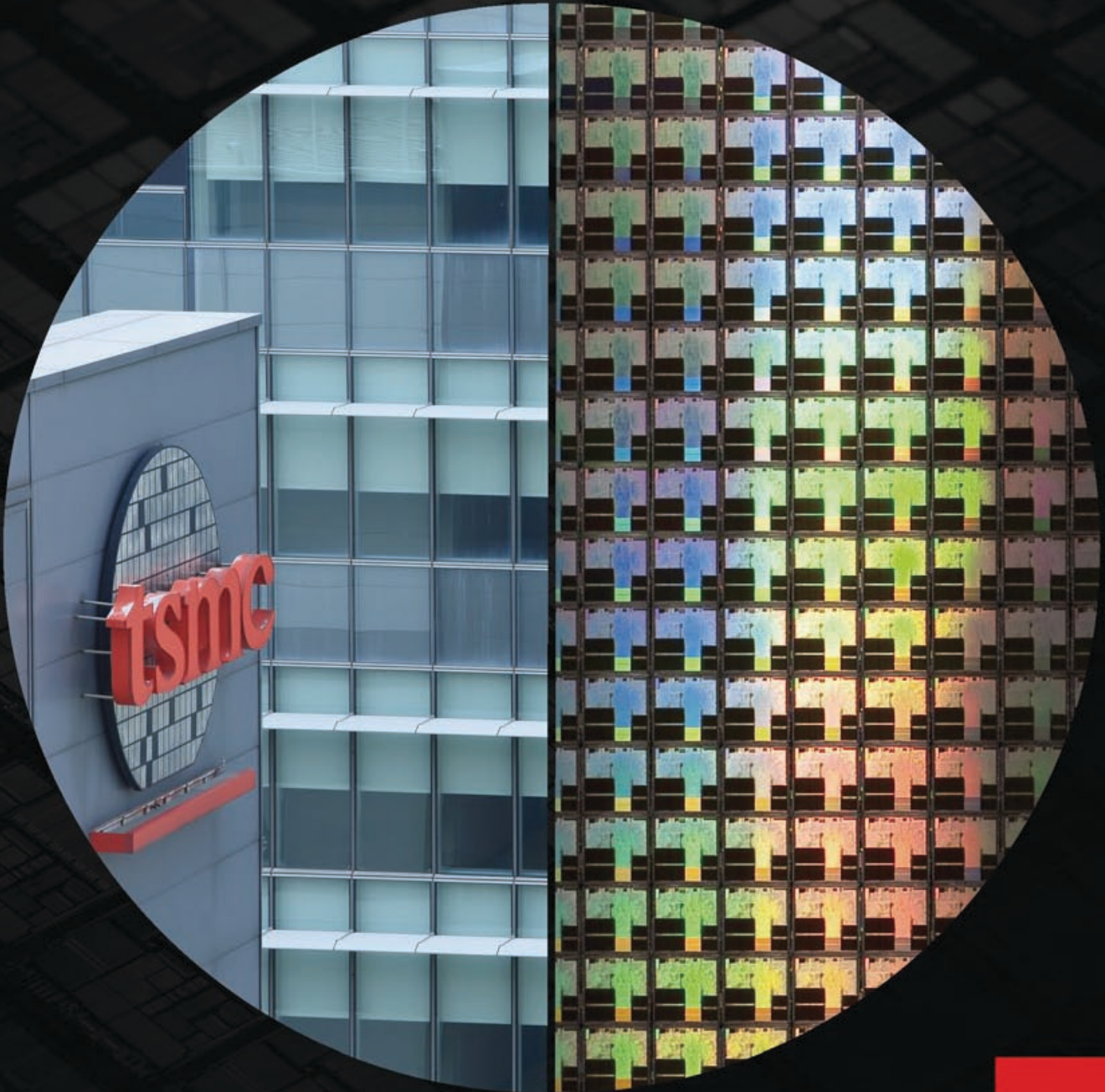




TSMC Annual Report 2020 (I)



TSMC Vision, Mission & Core Values

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

Mission

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

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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1. Letter to Shareholders



> Skyscrapers towering into the night sky (Left)



> Orderly ranks of semiconductor fab equipment (Right)

Dear Shareholders,

2020 was a devastating year for the entire world due to the COVID-19 pandemic, and our thoughts and hearts go out to all those who have been affected. With the spread of COVID-19, millions of lives were lost, many cities entered lock down, and the world experienced massive economic and societal disruptions. However, semiconductor industry demand remained resilient, as trends such as work-from-home and distance learning emerged to help to accelerate the digital transformation. At TSMC, our top priority is to protect the health and safety of our employees, and ensure our global fab operations continue delivering to customers. While we have been successful so far, we will remain vigilant and continue our utmost efforts to weather this pandemic.

For TSMC, although 2020 was a year of extraordinary challenges, it was also a year of significant growth and progress. Facing upheaval brought by the global COVID-19 pandemic as well as geopolitical tensions, we worked dynamically with our customers, and doubled down our commitment to technology leadership, manufacturing excellence, and customer trust. In 2020, we delivered an eleventh consecutive year of record revenue, thanks to strong demand coming to our industry-leading 5-nanometer (N5) and 7-nanometer (N7) technologies. Our revenue increased 31.4% year-over-year in US dollar terms, as compared to about 10% year-over-year growth for the semiconductor industry.

We continued to focus on the fundamentals of our business in 2020 by enriching our R&D infrastructures, enlarging our talent pipeline, strengthening our information protection and cybersecurity, and accelerating our technology differentiation.

In 2020, fueled by the industry megatrends of 5G and high performance computing (HPC) applications, both driving semiconductor content enrichment, we increased our 2020 capital spending to US\$17.2 billion. As TSMC enters another period of higher growth, we will continue to invest to capture the opportunities that will follow.

In 2020, we successfully ramped our industry-leading N5 technology, to enable our customers' innovations for both smartphone and HPC applications. As the foundry industry's most advanced solution with the best performance, power and area (PPA), N5 further expands our customer product portfolio and increases our addressable markets.

In its third year of ramp, our 7-nanometer family, which includes N7, N7+ and N6, continued to see very strong demand across a wide spectrum of products from smartphone, HPC, Internet of Things (IoT) and Automotive applications.

Our 3-nanometer technology will be another full node stride from our N5, and offer the most advanced foundry technology in both PPA and transistor technology when it is introduced.

In 2020, TSMC introduced 3DFabric™, an umbrella of the company's fast-growing portfolio of 3DIC system integration solutions under one family of technologies. Our differentiated chiplet and heterogeneous integration technologies drive better power efficiency, greater compute density, and smaller form factor benefits for our customers, while shortening their time-to-market. We are working with several product leaders on 3DFabric™ to enable chiplet architectures.

Highlights of TSMC's accomplishments in 2020:

- Total wafer shipments were 12.4 million 12-inch equivalent wafers as compared to 10.1 million 12-inch equivalent wafers in 2019.
- Advanced technologies (16-nanometer and beyond) accounted for 58 percent of total wafer revenue, up from 50 percent in 2019.
- We deployed 281 distinct process technologies, and manufactured 11,617 products for 510 customers.
- TSMC produced 24 percent of the world semiconductor excluding memory output value in 2020, as compared to 21 percent in the previous year.

2020 Financial Performance

Consolidated revenue reached NT\$1,339.255 billion, an increase of 25.2 percent over NT\$1,069.99 billion in 2019. Net income was NT\$517.89 billion and diluted earnings per share were NT\$19.97. Both increased 50.0 percent from the 2019 level of NT\$345.26 billion net income and NT\$13.32 diluted EPS.

TSMC generated net income of US\$17.60 billion on consolidated revenue of US\$45.51 billion, which increased 57.5 percent and 31.4 percent respectively from the 2019 level of US\$11.18 billion net income and US\$34.63 billion consolidated revenue.

Gross profit margin was 53.1 percent compared with 46.0 percent in 2019, while operating profit margin was 42.3 percent compared with 34.8 percent a year earlier. Net profit margin was 38.7 percent, an increase of 6.4 percentage points from 2019's 32.3 percent.

In 2020, total cash dividend payments to shareholders sustained at NT\$10 per share.

Technological Developments

In 2020, we continued to increase our investment in R&D to US\$3.72 billion to unleash our customers' innovations and extend our technology leadership.

Our 3-nanometer will offer up to 70% logic density gain, up to 15% performance gain and up to 30% power reduction as compared with N5. N3 technology development is on track with good progress. N3 will offer complete platform support for both mobile and HPC applications. Volume production is targeted in second half of 2022.

Our 5-nanometer (N5) technology successfully entered volume production in the second quarter of 2020 and experienced a strong ramp in the second half. We plan to offer continuous enhancements, such as N4, to extend the leadership of our 5-nanometer family. N4 is a straightforward migration from N5 with compatible design rules, while providing further performance, power and density enhancements for the next wave 5-nanometer products. N4 volume production is scheduled in 2022.

In its third year, 7-nanometer technology continued to see one of TSMC's fastest ramp ups in volume production, shipping more than one billion good dies in this process for hundreds of products from dozens of customers. Our N7+ also entered its second year of ramp using EUV lithography technology, while N6, which provides a clear migration path for next wave 7-nanometer products, entered volume production at the end of 2020. N6 will further extend our 7-nanometer family well into the future.

