A	US$ 890	
	BX Trust 2021-BXMF	-	〃	-	US$ 843	N/A	US$ 843	
	GS Mortgage Securities Trust 2019-GSA1	-	〃	-	US$ 839	N/A	US$ 839	
	280 Park Avenue Trust 2017 - 280P	-	〃	-	US$ 829	N/A	US$ 829	
	GS Mortgage Securities Trust 2014-GC24	-	〃	-	US$ 825	N/A	US$ 825	
	Elp Commercial Mortgage Trust 2021-Elp	-	〃	-	US$ 795	N/A	US$ 795	
	Bx 2021-21M Mortgage Trust	-	〃	-	US$ 794	N/A	US$ 794	
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	〃	-	US$ 776	N/A	US$ 776	
	Benchmark 2019-B9 Mortgage Trust	-	〃	-	US$ 709	N/A	US$ 709	
	Bbcms Mortgage Trust 2017-C1	-	〃	-	US$ 698	N/A	US$ 698	
	JPMBB Commercial Mortgage Securities Trust 2014-C19	-	〃	-	US$ 663	N/A	US$ 663	
	Benchmark 2019-B15 Mortgage Trust	-	〃	-	US$ 642	N/A	US$ 642	
	Morgan Stanley Bank Of America Merrill Lynch Trust 2013-C12	-	〃	-	US$ 639	N/A	US$ 639	
	CF 2019-CF1 Mortgage Trust	-	〃	-	US$ 609	N/A	US$ 609	
	Gs Mortgage Securities Corporation Trust 2020-Uptn	-	〃	-	US$ 602	N/A	US$ 602	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Equs 2021-Eqaz Mortgage Trust	-	Financial assets at fair value through other comprehensive income	-	US$ 597	N/A	US$ 597	
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	〃	-	US$ 581	N/A	US$ 581	
	Bank 2019-BNK23	-	〃	-	US$ 579	N/A	US$ 579	
	Morgan Stanley Capital I Trust 2019-H7	-	〃	-	US$ 568	N/A	US$ 568	
	Wells Fargo Commercial Mortgage Trust 2015-NXS3	-	〃	-	US$ 555	N/A	US$ 555	
	Bx Commercial Mortgage Trust 2021-CIP	-	〃	-	US$ 550	N/A	US$ 550	
	Citigroup Commercial Mortgage Trust 2018-C5	-	〃	-	US$ 545	N/A	US$ 545	
	Citigroup Commercial Mortgage Trust 2014-GC23	-	〃	-	US$ 522	N/A	US$ 522	
	COMM 2015-CCRE22 Mortgage Trust	-	〃	-	US$ 464	N/A	US$ 464	
	JPMCC 2015 - JP1	-	〃	-	US$ 382	N/A	US$ 382	
	JPMDB Commercial Mortgage Securities Trust 2019-COR6	-	〃	-	US$ 374	N/A	US$ 374	
	UBS Barclays Commercial Mortgage Trust 2013-C5	-	〃	-	US$ 364	N/A	US$ 364	
	Citigroup Commercial Mortgage Trust 2014-GC19	-	〃	-	US$ 287	N/A	US$ 287	
	GS Mortgage Securities Trust 2014-GC26	-	〃	-	US$ 275	N/A	US$ 275	
	Citigroup Commercial Mortgage Trust 2016-C3	-	〃	-	US$ 243	N/A	US$ 243	
	Wells Fargo Commercial Mortgage Trust 2016-C36	-	〃	-	US$ 235	N/A	US$ 235	
	Citigroup Commercial Mortgage Trust 2015-GC35	-	〃	-	US$ 216	N/A	US$ 216	
	Ford Credit Auto Owner Trust 2019-A	-	〃	-	US$ 152	N/A	US$ 152	
	Bank 2020-BNK28	-	〃	-	US$ 132	N/A	US$ 132	
	COMM 2013-CCRE8 Mortgage Trust	-	〃	-	US$ 122	N/A	US$ 122	
	COMM 2015-DC1 Mortgage Trust	-	〃	-	US$ 109	N/A	US$ 109	
	BBCMS Mortgage Trust 2020-C7	-	〃	-	US$ 91	N/A	US$ 91	
	Wells Fargo Commercial Mortgage Trust 2015-NXS1	-	〃	-	US$ 36	N/A	US$ 36	
	Non-publicly traded equity investments							
	Primavera Capital Fund II L.P.	-	Financial assets at fair value through other comprehensive income	-	US$ 89,495	4	US$ 89,495	
VTAF II	Non-publicly traded equity investments							
	Aether Systems, Inc.	-	Financial assets at fair value through other comprehensive income	1,085	US$ 392	20	US$ 392	
	5V Technologies, Inc.	-	〃	4	-	-	-	
	Publicly traded stocks							
	Sentelic Corporation	-	Financial assets at fair value through other comprehensive income	1,019	US$ 2,954	3	US$ 2,954	
VTAF III	Non-publicly traded equity investments							
	LiquidLeds Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US$ 800	14	US$ 800	
	Neoconix, Inc.	-	〃	4,147	US$ 174	-	US$ 174	
Growth Fund	Non-publicly traded equity investments							
	Astera Labs, Inc.	-	Financial assets at fair value through other comprehensive income	637	US$ 2,142	-	US$ 2,142	
	CNEX Labs, Inc.	-	〃	24	US$ 214	-	US$ 214	
	Publicly traded stocks							
	Marvell Technology Group Ltd.	-	Financial assets at fair value through other comprehensive income	45	US$ 3,903	-	US$ 3,903	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2021				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
Emerging Fund	Non-publicly traded equity investments							
	Credo Technology Group Holding Ltd.	-	Financial assets at fair value through other comprehensive income	861	US$ 5,000	1	US$ 5,000	
	Astera Labs, Inc.	-	〃	1,487	US$ 5,000	1	US$ 5,000	

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES ACQUIRED AND DISPOSED OF AT COSTS OR PRICES OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC	Non-publicly traded equity investments													
	VisEra Tech	Investments accounted for using equity method	19 institutional investors, including: GIC, Capital Group, Fidelity International, Cathay Life Insurance Co., Ltd., Fubon Life Insurance Co., Ltd., Yuanta Securities, KGI Securities and Securities and Futures Investors Protection Center etc.	-	253,120	$ 6,363,099	-	$ -	39,501	$ 9,451,798	$ 1,045,516	Note 2	213,619	$ 6,521,231
	TSMC Arizona	〃	-	-	30	842,745	740	20,787,702	-	-	-	-	770	16,667,696
	JASM	〃	-	-	-	-	58	1,416,921	-	-	-	-	58	1,383,554
TSMC Partners	Non-publicly traded equity investments													
	Inpria Corporation	Financial assets at fair value through other comprehensive income	-	-	1,778	US$ 3,600	-	US$ -	1,778	US$ 17,146	US$ 4,000	US$ 13,146	-	US$ -
TSMC Global	Corporate bond													
	Bank of America Corporation	Financial assets at fair value through other comprehensive income	-	-	-	US$ 58,724	-	US$ 36,173	-	US$ 18,692	US$ 18,526	US$ 166	-	US$ 74,188
	Citigroup Inc.	〃	-	-	-	US$ 41,827	-	US$ 24,458	-	US$ 18,235	US$ 18,033	US$ 202	-	US$ 46,836
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 29,809	-	US$ 24,600	-	US$ 7,381	US$ 7,376	US$ 5	-	US$ 46,380
	JPMorgan Chase & Co.	〃	-	-	-	US$ 29,759	-	US$ 16,303	-	US$ 3,333	US$ 3,303	US$ 30	-	US$ 41,525
	AbbVie Inc.	〃	-	-	-	US$ 33,716	-	US$ 13,933	-	US$ 8,756	US$ 7,977	US$ 779	-	US$ 37,531