Our 16nm/12nm family has received over 650 customer product tape-outs across smartphone, HPC, storage and consumer electronics applications. We also unveiled our N12e™ process, bringing TSMC's world-class FinFET transistor technology to AI-enabled IoT devices, by providing both powerful computing performance and outstanding power efficiency.

The value of our technology platforms are evolving to include logic wafer scaling, design-technology co-optimization, and 3DIC. We have developed a comprehensive 3DIC technology roadmap to enhance system-level performance and drive greater energy efficiency. These technologies include chip stacking solutions such as SoIC (System on Integrated Chip), as well as advanced packaging solutions such as InFO (Integrated Fan-Out) and CoWoS® (Chip on Wafer on Substrate). TSMC's CoWoS® continued to integrate with larger interposer size for heterogeneous integration. We are also working with customers on TSMC-SolC™, which is expected to be first adopted by HPC applications where bandwidth performance, power efficiency, and form factors are aggressively pursued.

TSMC's ecosystem, the Open Innovation Platform®, empowers our 510 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 35,000 items in 2020. More than 12,000 technology files and over 450 process design kits, from 0.5-micron to 3-nanometer, are available to customers via TSMC-Online. We saw more than 100,000 customer downloads in 2020.

Corporate Social Responsibility

The foundation of TSMC's corporate social responsibility is a sound corporate governance built upon our core values that balances the interests of all stakeholders. Guided by the UN Sustainable Development Goals, our Corporate Social Responsibility Executive Committee has set our CSR focuses to be on driving green manufacturing, building a responsible supply chain, creating an inclusive workplace, developing STEM talent, and caring for the underprivileged.

Joining in the global effort to combat COVID-19, TSMC leveraged our expertise in technology, global procurement and supply chain management with a budget of US\$20 million to aid communities near TSMC sites with urgent needs in Taiwan, Mainland China, Japan, Europe and the United States. This included donations of personal protection equipment and ventilators to hospitals, public health agencies, and related parties; providing relief to vulnerable communities with immediate food, shelter, and medical aid; and collaborating with leading institutes on COVID-19 diagnostics, vaccines and therapeutics development.

As a responsible corporate citizen, TSMC is dedicated to fighting climate change and protecting the environment of the world that we share. By 2030, we target to supply 25% of power consumed by our fabs, and 100% of power consumed for non-fab facilities, using renewable energy. In 2020, we signed the largest renewables corporate power purchasing agreement in the world, and committed to renewable energy purchase agreements totaling 1.3 gigawatts. We have further committed to supplying 100% of TSMC's power from renewable energy and generating zero indirect carbon emissions from electricity consumption by 2050, enabling us to become the first semiconductor company to join the RE100 renewable energy initiative in 2020.

Corporate Developments

In May 2020, TSMC announced its intention to build and operate an advanced semiconductor fab in the United States, in the state of Arizona. This fab will start with 5-nanometer technology at 20,000 wafers per month capacity. Production is targeted to begin in 2024. A U.S. fab will enable TSMC to expand our technology ecosystem, better serve our customers and partners, and extend our reach for global talents.

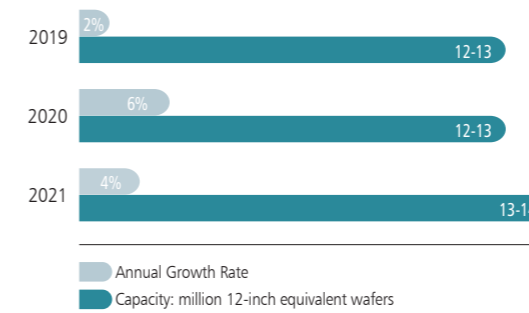
Honors and Awards

TSMC received recognition for achievements in innovation, corporate governance, sustainability, investor relations and overall excellence in management from organizations including *Forbes*, *Fortune Magazine*, *CommonWealth Magazine*, *Business Today*, RobecoSAM (S&P Global), RE100 and the Taiwan Stock Exchange. TSMC also received the prestigious 2021 IEEE Corporate Innovation Award, honoring the Company's leadership in developing 7-nanometer foundry technology and enabling the innovations of IC designers everywhere. 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 20 consecutive years. TSMC also received recognition as one of *Wall Street Journal's* "100 Most Sustainably Managed Companies" and *Corporate Knight's* 2020 "Global 100 Most Sustainable Corporations". Meanwhile, we remained a major component in both various MSCI ESG and FTSE4Good indices. In investor relations, TSMC continued to receive multiple awards from *Institutional Investor Magazine*.

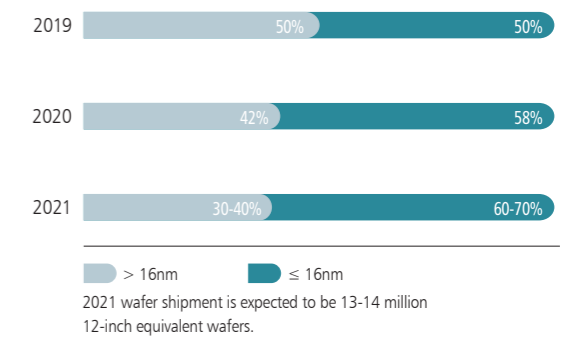
Outlook

The challenges of the COVID-19 pandemic have only renewed TSMC's dedication to enabling innovations that improve peoples' lives. Digital technology has helped us weather the disruptions of the COVID-19 pandemic by allowing people to work, learn, and play in the safety of their homes, and also by maintaining our bonds with distant loved ones during difficult times. Beyond that, it has accelerated a digital transformation of society, with technology becoming increasingly essential in people's lives.

Capacity Plan



Wafer Sales Plan



As we enter the 5G era, the performance of digital computing for AI and 5G is insatiable. A smarter and more intelligent world will require massive increases in computation performance and greater need for energy efficient computing, fueling strong demand for advanced semiconductor technologies. With our leadership in advanced process technologies, our broad portfolio of specialty technologies and 3DIC solutions, our unparalleled manufacturing capabilities, and deep collaborative relationships with customers, we are well positioned to capture the growth from these megatrends in the years ahead.

While macroeconomic uncertainties may linger, we will continue to work on the fundamentals of our business to further extend our technology differentiation. We will adhere to our dedicated foundry business model, and collaborate with all the IC innovators to unleash innovation. We will continue to conduct our business with integrity, sell our value, and treat all customers fairly. We will sharpen our Trinity of Strengths of technology leadership, manufacturing excellence, and customer trust, so that we may continue to fulfill our mission to be the trusted technology and capacity provider of the global logic IC industry for years to come.

We remain dedicated to world-class governance, sustainability, and good returns to our shareholders. We thank you for the trust and commitment you have placed in TSMC. We are excited about our future, and look forward to a long and prosperous relationship together.



Mark Liu
Chairman

C.C. Wei
Chief Executive Officer

2. Company Profile



> Crisscrossing city boulevards (Left)



> A precisely configured circuit board (Right)

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. And so, 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. The Company manufactured 11,617 different products using 281 distinct technologies for 510 different customers in 2020.

TSMC-made semiconductors serve a global customer base that is large and diverse and includes a wide range of applications. These products are used in a variety of end markets including mobile devices, high performance computing, automotive electronics and the Internet of Things (IoT). 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 12 million 12-inch equivalent wafers in 2020. 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 May 2020, TSMC announced its intention to build and operate an advanced semiconductor fab in the United States, in order to better support customers and partners there as well as to attract global talents. This facility, to be built in Arizona, will utilize TSMC's 5-nanometer technology for semiconductor wafer fabrication and will have a capacity of 20,000 semiconductor wafers per month. Construction is planned to start in 2021 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 2020, the Company and its subsidiaries employed more than 56,000 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 2020, TSMC maintained its leading position in the foundry segment of the global semiconductor industry by producing 24% of the world semiconductor excluding memory output value, increasing from 21% in 2019, as the Company's growth was fueled by the industry megatrends 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 2020, 58% of TSMC's wafer revenue came from advanced manufacturing processes – defined as geometries of 16nm and smaller – up from 50% in 2019.

TSMC offers the foundry segment's broadest 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, in 2020 TSMC introduced 3DFabric™, a comprehensive family of 3D silicon stacking and advanced packaging technologies to complement its process technology offerings. 3DFabric™ provides the Company's customers greater chip design flexibility to unleash innovation and is another differentiating competitive advantage for the Company.

In 2020, the Company developed or introduced the following:

Logic Technology

- 3nm fin field-effect transistor (FinFET) (N3) technology development is on track with good progress. This world-leading technology is optimized for both mobile and high performance computing applications, and is expected to receive multiple customer product tape-outs in 2021. In addition, volume production is expected to start in the second half of 2022.
- 4nm FinFET (N4) technology is an enhanced version of 5nm FinFET (N5) technology, with compatible design rules while providing further enhancement in performance, power and density for the next wave of 5-nanometer products. The

development of N4 is on schedule with good progress, and volume production is expected to start in 2022.