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	Wells Fargo & Company	Financial assets at fair value through other comprehensive income	-	-	-	US$ 26,074	-	US$ 20,040	-	US$ 10,192	US$ 9,865	US$ 327	-	US$ 34,978
	Mitsubishi UFJ Financial Group, Inc.	〃	-	-	-	US$ 34,946	-	US$ 8,784	-	US$ 10,906	US$ 10,709	US$ 197	-	US$ 31,881
	HSBC Holdings plc	〃	-	-	-	US$ 16,113	-	US$ 15,004	-	US$ 3,508	US$ 3,365	US$ 143	-	US$ 26,960
	BNP Paribas SA	〃	-	-	-	US$ 13,202	-	US$ 14,494	-	US$ 7,154	US$ 6,882	US$ 272	-	US$ 19,983
	Oracle Corporation	〃	-	-	-	US$ 7,822	-	US$ 13,979	-	US$ 2,000	US$ 2,000	US$ -	-	US$ 19,448
	Morgan Stanley	〃	-	-	-	US$ -	-	US$ 18,029	-	US$ -	US$ -	US$ -	-	US$ 17,917
	Morgan Stanley	〃	-	-	-	US$ -	-	US$ 17,210	-	US$ -	US$ -	US$ -	-	US$ 17,013
	Mizuho Financial Group, Inc.	〃	-	-	-	US$ 20,795	-	US$ 6,233	-	US$ 12,671	US$ 12,556	US$ 115	-	US$ 13,999
	NTT Finance Corporation	〃	-	-	-	US$ -	-	US$ 14,780	-	US$ 1,941	US$ 1,945	US$ (4)	-	US$ 12,546
	Morgan Stanley	〃	-	-	-	US$ 23,053	-	US$ -	-	US$ 11,390	US$ 11,125	US$ 265	-	US$ 11,096
	Verizon Communications Inc.	〃	-	-	-	US$ 10,558	-	US$ 16,617	-	US$ 16,037	US$ 15,940	US$ 97	-	US$ 10,971
	Bristol-Myers Squibb Company	〃	-	-	-	US$ 21,090	-	US$ -	-	US$ 11,028	US$ 10,613	US$ 415	-	US$ 9,412
	AstraZeneca Finance LLC	〃	-	-	-	US$ -	-	US$ 10,933	-	US$ 2,703	US$ 2,716	US$ (13)	-	US$ 8,123
	BP Capital Markets America, Inc.	〃	-	-	-	US$ 15,621	-	US$ -	-	US$ 12,848	US$ 12,545	US$ 303	-	US$ 2,457
	NextEra Energy Capital Holdings, Inc.	〃	-	-	-	US$ 9,527	-	US$ 4,985	-	US$ 12,258	US$ 11,963	US$ 295	-	US$ 2,000
	Citigroup Global Markets Inc.	Financial assets at amortized cost	-	-	-	US$ 99,965	-	US$ 100,000	-	US$ 100,000	US$ 100,000	US$ -	-	US$ 99,968
	The Goldman Sachs Group, Inc.	〃	-	-	-	US$ 14,930	-	US$ 36,455	-	US$ -	US$ -	US$ -	-	US$ 51,347
	Wells Fargo & Company	〃	-	-	-	US$ 180,487	-	US$ -	-	US$ 150,000	US$ 150,000	US$ -	-	US$ 30,399
	JPMorgan Chase & Co.	〃	-	-	-	US$ 95,058	-	US$ -	-	US$ 85,000	US$ 85,000	US$ -	-	US$ 10,054
	<u>Government bond</u>													
	United States Department of The Treasury	Financial assets at fair value through other comprehensive income	-	-	-	US$ 182,533	-	US$1,298,345	-	US$ 980,985	US$ 985,925	US$ (4,940)	-	US$ 488,297
	United States Department of The Treasury	〃	-	-	-	US$ 287,012	-	US$ 74,148	-	US$ 107,638	US$ 108,069	US$ (431)	-	US$ 245,475
	United States Department of The Treasury	〃	-	-	-	US$ -	-	US$ 82,290	-	US$ 49,816	US$ 49,811	US$ 5	-	US$ 32,486
	United States Department of The Treasury	〃	-	-	-	US$ 3,073	-	US$ 13,441	-	US$ 14,389	US$ 14,218	US$ 171	-	US$ 2,225
	<u>Agency bonds/Agency mortgage-backed securities</u>													
	Government National Mortgage Association	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	-	US$ 436,640	-	US$ 207,178	US$ 207,916	US$ (738)	-	US$ 226,295
	Federal National Mortgage Association	〃	-	-	-	US$ 96,211	-	US$ 355,027	-	US$ 368,077	US$ 370,120	US$ (2,043)	-	US$ 79,577
	Federal National Mortgage Association	〃	-	-	-	US$ 4,035	-	US$ 895,855	-	US$ 845,383	US$ 845,168	US$ 215	-	US$ 54,626
	Federal National Mortgage Association	〃	-	-	-	US$ 56,510	-	US$ 2,460	-	US$ 14,850	US$ 15,495	US$ (645)	-	US$ 42,003
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 35,786	-	US$ 432	US$ 433	US$ (1)	-	US$ 35,138