- 5nm FinFET (N5) technology is currently TSMC's most advanced technology that leads the world in volume production. Products using this technology from various customers entered volume production in 2020 for applications including mobile and high performance computing products.
- 5nm FinFET Plus (N5P) technology is a performance-enhanced version of N5 technology with same design rules. N5P technology provides about 20% faster speed than N7 technology or about 40% power reduction. TSMC received multiple customer tape-outs by the end of 2020 and expects to start N5P technology volume production in 2021.
- 6nm FinFET (N6) technology successfully entered risk production in the first quarter of 2020 as planned. 6nm uses extreme ultraviolet (EUV) lithography technology to replace conventional immersion layers for better yield and shorter cycle time. The design rules of N6 technology are completely compatible with its 7nm FinFET (N7) predecessor and this technology offers a new standard cell with nearly 18% logic density improvement. TSMC has received more than 20 N6 product tape-outs. Due to the easy porting capability from N7 design, many customers' products already entered volume production in 2020, while meeting customers' expectations for both product quality and yield. It is expected the majority of N7 technology customers will migrate to N6 technology in coming years.
- N7 technology is one of TSMC's fastest technologies in terms of time to volume production, and provides optimized manufacturing processes for both mobile computing applications and high performance computing components. Following its volume production in April 2018, this technology produced more than one billion fully functional and defect-free chips in total in August 2020, for well over 100 customer products. TSMC's large-scale capacity advantage and efficient manufacturing capability mean more than merely producing a large amount of chips quickly. These also help improve quality and reliability, and facilitate technology advancement. In addition, 7nm FinFET plus (N7+) has been in volume production since 2019, which was the first commercially available EUV foundry process technology in the world. Its success has paved the way for N6, N5, and future advanced technologies.
- 16nm/12nm technology family received a total of over 650 customer product tape-outs by the end of 2020 for different product applications including mobile phone, high performance computing, storage and consumer electronics. 12nm FinFET compact plus (12FFC+) technology shares

the same design rules as 12nm FinFET compact (12FFC) technology to help customers migrate to 12FFC+ technology quickly. Compared to 12FFC technology, this technology provides about an additional 5% speed improvement or 10% power reduction. 12FFC+ technology entered risk production in 2019 and started volume production in 2020 as planned. In addition, TSMC introduced N12e™ technology in 2020, bringing TSMC's world-class FinFET transistor technology to AI-enabled Internet of Things and other high efficiency, high performance edge devices. N12e™ technology leverages TSMC's 12FFC+ baseline and IP ecosystem and offers industry-leading low operating voltage (low Vdd), and excellent low leakage performance of ultra-low-leakage (ULL) SRAM (static random access memory), and new ultra-low leakage devices.

- 22nm ultra-low leakage (22ULL) technology began volume production in 2019 to support IoT and wearable devices applications. In addition, 22ULL low Vdd solutions were ready in 2019. Compared to 40ULP and 55ULP technologies, 22ULL technology offers new ULL device, ULL SRAM, and low Vdd solutions to significantly lower power consumption. Moreover, new enhanced analog devices were available in 2020 to further enrich the 22ULL platform to support customers for broader applications.
- 22nm ULP (22ULP) technology was developed based on TSMC's industry-leading 28nm technology and received a total of more than 60 product tape-outs by the end of 2020. Compared to 28nm high performance compact plus (28HPC+) technology, 22ULP provides 10% area reduction with 10% speed gain, or 20% power reduction for many applications including image processing, digital TVs, set-top boxes, smartphones and consumer products.
- 28HPC+ technology accumulated more than 350 customer product tape-outs by the end of 2020. 28HPC+ technology provides further performance enhancement or power reduction in mainstream smartphone, digital TV, storage, audio and SoC (System-on-Chip) applications. Compared to 28HPC technology, 28HPC+ technology improves performance by about 15% or reduces leakage by about 50%.
- 40nm ULP (40ULP) technology received a total of over 150 product tape-outs by the end of 2020. This technology supports a variety of IoT and wearable devices applications, including wireless connectivity, wearable application processors and micro control units (MCUs). In addition, TSMC uses its leading 40ULP low Vdd solution for IoT and wearable devices. Newly enhanced analog devices are available, which enrich the 40ULP platform to support customers for broader analog design needs in the future.

- 55nm ultra-low power (55ULP) technology received a total of over 90 customer product tape-outs by the end of 2020. Compared to 55nm low power (55LP) technology, 55ULP can significantly increase battery life for IoT applications. In addition, it integrates RF (radio frequency) and eFlash (embedded flash) to enable customers' SoC designs.

Specialty Technology

- N7 technology foundation IPs (intellectual properties) passed the Automotive Electronic Council AEC-Q100 Grade-1 qualification and were certified for functional safety standard ISO 26262 ASIL-B in 2020. In addition, TSMC continues to develop more 5nm automotive foundation IPs, which are expected to complete AEC-Q100 Grade-2 qualification in 2022.
- The N6 radio frequency (N6 RF) technology development started in 2020. This technology is built upon the N6 logic technology platform and adds high performance RF transistors and passive devices that can support more power and area efficient circuit designs. This new RF technology will enable future generations of wireless local area network (WLAN) and fifth-generation (5G) RF transceiver integrated circuits. The design kit for this technology is expected to be completed in 2021.
- 16FFC RF technology led the foundry to start production of the 5G mobile network chips for customers in 2018. This technology has been extended to the next generation wireless local area network (WLAN) WiFi 6/6E, 5G sub-6GHz RF transceivers and millimeter wave (mmWave) applications. Continuing to advance 16FFC RF technology, in 2019 TSMC not only delivered the world's first FinFET device whose f_T (cut-off frequency) can reach >300 GHz, but also completed the development of the world's first and best FinFET device with >400 GHz f_{max} (max oscillation frequency). These high performance RF transistors can be used in diverse applications such as mmWave automotive radar to reduce chip power consumption and die size as well as to enable SoC designs. In 2020, TSMC entered the 2nd year of high volume production of 16FFC RF products for our customers.
- 22ULL analog technology platform was established in 2020. This platform is fully logic compatible and offers low-noise 2.5-volt input/output (IO) transistors and low temperature-coefficient-of-resistance (TCR) TaN (Tantalum nitride) thin film resistors to support customers' differentiated analog designs. In addition, TSMC provides customers with random telegraph signal (RTS) noise guidelines as RTS has become an increasingly challenging issue, particularly in low power analog circuit design.
- 22ULL RF technology received more than 20 customer product tape-outs in 2020, covering applications such as 4G

transceiver and wireless connectivity to IoT. This technology can support wireless LAN power amplifier devices and ultra-low leakage devices, in addition to magnetic random access memory (MRAM) and resistive random access memory (RRAM).

- 22ULL embedded RRAM technology IPs completed reliability qualification in 2020. Following 40ULP embedded RRAM technology, this technology is TSMC's second generation RRAM solution with balanced cost and reliability. This technology is fully complementary-metal-oxide-semiconductor (CMOS) logic compatible for process design kits (PDKs) and IP re-use for various applications including wireless MCU, IoT and wearable devices.
- 22ULL embedded MRAM technology IPs completed reliability qualification in 2020, with $>100K$ cycle endurance and reflow capability. This technology demonstrated automotive Grade-1 capability and started volume production for customer wearable products in 2020. This technology is fully complementary-metal-oxide-semiconductor logic compatible for process design kit (PDK) and IP re-use for applications including wireless MCU, IoT and wearable devices.
- 28HPC+ RF technology led the foundry segment to deliver the first RF process design kit in 2018, providing support for 110GHz mmWave, 150°C automotive grade and so on for 5G mmWave RF and automotive radar product designs. In 2019, 28HPC+ RF technology extended its support for ultra-low leakage devices and embedded flash. Customers' 5G mmWave RF, automotive radar and wireless connectivity products using this technology entered volume production in 2020.
- 28nm ULL eFlash technology completed AEC-Q100 Grade-1 reliability qualification in 2019. TSMC continues to enhance this technology, which is expected to meet more stringent AEC-Q100 Grade-0 requirements in 2021.
- 28nm high voltage (HV) (28HV) technology, built upon the success of TSMC's leading 28HPC+ technology, offers a superior low power advantage based on a low V_{dd} at 0.9 volt. In addition, it features the world's first high bandwidth 128Mb static random access memory (SRAM). 28HV technology is an optimal solution for the next generation of high-end organic light-emitting diode (OLED) display drivers. The 28HV shuttle service has been offered to customers from 2021.
- 40ULP eFlash technology received a total of over 60 product tape-outs by the end of 2020, including MCUs, wireless MCUs and security elements. In addition, 40ULP eFlash technology offers a low V_{dd} option, which provides a low energy consumption solution for IoT devices and wearable connected devices.

- 40ULP analog technology platform was established in 2020. This platform is fully logic compatible and offers analog-friendly low flicker noise and low mismatch transistors. In addition, to further enhance TSMC's analog offerings, a low TCR silicon chromium (SiCr) thin film resistor and a RTS noise guideline are being developed and expected to complete in 2021. For analog and mixed-signal applications, 40ULP analog platform supports customers' needs for optimal logic performance and density, low power consumption, and superior analog device enhancements with a cost-effective advantage.
- 12-inch 40nm Bipolar-CMOS-DMOS (BCD) Plus technology passed qualification in 2020. The Company has helped customers complete new tape-outs and this technology is expected to start volume production in 2021. As resistive random access memory (RRAM) can be integrated, this technology can support customers' designs for special applications requiring heavy firmware, such as wireless charger chips, to enhance product performance and offer better cost advantages.
- 0.13 μ m Silicon on Isolator (0.13SOI) technology on 8-inch wafers successfully entered volume production in 2020 for customer products of sub-6GHz RF front-end module (RF FEM), including smartphones and wireless local area networks (WLANs), following the delivery of the first RF process design kit in 2019. TSMC's 0.13SOI technology provides high cutoff frequency (f_T) and low on-resistance-off capacitance ($R_{on}-C_{off}$) to support low noise amplifier (LNA) and RF switch product designs.
- 12-inch 0.13 μ m Bipolar-CMOS-DMOS (BCD) plus technology completed phase-1 continual improvement process (CIP) in 2020 and significantly improved the specific on-resistance (R_{sp}) of some power devices by more than 20%. The corresponding process design kit was available, and phase-2 CIP is expected to be completed in 2021. Compared to the previous 0.13 μ m BCD technology, this technology provides continuous performance improvement and features enhancement for power management applications in high-end smartphones.
- 0.18 μ m BCD third generation technology passed AEC-Q100 qualification in 2020. Compared to the second generation BCD technology, this technology provides better cost competitiveness.
- Gallium nitride (GaN) on silicon technology was further enhanced to integrate GaN power switches with drivers in both 650V and 100V platforms, as well as improve reliability to support customer designs for higher power density and efficiency solutions for various market applications. Both 650V and 100V GaN IC technology platforms are expected to be ready in 2021.

- CMOS Image Sensor (CIS) technology was further refined to support the strong demand in advanced smartphone cameras. In early 2020, TSMC helped customers lead the market in rolling out 0.8 μ m pixel products. Pixel size was further reduced to 0.7 μ m within nine months with timely volume production. The smaller pixel size enables 30% higher resolution for CIS with the same chip size.
- TSMC successfully manufactured single photon avalanche diode (SPAD) 3D sensing products for customers with 0.13 μ m Bipolar-CMOS-DMOS technology and 45nm stacked CIS technology in 2020 to capture the growth opportunity of 3D sensing market. In addition, for stacked CIS technology, TSMC further launched 22ULL technology and speeds up 12FFC technology development to support the requirement for higher performance and lower power consumption for image signal processors (ISP). In the meantime, TSMC established an R&D pilot line of 28nm CIS technology to support customers in developing more advanced CIS devices in the future.
- TSMC successfully used CMOS MEMS (micro electro-mechanical systems) technology in 2020 to support customers in delivering monolithic ultrasonic scanners. This single-chip device helps customers realize portable ultrasonic scanners at affordable low prices. Thus, many more people can have an easier access to ultrasonic scanners to improve health and living.

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

- In 2020 TSMC introduced 3DFabric™, a comprehensive family of 3D silicon stacking and advanced packaging technologies, which are comprised of frontend TSMC-SolC™ 3D silicon stacking and backend 3D interconnect technologies which include CoWoS® (chip on wafer on substrate) and InFO (integrated fan-out), providing customers flexible solutions for integration of chiplets.
- TSMC-SolC™ (System on Integrated Chip) technology features both wafer-on-wafer (WoW) and chip-on-wafer (CoW) processes. This allows the stacking of both similar and dissimilar dies, greatly improving system performance while reducing a product's form factor. Continuing to develop CoW process technology, in 2020 TSMC successfully demonstrated WoW technology with good electrical results on heterogeneous integration of memory on logic and deep trench capacitor (DTC) on logic applications.
- Successfully developed InFO-PoP (Integrated Fan-Out Package-on-Package) technology, which integrates 5nm SoC (System-on-Chip) and DRAM (dynamic random access memory) for advanced mobile device applications. This technology helped deliver customer products to market in high volume in 2020.

- InFO_oS (Integrated Fan-out Wafer on substrate) technology extended its support to 90mmX90mm package size to integrate up to a total of nine SoC chips per module in 2020.
- In addition to conventional silicon interposer technology (Chip on Wafer on Substrate with Silicon Interposer, CoWoS®-S) which has been in volume production, TSMC extended the interconnect technology to redistribution layer (RDL) interposers (Chip on Wafer on Substrate with Redistribution Layer Interposer, CoWoS®-R) and local silicon interconnect interposers (Chip on Wafer on Substrate with Local Silicon Interconnect Interposer, CoWoS®-L) in 2020 and is engaging with customers in technology qualification and evaluation.
- Fine pitch copper (Cu) bump technology for flip chip packaging on 5nm silicon successfully entered production in 2020 for both advanced mobile and high performance computing applications.

2.2.2 Market Overview

TSMC estimates that the worldwide semiconductor market excluding memory reached US\$359 billion in revenue in 2020, representing a 10% increase from 2019. In the foundry segment of the semiconductor industry, total revenue rose to US\$80 billion in 2020, a robust growth of 20% over 2019.

2.2.3 Industry Outlook, Opportunities and Threats

Foundry Industry Demand and Supply Outlook

For 2020, TSMC's strong growth in the foundry segment was driven by increased market demand for 5G smartphones and high-performance computing (HPC) products such as PCs, tablets, game consoles, servers, and 5G base station, which were further boosted by increasing "shelter at home" and "work from home" during the COVID-19 pandemic. Meanwhile, to cope with high market demand and supply uncertainties, the electronics supply chain took on higher inventory levels, which also contributed to foundry and TSMC growth. For 2021, TSMC forecasts further increases in demand for overall electronics device, driven by the ongoing 5G smartphone ramp-up and continued strength in HPCs, supporting the acceleration of digital transformation, resulting in the total semiconductor market excluding memory to have a low-teens growth. Over the longer term, fueled by increasing semiconductor content in electronic devices, continued market share gains by fabless companies, increases in integrated device manufacturer (IDM) outsourcing, and expanding in-house application-specific integrated circuits (ASIC) from systems companies, the Company expects foundry segment revenue to outpace the mid-single-digit compound annual growth

rate projected for the overall semiconductor market excluding memory from 2020 through 2025.

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

• Smartphones

Smartphone unit shipments, which were down a modest 2% in 2019, declined again in 2020 by 9%, reflecting their already high penetration in many developed countries and China, as well as the impact of the COVID-19 pandemic on consumer purchasing power. With 5G commercialization continuing to accelerate, new 5G smartphones will likely shorten the overall replacement cycle. As a result, TSMC projects a high-single-digit growth for the smartphone market in 2021. 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.

Low-power integrated circuit (IC) technology is an essential requirement among handset manufacturers, and system-on-chip (SoC) design is the preferred solution given its optimized cost, power, and form factor (IC footprint and thickness) potential. TSMC is the acknowledged leader in process technology for manufacturing system-on-chip. Spurred by the appetite for higher performance to run artificial intelligence (AI) applications, various complex software computation and higher resolution video, the migration to advanced process technologies will continue to accelerate.

• High Performance Computing (HPC)

The HPC platform includes PCs, tablets, game consoles, servers, and base stations, etc. Major HPC unit shipments grew by 11% in 2020, mainly driven by the COVID-19 "stay at home economy" and rapid 5G base station deployment.

The HPC market is projected to have a high-single-digit unit growth in 2021, following its strong growth in 2020. Several factors are expected to drive demand in the HPC platform, including ongoing 5G base station deployment, rising data center AI server demand, and next generation game console ramping. All these require higher performance and power-efficient CPUs, GPUs, NPUs, AI accelerators, and related-ASICs, which will drive the overall HPC platform towards richer silicon content and more advanced process technologies.

• Internet of Things (IoT)

The Internet of Things platform includes various types of connected devices, such as smart wearables, smart speakers, and surveillance systems. Boosted by pandemic-driven demand, IoT unit shipments grew 17% in 2020, with Bluetooth earphones, smart wearables, and smart health devices as the major growth drivers.

Looking ahead to 2021, IoT unit shipments will grow about 30%, thanks to the continued momentum of Bluetooth earphones, smart watches and smart speakers. In addition, the pandemic is changing consumers' life and working styles, further triggering more applications for disease management and prevention. By adding more AI functions, IoT devices will drive demand for more powerful yet lower power-consuming controllers, connectivity ICs and sensors. TSMC offers high-performance yet low-power process technologies to meet industry trends and help customers succeed in the marketplace.

• Automotive

Worldwide car unit sales fell 14% in 2020 as global economies were softened by the COVID-19 pandemic. Car unit sales are projected to rebound, however, in 2021 with growth in the low-teens driven by expected recovery in global economies and the automotive market in particular.

Moving forward, TSMC expects semiconductor content requirement, driven by electric vehicles (EVs), advanced driver assistance systems (ADAS) and infotainment systems, to fuel the demand for processors, sensors, analog and power ICs. TSMC offers a wide variety of process technologies to help customers compete and succeed in the automotive market.

• Digital Consumer Electronics (DCE)

DCE unit shipments fell 7% in 2020. Sales of TVs and set-top boxes exceeded expectation thanks to the "stay at home economy", but other consumer products such as digital cameras continued to decline due to stagnant demand and cannibalization by smartphones.

A slight rebound in the overall DCE market is expected in 2021 as certain sub-segments such as 4K and smart TVs continue to show positive growth. In addition, AI functions such as picture quality improvement and voice control are increasingly incorporated in TVs. With a broad array of advanced technology offerings, TSMC expects to take advantage of these market trends.

Supply Chain

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

2.2.4 TSMC Position, Differentiation and Strategy

Position

TSMC is a worldwide semiconductor foundry leader for advanced, specialty and advanced packaging technologies. In 2020, TSMC produced 24% of the world semiconductor excluding memory output value, increasing from 21% in 2019. Net revenue by geography, based mainly on the country in which customers are headquartered, was: 62% from North America; 11% from the Asia Pacific region, excluding China and Japan; 17% from China; 5% from Europe, the Middle East and Africa; and 5% from Japan. Net revenue by platform was: 48% from the smartphone; 33% from the high performance computing (HPC); 8% from the Internet of Things (IoT); and 3% from automotive. In addition, 4% came from digital consumer electronics; and 4% from others.