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	FEDERAL NATIONAL MORTGAGE ASSOCIATION	Financial assets at fair value through other comprehensive income	-	-	-	US$ 7,969	-	US$ 253,784	-	US$ 233,044	US$ 233,517	US$ (473)	-	US$ 28,206
	Federal National Mortgage Association	〃	-	-	-	US$ 49,027	-	US$1,372,973	-	US$1,393,352	US$1,394,172	US$ (820)	-	US$ 27,725
	Federal National Mortgage Association	〃	-	-	-	US$ -	-	US$ 16,145	-	US$ -	US$ -	US$ -	-	US$ 16,150
	Federal National Mortgage Association	〃	-	-	-	US$ -	-	US$ 366,295	-	US$ 350,795	US$ 350,707	US$ 88	-	US$ 15,541
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 87,563	-	US$ 72,465	US$ 72,543	US$ (78)	-	US$ 14,756
	Government National Mortgage Association	〃	-	-	-	US$ 17,896	-	US$ 498,925	-	US$ 505,785	US$ 506,704	US$ (919)	-	US$ 10,073
	Federal National Mortgage Association	〃	-	-	-	US$ 31,980	-	US$ 184,032	-	US$ 208,832	US$ 208,922	US$ (90)	-	US$ 6,857
	Government National Mortgage Association	〃	-	-	-	US$ 30,307	-	US$ 38,746	-	US$ 61,172	US$ 62,158	US$ (986)	-	US$ 6,462
	Government National Mortgage Association	〃	-	-	-	US$ 9,795	-	US$ 214,076	-	US$ 217,697	US$ 217,835	US$ (138)	-	US$ 6,025
	Government National Mortgage Association	〃	-	-	-	US$ 14,244	-	US$ 391,758	-	US$ 399,817	US$ 400,027	US$ (210)	-	US$ 5,985
	Federal National Mortgage Association	〃	-	-	-	US$ 18,997	-	US$ 2,026	-	US$ 15,566	US$ 15,829	US$ (263)	-	US$ 5,048
	Federal National Mortgage Association	〃	-	-	-	US$ 24,084	-	US$ -	-	US$ 19,973	US$ 19,293	US$ 680	-	US$ 3,923
	Federal National Mortgage Association	〃	-	-	-	US$ 18,019	-	US$ -	-	US$ 13,821	US$ 13,363	US$ 458	-	US$ 3,822
	Government National Mortgage Association	〃	-	-	-	US$ 27,389	-	US$ -	-	US$ 23,510	US$ 23,329	US$ 181	-	US$ 3,202
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ 20,247	-	US$ 23,170	-	US$ 40,219	US$ 40,181	US$ 38	-	US$ 3,001
	Government National Mortgage Association	〃	-	-	-	US$ 24,481	-	US$ -	-	US$ 20,977	US$ 20,571	US$ 406	-	US$ 2,938
	Federal National Mortgage Association	〃	-	-	-	US$ 23,776	-	US$ 3,273	-	US$ 24,212	US$ 23,815	US$ 397	-	US$ 2,616
	Federal National Mortgage Association	〃	-	-	-	US$ 19,673	-	US$ 149,957	-	US$ 167,446	US$ 167,425	US$ 21	-	US$ 2,209
	Government National Mortgage Association	〃	-	-	-	US$ 1,067	-	US$ 30,360	-	US$ 29,604	US$ 29,632	US$ (28)	-	US$ 1,791
	Federal National Mortgage Association	〃	-	-	-	US$ 13,391	-	US$ -	-	US$ 12,337	US$ 12,300	US$ 37	-	US$ 694
	Government National Mortgage Association	〃	-	-	-	US$ 5,381	-	US$ 46,006	-	US$ 50,843	US$ 50,855	US$ (12)	-	US$ 529
	Federal National Mortgage Association	〃	-	-	-	US$ 21,409	-	US$ 162,780	-	US$ 183,757	US$ 183,736	US$ 21	-	US$ 426
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 145,065	-	US$ 145,122	US$ 145,065	US$ 57	-	US$ -
	Government National Mortgage Association	〃	-	-	-	US$ 199,835	-	US$ 82,010	-	US$ 278,349	US$ 280,290	US$ (1,941)	-	US$ -
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ -	-	US$ 124,232	-	US$ 124,218	US$ 124,232	US$ (14)	-	US$ -

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal				Ending Balance (Note 1)	
					Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)	Carrying Value (Foreign Currencies in Thousands)	Gain/Loss on Disposal (Foreign Currencies in Thousands)	Shares/Units (In Thousands)	Amount (Foreign Currencies in Thousands)
TSMC Global	GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 2	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	-	US$ 97,498	-	US$ 97,545	US$ 97,498	US$ 47	-	US$ -
	Federal Home Loan Mortgage Corporation	〃	-	-	-	US$ 11,872	-	US$ -	-	US$ 11,654	US$ 11,120	US$ 534	-	US$ -
	Federal National Mortgage Association	〃	-	-	-	US$ 5,253	-	US$ 11,906	-	US$ 17,015	US$ 17,228	US$ (213)	-	US$ -
	GOVERNMENT NATIONAL MORTGAGE ASSOCIATION 2	〃	-	-	-	US$ -	-	US$ 93,686	-	US$ 93,420	US$ 93,686	US$ (266)	-	US$ -
	Government National Mortgage Association	〃	-	-	-	US$ 18,900	-	US$ 121,784	-	US$ 140,660	US$ 140,610	US$ 50	-	US$ -
	Federal National Mortgage Association	〃	-	-	-	US$ 8,394	-	US$ 89,440	-	US$ 97,826	US$ 97,829	US$ (3)	-	US$ -
	Asset-backed securities													
	Hyundai Auto Receivables Trust 2021-C	Financial assets at fair value through other comprehensive income	-	-	-	US$ -	-	US$ 10,998	-	US$ -	US$ -	US$ -	-	US$ 10,922

Note 1: The ending balance includes the realized gain/loss on equity investment, the amortization of premium/discount on bonds investments and other related adjustment.

Note 2: To facilitate VisEra's IPO in Taiwan, 39,501 thousand common shares of VisEra at a price of NT$240 were sold by TSMC and an increase of NT$8,406,282 thousand in capital surplus was recognized. TSMC's shareholding in VisEra decreased from 87% to 73%. This disposal was accounted for as an equity transaction since the transaction did not change TSMC's control over VisEra.

(Concluded)

TABLE 5

Taiwan Semiconductor Manufacturing Company Limited and Investees

ACQUISITION OF INDIVIDUAL REAL ESTATE PROPERTIES AT COSTS OF AT LEAST NT$300 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate	February 09, 2021 (Note)	$ 52,100,000 (Note)	Based on the terms in the purchase order	85 counterparties(Note), including： ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kedge Construction Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Li Jin Engineering Co., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated National Institute of Advanced Industrial Science & Technology								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Ying Pao Technology Inc. Zhao-Cheng Corp.								
	Real estate	April 22, 2021 (Note)	$ 9,500,000 (Note)	Based on the terms in the purchase order	70 counterparties(Note), including： J. Cypress Co., Ltd. L&K Engineering Co., Ltd. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Taiwan Puritic Corp. Uangyih-Tech Industrial Co., Ltd. United Integrated Services Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None
	Real estate	June 09, 2021 (Note)	54,500,000 (Note)	Based on the terms in the purchase order	101 counterparties(Note), including： ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kao Hsin Engineering Co., Ltd. Kedge Construction Co., Ltd. Kinetics Technology Corporation								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trane Taiwan Distribution Limited Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd.							

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.							
	Real estate	August 10, 2021 (Note)	$168,000,000 (Note)	Based on the terms in the purchase order	100 counterparties(Note), including： ABB Enterprise Software Inc. ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allied Supreme Corp. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. CTCI Corporation Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Johnson Controls, Inc. Jusun Instruments Co., Ltd. Kao Hsin Engineering Co., Ltd. Kedge Construction Co., Ltd.							