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® and Grand Alliance initiatives. The Open Innovation Platform® 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 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 electronics, and digital consumer electronics and in response to the fact that focus of customer demand is shifting from process-technology-centric to product-application-centric, TSMC has constructed five corresponding technology platforms to provide customers with the most 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 platforms are:

Smartphones: TSMC offers customers leading process technologies such as 5nm FinFET (N5), 6nm FinFET (N6), 7nm FinFET Plus (N7+), and 7nm FinFET (N7) 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, TSMC offers leading process technologies such as 6nm FinFET, 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, high-end, mid-end and entry-level product applications, the Company offers the most 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: Driven by data explosion and application innovation, high performance computing 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 5nm FinFET, 6nm FinFET, 7nm FinFET 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 and anytime. Based on advanced process nodes, a variety of high performance computing products have been launched, such as central processing units (CPUs), graphics processor units (GPUs), field programmable gate arrays (FPGAs), server processors, accelerator, high-speed networking chips, etc. Those 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-SolC™, to enable homogeneous and heterogeneous chip integration to meet customers' 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 customers capture market growth in high performance computing markets.

Internet of Things: TSMC provides leading, comprehensive and highly integrated ultra-low power (ULP) technology platforms to enable innovations for artificial intelligence (AI) of things (AIoT, AI+IoT) applications. The Company's offerings include

FinFET-based 12-nanometer technology – N12e™ featuring energy efficiency with high performance that results in more computing power and AI inferencing, 22nm ULP/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 (low operating voltage) offerings with wide-range 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 leading InFO technology to support the fast-growing demand in AIoT edge computing and wireless connectivity.

Automotive Electronics: TSMC's Automotive Electronics 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 first and extends to 7nm FinFET and 5nm FinFET, for advanced driver-assistance systems (ADAS) and advanced in-vehicle infotainment (IVI), the two most computationally demanding systems in the automotive industry. In addition to its advanced logic platform, TSMC offers broad and 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, is being developed with good progress to meet automotive Grade-1 requirements. All these automotive technologies are applied to TSMC's automotive process qualification standards based on AEC-Q100 standards.

Digital Consumer Electronics (DCE) Platform: TSMC provides customers with leading and comprehensive technologies to deliver AI-enabled smart devices for DCE applications, including smart digital TV (DTV), set-top box (STB), AI-embedded smart camera and associated wireless local area network (WLAN), power IC, timing controller (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 for 8K/4K DTV, 4K streaming STB, 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 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

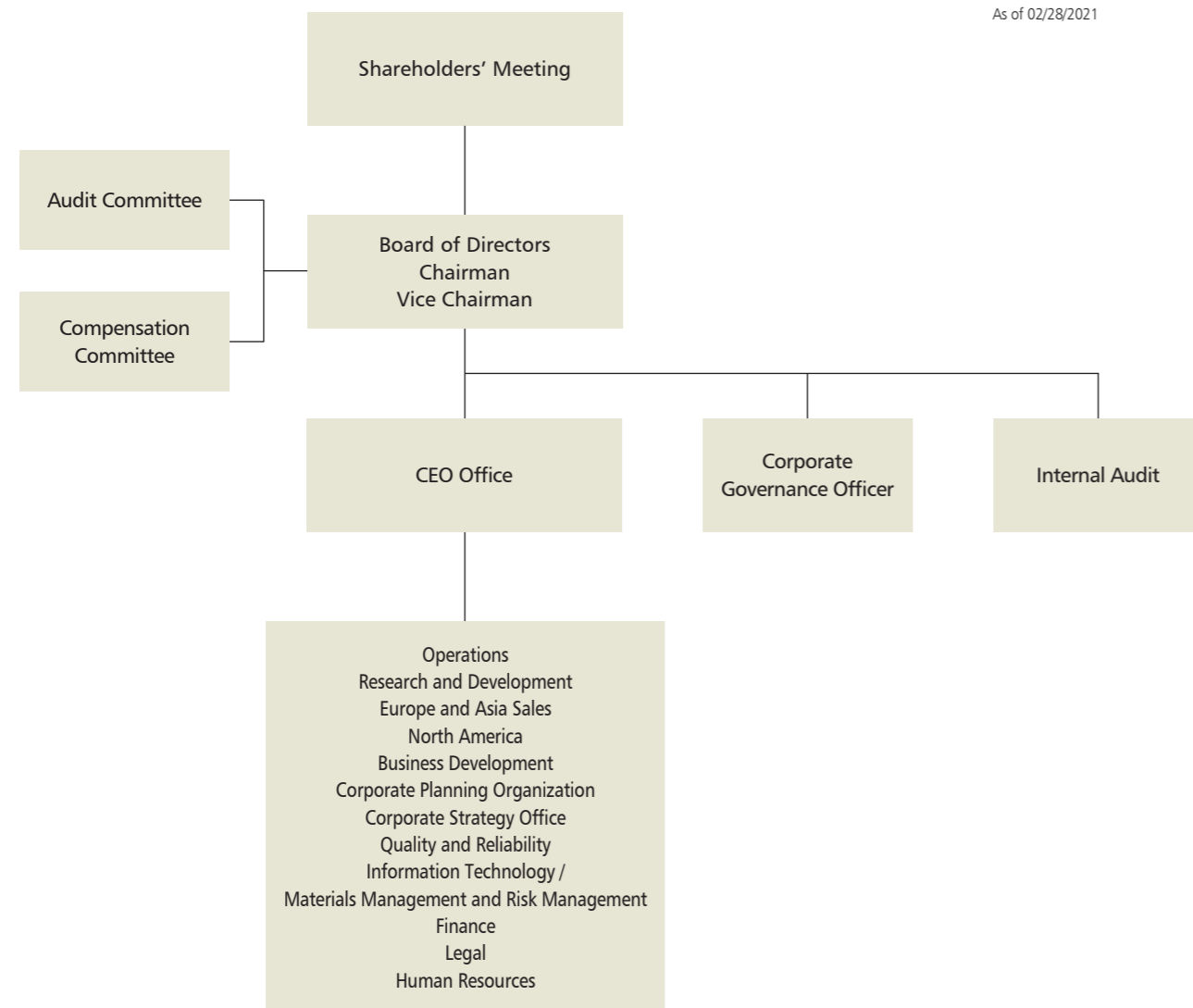
1. Substantially ramp up the business and sustain advanced technology market share by continued increasing capacity and R&D investments.
2. Maintain mainstream technology market share by expanding business to new customers and market segments.
3. Continue to enhance the competitive advantages of the Company's platforms in smartphones, high performance computing, IoT, and automotive electronics design ecosystems, so as 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



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

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 02/28/2021

Title/Name	Gender	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, Past Positions & Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares	%	Shares	%	Shares	%		
Chairman Mark Liu	Male	U.S.	06/05/2018	06/04/2021	06/08/2017	12,913,114	0.05%	12,913,114	0.05%	-	-	Bachelor Degree in Electrical Engineering, National Taiwan University Master Degree and Ph.D. in Electrical Engineering & Computer Science, University of California, Berkeley, U.S. Former President, Worldwide Semiconductor Manufacturing Corp. Former Senior Vice President, Advanced Technology Business, TSMC Former Senior Vice President, Operations, TSMC Former Executive Vice President and Co-Chief Operating Officer, TSMC Former President and Co-CEO, TSMC Chairman, Taiwan Semiconductor Industry Association (TSIA)	None
Vice Chairman C.C. Wei	Male	R.O.C.	06/05/2018	06/04/2021	06/08/2017	7,179,207	0.03%	7,179,207	0.03%	261	0.00%	Bachelor and Master Degrees in Electrical Engineering, National Chiao Tung University Ph.D. in Electrical Engineering, Yale University, U.S. Former Senior Vice President, Chartered Semiconductor Manufacturing Ltd., Singapore Former Senior Vice President, Mainstream Technology Business, TSMC Former Senior Vice President, Business Development, TSMC Former Executive Vice President and Co-Chief Operating Officer, TSMC Former President and Co-CEO, TSMC	CEO, TSMC
Director F.C. Tseng	Male	R.O.C.	06/05/2018	06/04/2021	05/13/1997	34,472,675	0.13%	34,472,675	0.13%	132,855	0.00%	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 Former President, Vanguard International Semiconductor Corp. Former President, TSMC Former Deputy CEO, TSMC Former Vice Chairman, TSMC Former Independent Director, Chairman of Audit Committee & Compensation Committee member, Acer Inc. Former Director, National Culture and Arts Foundation, R.O.C. Chairman, TSMC Education and Culture Foundation Director, Cloud Gate Culture and Arts 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	R.O.C.	06/05/2018	06/04/2021	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%	- -	- -	B.A., Statistics, Fu Jen Catholic University M.A., Economics, National Taiwan University Ph.D., Economics, National Chung Hsing University Former Minister without Portfolio, Executive Yuan Former Deputy Minister, Ministry of Economic Affairs Former Deputy Minister, National Development Council Former Member, National Stabilization Fund Management Committee, Executive Yuan Former Consultant, Ministry of Economic Affairs Former Advisory Committee Member, Mainland Affairs Council, Executive Yuan Former Vice President, Taiwan Institute of Economic Research Former Research Fellow, Taiwan Institute of Economic Research Former Research Fellow, Science and Technology Advisory Group, Executive Yuan Former Deputy Executive Secretary, Industrial Development Advisory Council, Ministry of Economic Affairs Former Adjunct Assistant Professor, Tamkang University Minister without Portfolio, Executive Yuan & concurrently Minister, National Development Council, R.O.C.	Director, Taiwan Capital Management Corp. (Representative of the National Development Fund)