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Lumax International Corp., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated OBR Cooling Towers, Inc. Okland Construction Company, Inc. Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Propersys Corp. Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Puritic Corp. Taiwan Valqua Engineering International, Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				TASA Construction Corporation Techgo Industrial Co., Ltd. Trane Taiwan Distribution Limited Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.								
	Real estate	November 09, 2021 (Note)	$ 55,600,000 (Note)	Based on the terms in the purchase order	122 counterparties(Note), including： ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Atlas Copco Taiwan Ltd. Atlas Technology Corp.	-	N/A	N/A	N/A	N/A	Price comparison and price negotiation	Manufacturing purpose	None

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Capital Machinery Limited Chen Yuan International Co., Ltd. Chenfull International Co., Ltd. Cheng Deh Fire Protection Industrial Corp. Chien Kuo Construction Co., Ltd. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Chung-Lin General Contractors, Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd. Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hsinchu Science Park Bureau, Ministry of Science and Technology Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore) J.C. Yang Architect and Associates								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				JG Environmental Technology Co., Ltd. JJmr-Clean-Air Solution Tech.Services Co., Ltd. Jusun Instruments Co., Ltd. Kajima Corporation Kao Hsin Engineering Co., Ltd. Kaohsiung City Government Kedge Construction Co., Ltd. Kikuyo-machi Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Lee Ming Construction Co., Ltd. Mandartech Interiors Inc. Marketech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation Ruentex Engineering & Construction Co., Ltd. San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd.							

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counterparty	Nature of Relationships	Prior Transaction of Related Counterparty				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Taiwan Gleno Enterprise Co., Ltd. Taiwan Obayashi Corporation Taiwan Power Company Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trane Taiwan Distribution Limited Trusval Technology Co., Ltd. Tung Kang Steel Structure Corp. Uangyih-Tech Industrial Co., Ltd. Unelectra International Corp. United Integrated Services Co., Ltd. Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholetech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.								

Note: The disclosures are expected information based on the capital appropriation approved by the Board of Directors (Right-of-use assets are included). The actual information shall be subject to the final purchase order of TSMC.

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Investees

TOTAL PURCHASES FROM OR SALES TO RELATED PARTIES OF AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Transaction Details				Abnormal Transaction		Notes/Accounts Payable or Receivable		Note
			Purchases/ Sales	Amount (Foreign Currencies in Thousands)	% to Total	Payment Terms	Unit Price	Payment Terms	Ending Balance (Foreign Currencies in Thousands)	% to Total	
TSMC	TSMC North America	Subsidiary	Sales	$ 1,040,985,786	66	Net 30 days from invoice date (Note)	-	(Note)	$ 137,956,681	75	
	GUC	Associate	Sales	5,880,085	-	Net 30 days from the end of the month of when invoice is issued	-	-	391,647	-	
	TSMC Nanjing	Subsidiary	Purchases	27,070,065	22	Net 30 days from the end of the month of when invoice is issued	-	-	(2,761,080)	6	
	TSMC China	Subsidiary	Purchases	21,321,353	17	Net 30 days from the end of the month of when invoice is issued	-	-	(1,802,314)	4	
	WaferTech	Indirect subsidiary	Purchases	7,743,263	6	Net 30 days from the end of the month of when invoice is issued	-	-	(732,533)	1	
	SSMC	Associate	Purchases	3,843,482	3	Net 30 days from the end of the month of when invoice is issued	-	-	(349,211)	1	
	VIS	Associate	Purchases	3,726,305	3	Net 30 days from the end of the month of when invoice is issued	-	-	(357,151)	1	
TSMC North America	GUC	Associate of TSMC	Sales	1,825,047 (US$ 65,319)	-	Net 30 days from invoice date	-	-	205,941 (US$ 7,442)	-	
VisEra Tech	Xintec	Associate of TSMC	Sales	750,373	8	Net 60 days from the end of the month of when invoice is issued	-	-	117,488	9	

Note: The tenor is determined by the payment terms granted to its clients by TSMC North America.

Taiwan Semiconductor Manufacturing Company Limited and Investees

RECEIVABLES FROM RELATED PARTIES AMOUNTING TO AT LEAST NT$100 MILLION OR 20% OF THE PAID-IN CAPITAL
DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Company Name	Related Party	Nature of Relationships	Ending Balance (Foreign Currencies in Thousands)	Turnover Days (Note 1)	Overdue		Amounts Received in Subsequent Period	Allowance for Bad Debts
					Amount	Action Taken		
TSMC	TSMC North America	Subsidiary	$ 142,957,244	42	$ -	-	$ -	$ -
	GUC	Associate	391,647	22	-	-	-	-
TSMC North America	TSMC	Parent company	208,050 (US$ 7,518)	Note 2	1,730 (US$ 63)	-	16,049 (US$ 580)	-
	GUC	Associate of TSMC	205,941 (US$ 7,442)	26	4,014 (US$ 145)	-	27,343 (US$ 988)	-
TSMC 3DIC	TSMC	Parent company	219,982 (JPY 911,277)	Note 2	-	-	-	-
TSMC China	TSMC Nanjing	The same parent company	24,390,011 (RMB 5,622,280)	Note 2	-	-	-	-
	TSMC	Parent company	1,802,314 (RMB 415,462)	29	-	-	-	-
TSMC Nanjing	TSMC	Parent company	2,761,080 (RMB 636,473)	31	-	-	-	-
VisEra Tech	Xintec	Associate of TSMC	117,488	74	-	-	-	-
JASM	TSMC	Parent company	1,389,861 (JPY 5,757,500)	Note 2	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	350,916 (US$ 12,680)	Note 2	-	-	-	-
WaferTech	TSMC	The ultimate parent of the Company	732,533 (US$ 26,470)	34	-	-	-	-

Note 1: The calculation of turnover days excludes other receivables from related parties.

Note 2: The ending balance is primarily consisted of other receivables, which is not applicable for the calculation of turnover days.

Taiwan Semiconductor Manufacturing Company Limited and Investees

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEES OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2021			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2021 (Foreign Currencies in Thousands)	December 31, 2020 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC	TSMC Global	Tortola, British Virgin Islands	Investment activities	$355,162,309	$355,162,309	11	100	$374,639,406	$ 1,303,742	$ 1,303,742	Subsidiary
	TSMC Partners	Tortola, British Virgin Islands	Investing in companies involved in the semiconductor design and manufacturing, and other investment activities	31,456,130	31,456,130	988,268	100	54,968,185	1,804,174	1,804,174	Subsidiary
	TSMC Arizona	Phoenix, Arizona, U.S.A.	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	21,643,300	855,599	770	100	16,667,696	(4,810,127)	(4,810,127)	Subsidiary
	VIS	Hsin-Chu, Taiwan	Manufacturing, sales, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	10,180,677	464,223	28	10,613,127	11,819,588	3,342,414	Associate
	SSMC	Singapore	Manufacturing and sales of integrated circuits and other semiconductor devices	5,120,028	5,120,028	314	39	6,795,699	2,544,371	986,962	Associate
	VisEra Tech	Hsin-Chu, Taiwan	Research, design, development, manufacturing, sales, packaging and test of color filter	5,005,171	5,005,171	213,619	73	6,521,231	2,165,280	1,631,948	Subsidiary
	TSMC North America	San Jose, California, U.S.A	Sales and marketing of integrated circuits and other semiconductor devices	333,718	333,718	11,000	100	4,871,149	375,611	375,611	Subsidiary
	Xintec	Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	111,282	41	3,046,961	1,877,082	770,202	Associate
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	46,688	35	1,484,683	1,460,149	508,706	Associate
	JASM	Kumamoto, Japan	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	1,416,921	-	58	100	1,383,554	(6,426)	(6,426)	Subsidiary
	TSMC Europe	Amsterdam, the Netherlands	Customer service and supporting activities	15,749	15,749	-	100	509,880	21,875	21,875	Subsidiary
	TSMC JDC	Yokohama, Japan	Engineering support activities	410,680	302,560	15	100	368,144	13,803	13,803	Subsidiary
	VTAF III	Cayman Islands	Investing in technology start-up companies	1,321,594	1,318,846	-	98	300,401	(8,978)	(8,798)	Subsidiary
	Emerging Fund	Cayman Islands	Investing in technology start-up companies	298,618	-	-	99.9	286,205	(10,015)	(10,005)	Subsidiary
	TSMC 3DIC	Yokohama, Japan	Engineering support activities	278,986	-	11	100	270,513	4,197	4,197	Subsidiary
	TSMC Japan	Yokohama, Japan	Customer service and supporting activities	83,760	83,760	6	100	132,411	4,662	4,662	Subsidiary
	VTAF II	Cayman Islands	Investing in technology start-up companies	260,300	260,300	-	98	112,320	(1,073)	(1,052)	Subsidiary
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	80	100	40,857	2,802	2,802	Subsidiary
TSMC Partners	TSMC Development	Delaware, U.S.A	Investing in companies involved in semiconductor manufacturing	16,242,944 (US$ 586,939)	16,242,944 (US$ 586,939)	-	100	30,557,431 (US$1,104,193)	1,521,812 (US$ 54,475)	Note 2	Subsidiary
	TSMC Technology	Delaware, U.S.A	Engineering support activities	395,241 (US$ 14,282)	395,241 (US$ 14,282)	-	100	835,888 (US$ 30,205)	78,921 (US$ 2,821)	Note 2	Subsidiary
	TSMC Canada	Ontario, Canada	Engineering support activities	63,650 (US$ 2,300)	63,650 (US$ 2,300)	2,300	100	278,766 (US$ 10,073)	25,324 (US$ 906)	Note 2	Subsidiary
VTAF III	Growth Fund	Cayman Islands	Investing in technology start-up companies	72,057 (US$ 2,604)	69,289 (US$ 2,504)	-	100	219,604 (US$ 7,935)	(1,217) (US$ (44))	Note 2	Subsidiary
	Mutual-Pak	New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	44,094 (US$ 1,593)	44,094 (US$ 1,593)	4,693	28	22,948 (US$ 829)	(18,466) (US$ (657))	Note 2	Associate

(Continued)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount		Balance as of December 31, 2021			Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
				December 31, 2021 (Foreign Currencies in Thousands)	December 31, 2020 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)			
TSMC Development	WaferTech	Washington, U.S.A	Manufacturing, sales and testing of integrated circuits and other semiconductor devices	$ -	$ -	293,637	100	$ 5,153,719 (US$ 186,230)	$ 1,456,072 (US$ 52,123)	Note 2	Subsidiary

Note 1: The share of profits/losses of investee includes the effect of unrealized gross profit on intercompany transactions.

Note 2: The share of profits/losses of the investee company is not reflected herein as such amount is already included in the share of profits/losses of the investor company.

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Investees

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR THE YEAR ENDED DECEMBER 31, 2021
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investee Company	Main Businesses and Products	Total Amount of Paid-in Capital (RMB in Thousands)	Method of Investment	Accumulated Outflow of Investment from Taiwan as of January 1, 2021 (US$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2021 (US$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of December 31, 2021	Accumulated Inward Remittance of Earnings as of December 31, 2021
					Outflow (US$ in Thousands)	Inflow						
TSMC China	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	$ 18,939,667 (RMB 4,502,080)	Note 1	$ 18,939,667 (US$ 596,000)	$ -	$ -	$ 18,939,667 (US$ 596,000)	$ 8,555,130	100%	$ 8,619,026 (Note 2)	$ 73,470,628	$ -
TSMC Nanjing	Manufacturing, sales, testing and computer-aided design of integrated circuits and other semiconductor devices	30,521,412 (RMB 6,650,119)	Note 1	30,521,412 (US$ 1,000,000)	-	-	30,521,412 (US$ 1,000,000)	12,283,446	100%	12,283,460 (Note 2)	46,159,494	-

Accumulated Investment in Mainland China as of December 31, 2021 (US$ in Thousands)	Investment Amounts Authorized by Investment Commission, MOEA (US$ in Thousands)	Upper Limit on Investment
$ 49,461,079 (US$ 1,596,000)	$ 119,412,667 (US$ 3,596,000)	$1,302,439,923 (Note 3)

Note 1: TSMC directly invested US$596,000 thousand in TSMC China and US$1,000,000 thousands in TSMC Nanjing.

Note 2: Amount was recognized based on the audited financial statements.

Note 3: The upper limit on investment in mainland China is determined by sixty percent (60%) of the Company's consolidated net worth.

Taiwan Semiconductor Manufacturing Company Limited

INFORMATION ON MAJOR SHAREHOLDERS
DECEMBER 31, 2021

Shareholders (Note)	Shares	
	Total Shares Owned	Ownership Percentage
ADR-Taiwan Semiconductor Manufacturing Company, Ltd.	5,321,212,928	20.52%
National Development Fund, Executive Yuan	1,653,709,980	6.38%

Note: Major shareholders shows the list of all shareholders with ownership of 5 percent or greater.