(Continued)

Title/Name	Gender	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, 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	UK	06/05/2018	06/04/2021	05/07/2002	-	-	-	-	-	-	Bachelor and Honours Degrees in Engineering, Loughborough University Fellow of the Royal Academy of Engineering Former Chairman and CEO, ICL Plc, UK Former CEO and Chairman of the Executive Committee, British Telecommunications Plc Former Vice President, the British Quality Foundation Former Director, Mentor Graphics Corp., U.S. Former Director, Sony Corp., Japan Former Director, L.M. Ericsson, Sweden Former Chairman, GlobalLogic Inc., U.S. Former Senior Advisor, Hampton Group, London Former 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) Advisory Board Member, The Longreach Group Ltd., HK Senior Advisor, Alix Partners LLP, London Board Mentor, Chairman Mentors International (CMI) Ltd., London (a non-public company)
Independent Director Stan Shih	Male	R.O.C.	06/05/2018	06/04/2021	04/14/2000	1,480,286	0.01%	1,480,286	0.01%	16,116	0.00%	BSEE & MSEE, National Chiao Tung University Honorary EE Ph.D., National Chiao Tung University Honorary Doctor of Technology, The Hong Kong Polytechnic University Honorary Fellowship, University of Wales, Cardiff, UK Honorary Doctor of International Law, Thunderbird, American Graduate School of International Management, U.S. Co-Founder, Chairman Emeritus, Acer Group Former Chairman & CEO, Acer Group Former Director, Qisda Corp. Former Director, Wistron Corp. Former Director, Digitimes Inc. Former Chairman, National Culture and Arts Foundation, R.O.C. Council member of Asian Corporate Governance Associate (ACGA) Chairman, StanShih Foundation Chairman, Cloud Gate Culture and Arts Foundation Director, Public Television Service Foundation, R.O.C.	Chairman, CT Ambi Investment and Consulting Inc. (a non-public company) Director of: - Acer Inc. - Egis Technology Inc. - Nan Shan Life Insurance Co., Ltd. (a non-listed company) - Chinese Television System Inc. (a non-listed company)
Independent Director Kok-Choo Chen	Female	R.O.C.	06/05/2018	06/04/2021	06/09/2011	-	-	-	-	-	-	Inns of Court School of Law, England Barrister-at-law, England Advocate & Solicitor, Singapore Attorney-at-law, California, U.S. 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 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 Founder and Executive Director, Museum207 (located in Taipei) Director, Republic of China Female Cancer Foundation	None

(Continued)

Title/Name	Gender	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, Past Positions & Current Positions at Non-profit Organizations	Selected Current Positions at TSMC and Other Companies
						Shares	%	Shares	%	Shares	%		
Independent Director Michael R. Splinter	Male	U.S.	06/05/2018	06/04/2021	06/09/2015	-	-	-	-	-	-	Bachelor and Master Degrees in Electrical Engineering, University of Wisconsin-Madison Honorary Ph.D. in Engineering, University of Wisconsin-Madison Former Executive Vice President of Technology and Manufacturing group, Intel Corp. Former Executive Vice President of Sales and Marketing, Intel Corp. Former CEO, Applied Materials, Inc. Former Chairman, Applied Materials, Inc. Former Director, The NASDAQ OMX Group, Inc. Former Director, Silicon Valley Leadership Group Former Director, Semiconductor Equipment and Materials International (SEMI) Former Director, Meyer Burger Technology Ltd., Switzerland Former Director, University of Wisconsin Foundation 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.
Independent Director Moshe N. Gavriellov	Male	U.S.	06/05/2019	06/04/2021	06/05/2019	-	-	-	-	-	-	Bachelor Degree in Electrical Engineering, Technion - Israel Institute of Technology Master Degree in Computer Science, Technion - Israel Institute of Technology In a variety of engineering and engineering management positions, National Semiconductor Corp. and Digital Equipment Corp. In a variety of executive management positions, LSI Logic Corp. for nearly 10 years Former CEO, Verisity, Ltd., U.S. Former Executive Vice President and General Manager of the Verification Division, Cadence Design Systems, Inc., U.S. Former President and CEO, Xilinx, Inc., U.S. Former Director, Xilinx, Inc., U.S. Director, San Jose Institute of Contemporary Art	Executive Chairman, Wind River Systems, Inc., U.S. (a non-public company) Independent Director, SiMa Technologies, Inc., U.S. (a non-public company) Director, ForeteliX, Ltd., Israel (a non-public company)
Independent Director Yancey Hai (Note 3)	Male	R.O.C.	06/09/2020	06/04/2021	06/09/2020	-	-	-	-	-	-	M.A., International Business Management, University of Texas at Dallas Former Country Manager, GE Capital Taiwan Former Vice Chairman and CEO, Delta Electronics, Inc.	Chairman and Chair of Strategic Steering Committee, Delta Electronics, Inc. (Delta) Director of Delta's subsidiaries: - Delta Electronics Power (Dongguan) Co., Ltd. (a non-public company) - 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, USI Corporation Director, CTCI Corporation

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 Shareholder 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: Mr. Yancey Hai was elected as TSMC's independent director at TSMC's Annual Shareholders' Meeting on June 9, 2020.

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		From TSMC	From All Consolidated Entities	
															Cash	Stock (Fair Market Value)	Cash	Stock (Fair Market Value)			
Chairman Mark Liu	13,263,733	13,263,733	188,946	188,946	408,158,960	408,158,960	1,339,256	1,339,256	0.0817%	0.0817%	-	-	-	-	-	-	-	-	0.0817%	0.0817%	-
Vice Chairman C.C. Wei	-	-	-	-	-	-	-	-	-	-	218,583,985	218,583,985	188,946	188,946	204,079,480	-	204,079,480	-	0.0816%	0.0816%	-
Director F.C. Tseng	-	-	-	-	10,560,000	10,560,000	1,309,298	1,309,298	0.0023%	0.0023%	-	-	-	-	-	-	-	-	0.0023%	0.0023%	7,900,018
Director National Development Fund, Executive Yuan Representative: Ming-Hsin Kung (Note 2)	-	-	-	-	10,560,000	10,560,000	-	-	0.0020%	0.0020%	-	-	-	-	-	-	-	-	0.0020%	0.0020%	-
Independent Director Sir Peter L. Bonfield	-	-	-	-	15,558,488	15,558,488	-	-	0.0030%	0.0030%	-	-	-	-	-	-	-	-	0.0030%	0.0030%	-
Independent Director Stan Shih	-	-	-	-	13,200,000	13,200,000	-	-	0.0025%	0.0025%	-	-	-	-	-	-	-	-	0.0025%	0.0025%	-
Independent Director Kok-Choo Chen	-	-	-	-	13,200,000	13,200,000	-	-	0.0025%	0.0025%	-	-	-	-	-	-	-	-	0.0025%	0.0025%	-
Independent Director Michael R. Splinter	-	-	-	-	15,558,488	15,558,488	-	-	0.0030%	0.0030%	-	-	-	-	-	-	-	-	0.0030%	0.0030%	-
Independent Director Moshe N. Gavrielov	-	-	-	-	15,558,488	15,558,488	-	-	0.0030%	0.0030%	-	-	-	-	-	-	-	-	0.0030%	0.0030%	-
Independent Director Yancey Hai (Note 3)	-	-	-	-	7,397,802	7,397,802	-	-	0.0014%	0.0014%	-	-	-	-	-	-	-	-	0.0014%	0.0014%	-
Total	13,263,733	13,263,733	188,946	188,946	509,752,226	509,752,226	2,648,554	2,648,554	0.1015%	0.1015%	218,583,985	218,583,985	188,946	188,946	204,079,480	-	204,079,480	-	0.1832%	0.1832%	7,900,018

*Other than disclosure in the above table, Directors remunerations earned by providing services (e.g. providing consulting services as a non-employee) to TSMC and all consolidated entities in the 2020 financial statements: Advisor Fee to Dr. F.C. Tseng NT\$14,976,345.

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

Note 3: Mr. Yancey Hai was elected as TSMC's independent director at TSMC's Annual Shareholders' Meeting on June 9, 2020.

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 (totalled NT\$3,810,232).

Note 6: Total remuneration paid to the directors from TSMC and from all consolidated entities in 2019, including their employee compensation, both accounted for 0.1940% of 2019 net income.