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Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CASH AND CASH EQUIVALENTS
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Item	Description	Amount
Cash		
Petty cash		$ 340
Cash in banks		
Checking accounts and demand deposits		30,289,920
Foreign currency deposits	Including US$1,859,092 thousand @27.674, JPY10,100,318 thousand @0.2414 and EUR12,664 thousand @31.46	54,285,143
Time deposits	From 2021.08.18 to 2022.04.28, interest rates at 0.25%-0.53%, including NT$238,382,057 thousand and US$2,620,000 thousand @27.674	310,887,937
Cash equivalents		
Repurchase agreements	Expired by 2022.01.21, interest rates at 0.34%	830,901
Total		$ 396,294,241

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NOTES AND ACCOUNTS RECEIVABLE, NET
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Client Name	Amount
Client A	$ 11,696,041
Client B	4,626,876
Client C	2,936,744
Others (Note)	26,986,541
	46,246,202
Less: Loss allowance	(345,905)
Total	$ 45,900,297

Note: The amount of individual client included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF RECEIVABLES FROM RELATED PARTIES
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Client Name	Amount
TSMC North America	$ 137,956,681
Others (Note)	395,693
Total	$ 138,352,374

Note: The amount of individual client included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF INVENTORIES
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Item	Amount	
	Cost	Net Realizable Value
Finished goods	$ 32,290,346	$ 87,338,028
Work in process	134,097,879	467,910,421
Raw materials	10,368,446	10,368,446
Supplies and spare parts	8,403,177	8,403,177
Total	$ 185,159,848	$ 574,020,072

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGES IN INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD
FOR THE YEAR ENDED DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investees	Balance, January 1, 2021		Additions in Investment		Decrease in Investment		Increase (Decrease) in Using the Equity Method	Balance, December 31, 2021			Market Value or Net Assets Value		Collateral
	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Amount (Note 3)	Shares (In Thousands)	%	Amount	Unit Price (NT$)	Total Amount	
Stocks													
TSMC Global	11	$ 382,229,039	-	$ -	-	$ -	$ (7,589,633)	11	100	$ 374,639,406	$ -	$ 374,639,406	Nil
TSMC Partners	988,268	52,649,936	-	-	-	-	2,318,249	988,268	100	54,968,185	-	55,000,301	Nil
TSMC Arizona	30	842,745	740	20,787,702	-	-	(4,962,751)	770	100	16,667,696	-	16,667,696	Nil
VIS	464,223	9,029,890	-	-	-	-	1,583,237	464,223	28	10,613,127	158 (note 1)	73,347,312	Nil
SSMC	314	5,900,245	-	-	-	-	895,454	314	39	6,795,699	-	6,586,102	Nil
VisEra Tech	253,120	6,363,099	-	-	39,501	1,045,516	1,203,648	213,619	73	6,521,231	532 (note 2)	113,749,981	Nil
TSMC North America	11,000	4,568,059	-	-	-	-	303,090	11,000	100	4,871,149	-	4,871,149	Nil
Xintec	111,282	2,554,123	-	-	-	-	492,838	111,282	41	3,046,961	143 (note 1)	15,913,315	Nil
GUC	46,688	1,328,620	-	-	-	-	156,063	46,688	35	1,484,683	586 (note 1)	27,359,085	Nil
JASM	-	-	58	1,416,921	-	-	(33,367)	58	100	1,383,554	-	1,383,554	Nil
TSMC Europe	-	537,737	-	-	-	-	(27,857)	-	100	509,880	-	509,880	Nil
TSMC JDC	11	292,266	4	108,120	-	-	(32,242)	15	100	368,144	-	368,144	Nil
TSMC 3DIC	-	-	11	278,986	-	-	(8,473)	11	100	270,513	-	270,513	Nil
TSMC Japan	6	144,784	-	-	-	-	(12,373)	6	100	132,411	-	132,411	Nil
TSMC Korea	80	42,395	-	-	-	-	(1,538)	80	100	40,857	-	40,857	Nil
Subtotal		466,482,938		22,591,729		1,045,516	(5,715,655)			482,313,496		690,839,706	
Capital													
TSMC China	-	64,243,766	-	-	-	-	9,226,862	-	100	73,470,628	-	73,690,307	Nil
TSMC Nanjing	-	33,573,482	-	-	-	-	12,586,012	-	100	46,159,494	-	46,217,112	Nil
VTAF III	-	214,881	-	2,748	-	-	82,772	-	98	300,401	-	277,098	Nil
Emerging Fund	-	-	-	298,618	-	-	(12,413)	-	99.9	286,205	-	286,205	Nil
VTAF II	-	82,441	-	-	-	-	29,879	-	98	112,320	-	106,074	Nil
Subtotal		98,114,570		301,366		-	21,913,112			120,329,048		120,576,796	
Total		$ 564,597,508		$ 22,893,095		$ 1,045,516	$ 16,197,457			$ 602,642,544		$ 811,416,502	

Note 1: The unit price is calculated by closing price of the Taipei Exchange or the TWSE as of December 30, 2021.

Note 2: The unit price is calculated by average price of the Taipei Exchange as of December 30, 2021.

Note 3: Mainly including share of profit or loss of subsidiaries and associates, share of other comprehensive income of subsidiaries and associates, cash dividends received from subsidiaries and associates, etc.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGE IN RIGHT-OF-USE ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Item	Land	Buildings	Office Equipment	Total	Remark
Cost					
Balance at January 1, 2021	$ 27,100,250	$ 520,395	$ 41,779	$ 27,662,424	
Additions	6,461,764	579,868	12,183	7,053,815	
Deductions	(378)	(85,939)	(7,568)	(93,885)	
Balance at December 31, 2021	$ 33,561,636	$ 1,014,324	$ 46,394	$ 34,622,354	
Accumulated depreciation					
Balance at January 1, 2021	2,225,660	237,309	14,628	2,477,597	
Additions	1,810,555	203,006	15,092	2,028,653	
Deductions	(367)	-	(6,581)	(6,948)	
Balance at December 31, 2021	$ 4,035,848	$ 440,315	$ 23,139	$ 4,499,302	
Carrying amounts at December 31, 2021	$ 29,525,788	$ 574,009	$ 23,255	$ 30,123,052	

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF SHORT-TERM LOANS
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Type	Balance, End of Year	Contract Period	Range of Interest Rates (%)	Loan Commitments	Collateral	Remark
Unsecured loans	$ 114,921,333	2021.08.10-2022.06.28	(0.73)-0	EUR 4,630,000 USD 3,200,000	Nil	-

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCOUNTS PAYABLES
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Accounts payables was NT$41,204,422 thousands. The amount of individual vendor does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF PAYABLES TO RELATED PARTIES
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
TSMC Nanjing	$ 2,761,080
TSMC China	1,802,314
WaferTech	732,533
Xintec	725,261
Others (Note)	1,666,485
Total	$ 7,687,673

Note: The amount of individual vendor in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF PAYABLES TO CONTRACTORS AND EQUIPMENT SUPPLIERS
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Vendor Name	Amount
Vendor A	$ 34,634,124
Vendor B	13,889,632
Vendor C	12,926,999
Vendor D	8,915,250
Vendor E	7,008,676
Others (Note)	58,837,604
Total	$ 136,212,285

Note: The amount of individual vendor included in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF LEASE LIABILITIES
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Item	Description	Lease Term	Discount Rate (%)	Balance, End of Year
Land	Mainly for the use of plants and offices	2 to 22 years	0.39-0.94	$ 19,717,472
Buildings	Mainly for the use of offices	1 to 6 years	0.39-0.71	592,082
Office equipment	For operation use	2 to 4 years	0.28-0.69	23,922
				20,333,476
Less: Current portion				(1,591,153)
Noncurrent portion				$ 18,742,323

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Item	Amount
Refund liability	$ 39,493,180
Contract liabilities	33,951,838
Temporary receipts from customers	30,612,702
Others (Note)	37,437,707
Total	$ 141,495,427

Note: The amount of each item in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF BONDS PAYABLE
DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Bonds Name	Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Amount					Unamortized Repayment	Collateral
					Total Amount	Repayment Paid	Balance, End of Year	Premiums (Discounts)	Carrying Value		
Domestic unsecured bonds-101-3	Taipei Fubon Commercial Bank Co., Ltd.	2012.10.09	On 10.09 annually	1.53	$ 4,400,000	$ -	$ 4,400,000	$ -	$ 4,400,000	Bullet repayment	Nil
Domestic unsecured bonds-101-4 -C	Taipei Fubon Commercial Bank Co., Ltd.	2013.01.04	On 01.04 annually	1.49	3,000,000	-	3,000,000	-	3,000,000	Bullet repayment	Nil
Domestic unsecured bonds-102-1 -C	Taipei Fubon Commercial Bank Co., Ltd.	2013.02.06	On 02.06 annually	1.50	3,600,000	-	3,600,000	-	3,600,000	Bullet repayment	Nil
Domestic unsecured bonds-102-2 -B	Taipei Fubon Commercial Bank Co., Ltd.	2013.07.16	On 07.16 annually	1.70	3,500,000	-	3,500,000	-	3,500,000	Bullet repayment	Nil
Domestic unsecured bonds-102-4 -D	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	1.85	2,600,000	2,600,000	-	-	-	Bullet repayment	Nil
-E	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	2.05	5,400,000	-	5,400,000	-	5,400,000	Bullet repayment	Nil
-F	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	2.10	2,600,000	-	2,600,000	-	2,600,000	Bullet repayment	Nil
Domestic unsecured bonds-109-1 -A	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.58	3,000,000	-	3,000,000	(2,019)	2,997,981	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.62	10,500,000	-	10,500,000	(8,182)	10,491,818	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.64	10,500,000	-	10,500,000	(9,008)	10,490,992	Bullet repayment	Nil
Domestic unsecured bonds-109-2 -A	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.52	5,900,000	-	5,900,000	(3,994)	5,896,006	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.58	10,400,000	-	10,400,000	(8,078)	10,391,922	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.60	5,300,000	-	5,300,000	(4,522)	5,295,478	Bullet repayment	Nil
Domestic unsecured bonds-109-3 -A	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.55	4,500,000	-	4,500,000	(3,215)	4,496,785	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.60	7,500,000	-	7,500,000	(6,066)	7,493,934	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.64	2,400,000	-	2,400,000	(2,118)	2,397,882	Bullet repayment	Nil
Domestic unsecured bonds-109-4 -A	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.58	5,700,000	-	5,700,000	(4,031)	5,695,969	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.65	6,300,000	-	6,300,000	(5,117)	6,294,883	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.67	1,900,000	-	1,900,000	(1,689)	1,898,311	Two equal installments in last two years	Nil
Domestic unsecured bonds-109-5 -A	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.50	4,800,000	-	4,800,000	(3,533)	4,796,467	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.58	8,000,000	-	8,000,000	(6,637)	7,993,363	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.60	2,800,000	-	2,800,000	(2,517)	2,797,483	Two equal installments in last two years	Nil
Domestic unsecured bonds-109-6 -A	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.02	On 12.02 annually	0.40	1,600,000	-	1,600,000	(1,380)	1,598,620	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.02	On 12.02 annually	0.44	5,600,000	-	5,600,000	(5,285)	5,594,715	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.02	On 12.02 annually	0.48	4,800,000	-	4,800,000	(4,817)	4,795,183	Two equal installments in last two years	Nil
Domestic unsecured bonds-109-7 -A	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.29	On 12.29 annually	0.36	1,900,000	-	1,900,000	(1,529)	1,898,471	Two equal installments in last two years	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.29	On 12.29 annually	0.41	10,200,000	-	10,200,000	(8,920)	10,191,080	Two equal installments in last two years	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2020.12.29	On 12.29 annually	0.45	6,400,000	-	6,400,000	(5,930)	6,394,070	Two equal installments in last two years	Nil
Domestic US$ unsecured bonds-109-1	Mega International Commercial Bank Co., Ltd.	2020.09.22	On 09.22 annually	2.70	27,674,000	-	27,674,000	(28,207)	27,645,793	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter)	Nil
Domestic unsecured bonds-110-1 -A	Taipei Fubon Commercial Bank Co., Ltd.	2021.03.30	On 03.30 annually	0.50	4,800,000	-	4,800,000	(4,202)	4,795,798	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.03.30	On 03.30 annually	0.55	11,400,000	-	11,400,000	(10,483)	11,389,517	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.03.30	On 03.30 annually	0.60	4,900,000	-	4,900,000	(4,673)	4,895,327	Bullet repayment	Nil

(Continued)

Bonds Name	Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Amount					Unamortized Repayment	Collateral
					Total Amount	Repayment Paid	Balance, End of Year	Premiums (Discounts)	Carrying Value		
Domestic unsecured bonds-110-2											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.05.03	On 05.03 annually	0.50	$ 5,200,000	$ -	$ 5,200,000	$ (4,662)	$ 5,195,338	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.05.03	On 05.03 annually	0.58	8,400,000	-	8,400,000	(7,858)	8,392,142	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.05.03	On 05.03 annually	0.65	5,600,000	-	5,600,000	(5,406)	5,594,594	Bullet repayment	Nil
Domestic unsecured bonds-110-3											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.06.25	On 06.25 annually	0.52	6,900,000	-	6,900,000	(6,374)	6,893,626	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.06.25	On 06.25 annually	0.58	7,900,000	-	7,900,000	(7,539)	7,892,461	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.06.25	On 06.25 annually	0.65	4,900,000	-	4,900,000	(4,788)	4,895,212	Bullet repayment	Nil
Domestic unsecured bonds-110-4											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.485	4,000,000	-	4,000,000	(3,702)	3,996,298	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.50	8,000,000	-	8,000,000	(7,549)	7,992,451	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.55	5,400,000	-	5,400,000	(5,212)	5,394,788	Bullet repayment	Nil
-D	Taipei Fubon Commercial Bank Co., Ltd.	2021.08.19	On 08.19 annually	0.62	4,200,000	-	4,200,000	(4,124)	4,195,876	Bullet repayment	Nil
Domestic US$ unsecured bonds-110-5	Mega International Commercial Bank Co., Ltd.	2021.09.23	On 09.23 annually	3.10	27,674,000	-	27,674,000	(28,357)	27,645,643	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter)	Nil
Domestic unsecured bonds-110-6											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.535	3,200,000	-	3,200,000	(3,100)	3,196,900	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.54	6,900,000	-	6,900,000	(6,718)	6,893,282	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.60	4,600,000	-	4,600,000	(4,545)	4,595,455	Bullet repayment	Nil
-D	Taipei Fubon Commercial Bank Co., Ltd.	2021.10.05	On 10.05 annually	0.62	1,600,000	-	1,600,000	(1,600)	1,598,400	Bullet repayment	Nil
Domestic unsecured bonds-110-7											
-A	Taipei Fubon Commercial Bank Co., Ltd.	2021.12.09	On 12.09 annually	0.65	7,700,000	-	7,700,000	(7,782)	7,692,218	Bullet repayment	Nil
-B	Taipei Fubon Commercial Bank Co., Ltd.	2021.12.09	On 12.09 annually	0.675	3,500,000	-	3,500,000	(3,543)	3,496,457	Bullet repayment	Nil
-C	Taipei Fubon Commercial Bank Co., Ltd.	2021.12.09	On 12.09 annually	0.72	5,500,000	-	5,500,000	(5,580)	5,494,420	Bullet repayment	Nil
TOTAL					$ 315,048,0000	$ 2,600,000	$ 312,448,000	$ (264,591)	312,183,409		
Less: current portion									(4,400,000)		
									$ 307,783,409		