2.5 Management Team

2.5.1 Information Regarding Management Team

As of 02/28/2021

Title Name (Note 1)	Gender	Nationality	On-board Date (Note 2)	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Education and Selected Past Positions	Selected Current Positions at Other Companies	Managers Who are Spouses or within Second-degree Relative of Consanguinity to Each Other (Note 3)		
				Shares	%	Shares	%	Shares	%			Title	Name	Relation
Chief Executive Officer C.C. Wei	Male	R.O.C.	02/01/1998	7,179,207	0.03%	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 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/Technology 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/CEO & President, TSMC AZ Corporate Strategy Office/TSMC AZ Rick Cassidy	Male	U.S.	11/14/1997	-	-	-	-	-	-	Bachelor, Engineering Technology, United States Military Academy at West Point, U.S. Chief Executive Officer, TSMC North America President, TSMC North America Vice President, TSMC North America	Director, TSMC subsidiary 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/Technology 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	2,583,947	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 and Asia Sales Cliff Hou (Note 4)	Male	R.O.C.	12/15/1997	376,104	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, TSMC subsidiaries President, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Senior Vice President Business Development Kevin Zhang (Note 5)	Male	U.S.	11/01/2016	68,000	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%	69,112	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 (TIPLLO)	Director and/or Supervisor, TSMC subsidiaries	None	None	None
Vice President Human Resources Connie Ma	Female	R.O.C.	06/01/2014	180,000	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 (Note 6)	Male	R.O.C.	12/28/1994	235,000	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 (Note 1)	Gender	Nationality	On-board Date (Note 2)	Shares Held		Shares Held by Spouse & Minors		Shares Held in the Name of Others		Education and Selected Past Positions	Selected Current Positions at Other Companies	Managers Who are Spouses or within Second-degree Relative of Consanguinity to Each Other (Note 3)		
				Shares	%	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	65,485	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.	None	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 subsidiary 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	1,651,617	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 and/or Supervisor, TSMC subsidiaries President, TSMC subsidiaries Director, TSMC affiliate	None	None	None
Vice President Research and Development/More than Moore Technologies C.S. Yoo (Note 7)	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	Director, TSMC subsidiary (Note 7)	None	None	None
Vice President Quality and Reliability Jun He (Note 8)	Male	U.S.	05/22/2017	5,000	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 (Note 9)	Male	U.S.	03/21/2016	-	-	-	-	-	-	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 (Note 10)	Male	U.S.	01/04/2021	-	-	-	-	-	-	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

Note 1: Vice President Dr. Philip Wong resigned and became a special consultant to TSMC, effective April 1, 2020. Vice President Dr. Alexander Kalnitsky retired, effective December 29, 2020.

Note 2: On-board date means the official date joining TSMC.

Note 3: President (or someone with an equivalent job responsibility, i.e. the highest ranking manager of the company) and Chairman are not (1) the same person, (2) in a marital relationship with each other, or (3) within one degree of consanguinity.

Note 4: Dr. Cliff Hou was promoted to Senior Vice President, effective May 12, 2020.

Note 5: Dr. Kevin Zhang was promoted to Senior Vice President, effective August 11, 2020.

Note 6: Dr. Doug Yu was promoted to TSMC Distinguished Fellow, effective December 18, 2020.

Note 7: Dr. C.S. Yoo was promoted to Vice President, effective November 10, 2020; Vice President C.S. Yoo was no longer the Director of VisEra Technologies Company Ltd. since March 4, 2021.

Note 8: Dr. Jun He was promoted to Vice President, effective November 10, 2020.

Note 9: Dr. Geoffrey Yeap was promoted to Vice President, effective February 9, 2021.

Note 10: Dr. Chris Horng-Dar Lin was promoted to Vice President and Chief Information Officer, effective February 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 5)		Bonuses and Allowances (C) (Note 6)		Profit Sharing (D)				(A+B+C+D) as a % of Net Income (Note 7)		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		From TSMC	From All Consolidated Entities	
								Cash	Stock (Fair Market Value)	Cash	Stock (Fair Market Value)			
Chief Executive Officer	C.C. Wei	10,497,000	10,497,000	188,946	188,946	208,086,985	208,086,985	204,079,480	-	204,079,480	-	0.0816%	0.0816%	-
Vice President, Chief Financial Officer/Spokesperson	Wendell Huang	4,126,559	4,126,559	74,279	74,279	25,698,511	25,698,511	24,598,870	-	24,598,870	-	0.0105%	0.0105%	-
Senior Vice President	Lora Ho													
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													
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	Alexander Kalnitsky (Note 2)	83,190,377	98,595,937	1,498,583	1,881,651	753,768,216	837,226,277	724,312,204	-	724,312,204	-	0.3018%	0.3209%	-
Vice President and TSMC Fellow	T.S. Chang													
Vice President	Michael Wu													
Vice President	Min Cao													
Vice President	H.-S. Philip Wong (Note 2)													
Vice President	Marvin Liao													
Vice President	Y.H. Liaw													
Vice President	Simon Jang													
Vice President	C.S. Yoo (Note 3)													
Vice President	Jun He (Note 3)													
Vice President	Geoffrey Yeap (Note 4)													
Vice President and Chief Information Officer	Chris Horng-Dar Lin (Note 4)													
Total		97,813,936	113,219,496	1,761,808	2,144,876	987,553,712	1,071,011,773	952,990,554	-	952,990,554	-	0.3939%	0.4131%	-

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: Vice President and TSMC Fellow Dr. Alexander Kalnitsky retired, effective December 29, 2020. Vice President Dr. H.-S. Philip Wong resigned and became a special consultant to TSMC, effective April 1, 2020.

Note 3: Dr. C.S. Yoo and Dr. Jun He were promoted to Vice President, effective November 10, 2020. These amounts did not include compensation for the period before their promotion.

Note 4: Dr. Geoffrey Yeap and Dr. Chris Horng-Dar Lin were promoted to Vice President, effective February 9, 2021. Therefore, their 2020 compensation data are not disclosed.

Note 5: Pensions funded according to applicable law. In accordance with TSMC Procedure of Retirement, the pension payment to Dr. Alexander Kalnitsky amounts to NT\$10,016,160.

Note 6: The above-mentioned figures include the expense for the business performance bonuses distributed in May, August, November 2020 & February 2021, and Company cars and gasoline reimbursements.

Note 7: Total compensation paid to the executive officers from TSMC in 2019 accounted for 0.4488% of 2019 net income. Total compensation paid to the executive officers from all consolidated entities in 2019 accounted for 0.4477% of 2019 net income.

Compensation Paid to CEO and Vice Presidents

	2020	
	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	C.S. Yoo, Jun He	C.S. Yoo, Jun He
NT\$10,000,000 ~ NT\$14,999,999	H.-S. Philip Wong	H.-S. Philip Wong
NT\$15,000,000 ~ NT\$29,999,999	None	None
NT\$30,000,000 ~ NT\$49,999,999	None	None
NT\$50,000,000 ~ NT\$99,999,999	Wendell Huang, J.K. Wang, Cliff Hou, Kevin Zhang, Sylvia Fang, Connie Ma, Y.L. Wang, Doug Yu, Alexander Kalnitsky, T.S. Chang, Michael Wu, Min Cao, Marvin Liao, Y.H. Liaw, Simon Jang	Wendell Huang, Rick Cassidy, J.K. Wang, Cliff Hou, Kevin Zhang, Sylvia Fang, Connie Ma, Y.L. Wang, Doug Yu, Alexander Kalnitsky, T.S. Chang, Michael Wu, Min Cao, Marvin Liao, Y.H. Liaw, Simon Jang
Over NT\$100,000,000	C.C. Wei, Lora Ho, Wei-Jen Lo, Y.P. Chin, Y.J. Mii, J.K. Lin	C.C. Wei, Lora Ho, Wei-Jen Lo, Y.P. Chin, Y.J. Mii, J.K. Lin
Total	25	25