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NET REVENUE
FOR THE YEAR ENDED DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Item	Shipments (Piece) (Note)	Amount
Wafer	14,178,630	$ 1,402,118,668
Other		172,627,213
Net revenue		$ 1,574,745,881

Note: 12-inch equivalent wafers.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF COST OF REVENUE
FOR THE YEAR ENDED DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Item	Amount
Raw materials used	
Balance, beginning of year	$ 13,758,417
Raw material purchased	56,415,699
Raw materials, end of year	(10,368,446)
Transferred to manufacturing or operating expenses	(10,981,143)
Others	(200,555)
Subtotal	48,623,972
Direct labor	18,715,561
Manufacturing expenses	747,716,382
Manufacturing cost	815,055,915
Work in process, beginning of year	88,575,222
Work in process, end of year	(134,097,879)
Transferred to manufacturing or operating expenses	(37,978,640)
Cost of finished goods	731,554,618
Finished goods, beginning of year	21,338,980
Finished goods purchased	66,032,066
Finished goods, end of year	(32,290,346)
Transferred to manufacturing or operating expenses	(19,492,776)
Scrapped	(197,224)
Subtotal	766,945,318
Others	19,171,526
Total	$ 786,116,844

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF OPERATING EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 2021
(In Thousands of New Taiwan Dollars)

Item	Research and Development Expenses	General and Administrative Expenses	Selling Expenses
Payroll and related expense	$ 42,226,907	$ 11,638,789	$ 3,023,857
Consumables	36,331,182	129,888	15
Depreciation expense	25,427,064	1,714,495	35,087
Repair and maintenance expense	5,853,864	1,648,596	2,372
Donation expense	5,000	4,376,018	-
Management fees of the Science Park Administration	-	2,928,361	-
Patents	-	2,352,979	-
Commission	-	-	982,988
Others (Note)	13,573,258	6,178,474	238,563
Total	$ 123,417,275	$ 30,967,600	$ 4,282,882

Note: The amount of each item in others does not exceed 5% of the account balance.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF LABOR, DEPRECIATION AND AMORTIZATION BY FUNCTION
FOR THE YEARS ENDED DECEMBER 31, 2021 AND 2020
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

	Year Ended December 31, 2021				Year Ended December 31, 2020			
	Classified as Cost of Revenue	Classified as Operating Expenses	Classified as Other Operating Income and Expenses	Total	Classified as Cost of Revenue	Classified as Operating Expenses	Classified as Other Operating Income and Expenses	Total
Labor cost								
Salary and bonus	$ 81,828,800	$ 51,640,741	$ -	$ 133,469,541	$ 69,338,762	$ 45,256,603	$ -	$ 114,595,365
Labor and health insurance	4,214,578	2,511,734	-	6,726,312	3,237,054	2,161,319	-	5,398,373
Pension	2,084,604	1,135,950	-	3,220,554	1,551,256	962,997	-	2,514,253
Board compensation	-	507,304	-	507,304	-	525,853	-	525,853
Others	2,098,074	1,093,824	-	3,191,898	1,736,977	1,031,341	-	2,768,318
	$ 90,226,056	$ 56,889,553	$ -	$ 147,115,609	$ 75,864,049	$ 49,938,113	$ -	$ 125,802,162
Depreciation	$ 375,608,062	$ 27,176,646	$ 146,549	$ 402,931,257	$ 288,762,450	$ 24,585,627	$ 31,609	$ 313,379,686
Amortization	$ 5,510,463	$ 2,590,267	$ -	$ 8,100,730	$ 4,732,478	$ 2,315,216	$ -	$ 7,047,694

Note 1: As of December 31, 2021 and 2020, the Company had 54,193 and 47,917 employees, respectively. There were both 9 non-employee directors.

Note 2: Average labor cost for the years ended December 31, 2021 and 2020 were NT$2,706 thousand and 2,615 thousand, respectively.

Note 3: Average salary and bonus for the years ended December 31, 2021 and 2020 were NT$ 2,463 thousand and 2,392 thousand, respectively. The average salary and bonus increased by 2.97% year over year.

Note 4: The Company did not have supervisors for the years ended December 31, 2021 and 2020. Therefore, there was no compensation to the supervisor.

Note 5: The Company's compensation policies: The Company's employees are entitled to a comprehensive compensation and benefits program above the industry average. The compensation program includes a monthly salary, business performance bonuses based on quarterly business results, and a profit sharing bonus based on annual profits. The Company determines the amount of the business performance bonus and profit sharing based on operating results and industry practice in the R.O.C.. The amount and distribution of the bonus and profit sharing are recommended by the Compensation Committee to the Board of Directors for approval. Individual rewards are based on each employee's job responsibility, contribution and performance.

Note 6: The total compensation paid to the executive officers is decided based on their job responsibility, contribution, company performance and projected future risks the Company will face. It is reviewed by the Compensation Committee then submitted to the Board of Directors for approval.

Note 7: According to the Company's Articles of Incorporation, the Board of Directors is authorized to determine the salary for the Chairman, Vice Chairman and Directors, taking into account the extent and value of the services provided for the management of the Company and the standards of the industry within the R.O.C. and overseas. The Articles of Incorporation also provide that the compensation to directors shall be no more than 0.3% of annual profits and directors who also serve as executive officers of the Company are not entitled to receive compensation to directors. The distribution of compensation to directors shall be made in accordance with the Company's "Rules for Distribution of Compensation to Directors" based on the following principles: (1) directors who also serve as executive officers of the Company are not entitled to receive compensation; (2) the compensation for independent directors may be higher than the other directors, as all independent directors also serve as members of the Audit Committee and the Compensation Committee and thus participate in the discussions as well as resolutions of related committee meetings in accordance with the charter of each committee; and (3) the compensation for overseas independent directors may be higher than domestic independent directors.

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Taiwan Semiconductor Manufacturing Company, Ltd.



Mark Liu, Chairman