2.5.3 Employees' Profit Sharing Paid to Management Team

Unit: NT\$

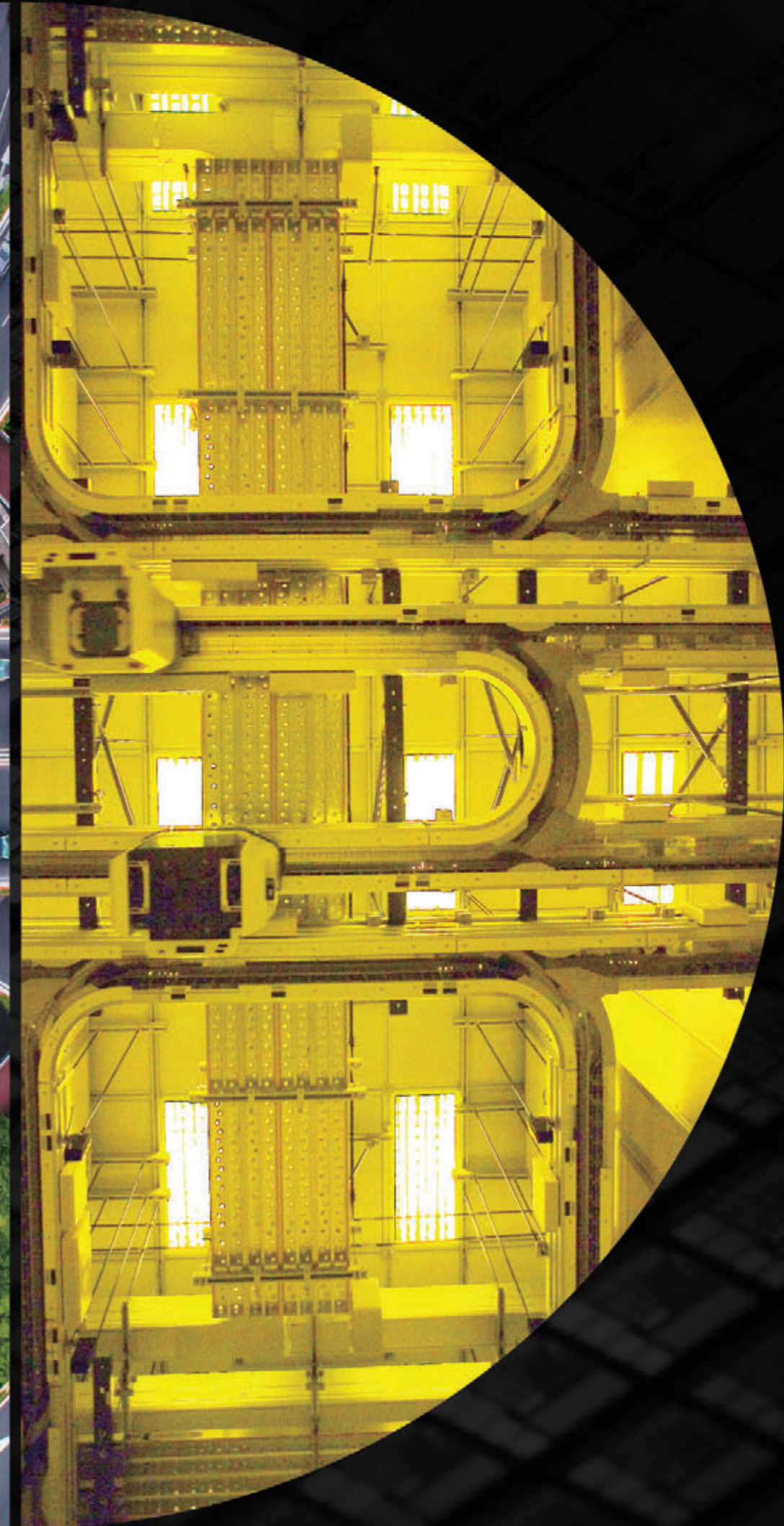
Title	Name	Stock (Fair Market Value)	Cash	Total	Total Profit Sharing Paid to Management Team as a % of Net Income
Chief Executive Officer	C.C. Wei	-	204,079,480	204,079,480	0.0394%
Vice President, Chief Financial Officer/Spokesperson	Wendell Huang	-	24,598,870	24,598,870	0.0047%
Senior Vice President	Lora Ho				
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				
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	-	724,312,204	724,312,204	0.1399%
Vice President and TSMC Fellow	Alexander Kalnitsky (Note 1)				
Vice President and TSMC Fellow	T.S. Chang				
Vice President	Michael Wu				
Vice President	Min Cao				
Vice President	H.-S. Philip Wong (Note 1)				
Vice President	Marvin Liao				
Vice President	Y.H. Liaw				
Vice President	Simon Jang				
Vice President	C.S. Yoo (Note 2)				
Vice President	Jun He (Note 2)				
Vice President	Geoffrey Yeap (Note 3)				
Vice President and Chief Information Officer	Chris Horng-Dar Lin (Note 3)				
Total		-	952,990,554	952,990,554	0.1840%

Note 1: Vice President and TSMC Fellow Dr. Alexander Kalnitsky retired, effective December 29, 2020. Vice President Dr. H.-S. Philip Wong resigned and became a special consultant to TSMC, effective April 1, 2020.

Note 2: Dr. C.S. Yoo and Dr. Jun He were promoted to Vice President, effective November 10, 2020. These amounts did not include compensation for the period before their promotion.

Note 3: Dr. Geoffrey Yeap and Dr. Chris Horng-Dar Lin were promoted to Vice President, effective February 9, 2021. Therefore, their 2020 compensation data are not disclosed.

3. Corporate Governance



> The ceaseless flow of city traffic (Left)

> Intelligent operations of automated materials systems (Right)

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.

2020 Corporate Governance Awards and Ratings

Organization	Awards
Dow Jones Sustainability Indices (DJSI)	Dow Jones Sustainability World Index for the 20 th consecutive year Dow Jones Sustainability Emerging Markets Index
RobecoSAM (S&P Global)	The Sustainability Yearbook Award 2020 – Gold Class
MSCI ESG Indexes	MSCI ACWI ESG Leaders Index component MSCI ACWI SRI Index component MSCI Emerging Markets ESG Leaders Index
Sustainalytics	“Top Rated” within the Semiconductor Industry
FTSE4Good Index	FTSE4Good Emerging Index component FTSE4Good All-World Index component FTSE4Good TIP Taiwan ESG Index component
Wall Street Journal	The 100 Most Sustainably Managed Companies in the World
Corporate Knights	Global 100 Most Sustainable Corporations
Institute of Electrical and Electronics Engineers (IEEE)	2021 IEEE Corporate Innovation Award
Institutional Investor Magazine	Most Honored Company (Technology/Semiconductors) – All-Asia Best ESG Metrics (Technology/Semiconductors) – 1 st Place (buy-side and sell-side) – All-Asia
FORTUNE	2020 World’s Most Admired Companies Fortune Global 500
Forbes	World’s Best Employers
Taiwan Stock Exchange	Top 5% in Corporate Governance Evaluation of Listed Companies for the 6 th consecutive year
CommonWealth Magazine	Corporate Social Responsibility Award – Large cap – 1 st Place
Taiwan Institute of Sustainable Energy	The Most Prestigious Sustainability Awards – Top Ten Domestic Corporates – for the 5 th consecutive year Taiwan Top 50 Corporate Responsibility Report Awards – IT & IC Manufacturing Industry – Platinum Award

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; Co-Founder, Chairman Emeritus of the Acer Group, Mr. Stan Shih; 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. Gavriellov; and currently Chairman of Delta Electronics Inc., Mr. Yancey Hai. Independent Directors constitute 60% of the Board.

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.

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 CSR/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 established “Guidelines for Nomination of Directors”, which describes 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 Independence Analysis

According to the relevant requirements set by Taiwan's Securities and Futures Bureau, the professional qualifications and independence status of the Company's Board members are listed in the table below.

Name	Criteria	Meet the Following Professional Qualification Requirements, Together with at Least Five Years Work Experience			Criteria (Note)												Number of Other Taiwanese Public Companies Concurrently Serving as an Independent Director	
		An Instructor or Higher Position in a Department of Commerce, Law, Finance, Accounting, or Other Academic Department Related to the Business Needs of the Company in a Public or Private Junior College, College or University	A Judge, Public Prosecutor, Attorney, Certified Public Accountant, or Other Professional or Technical Specialists Who Has Passed a National Examination and Been Awarded a Certificate in a Profession Necessary for the Business of the Company	Have Work Experience in the Area of Commerce, Law, Finance, or Accounting, or Otherwise Necessary for the Business of the Company	1	2	3	4	5	6	7	8	9	10	11	12		
Mark Liu Chairman				✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
C.C. Wei Vice Chairman				✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Ming-Hsin Kung Director	✓			✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	0
F.C. Tseng Director				✓	✓			✓	✓	✓	✓	✓		✓	✓	✓	✓	0
Sir Peter L. Bonfield Independent Director				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Stan Shih Independent Director				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Kok-Choo Chen Independent Director	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Michael R. Splinter Independent Director				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Moshe N. Gavrieliou Independent Director				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Yancey Hai Independent Director				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1

Note: Directors, during the two years before being elected and during the term of office, meet any of the following situations, please tick the appropriate corresponding boxes:

- Not an employee of the company or any of its affiliates;
- Not a director or supervisor of the company or any of its affiliates;
- 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;
- 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;
- 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;
- 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;
- 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);
- 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;
- 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 NTD500,000";
- Not having a marital relationship, or a relative within the second degree of kinship to any other director of the company;
- Not been a person of any conditions defined in Article 30 of the Company Law; and
- Not a governmental, juridical person or its representative as defined in Article 27 of the Company Law.

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 TSMC's Compensation Committee Charter, the Committee shall consist of no fewer than three independent directors of the Board. The Compensation 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, or executive officer compensation. The Compensation Committee Charter is available on TSMC's corporate website.

Compensation Committee Members' Professional Qualifications and Independence Analysis

According to the relevant requirements set by Taiwan's Securities and Futures Bureau, the professional qualifications and independence status of the Company's Compensation Committee members are listed in the table below.

Name Title	Criteria	Meet the Following Professional Qualification Requirements, Together with at Least Five Years Work Experience			Criteria (Note)										Number of Other Taiwanese Public Companies Concurrently Serving as a Compensation Committee Member
		An Instructor or Higher Position in a Department of Commerce, Law, Finance, Accounting, or Other Academic Department Related to the Business Needs of the Company in a Public or Private Junior College, College or University	A Judge, Public Prosecutor, Attorney, Certified Public Accountant, or Other Professional or Technical Specialists Who Has Passed a National Examination and Been Awarded a Certificate in a Profession Necessary for the Business of the Company	Have Work Experience in the Area of Commerce, Law, Finance, or Accounting, or Otherwise Necessary for the Business of the Company	1	2	3	4	5	6	7	8	9	10	
Michael R. Splinter Independent Director			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Sir Peter L. Bonfield Independent Director			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Stan Shih Independent Director			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Kok-Choo Chen Independent Director	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Moshe N. Gavriolov Independent Director			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Yancey Hai Independent Director			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0

Note: Compensation Committee Members, during the two years before being elected or during the term of office, meet any of the following situations, please tick the appropriate corresponding boxes:

- Not an employee of the company or any of its affiliates;
- Not a director or supervisor of the company or any of its affiliates;
- 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;
- 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;
- 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;
- 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;
- 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);
- 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;
- 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 NTD500,000";
- Not been a person of any conditions defined in Article 30 of the Company Law.

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 36-59 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 2020, the average Board Meeting attendance rate was 97.5% 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 in 2020. The directors' attendance status is as follows.

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Notes
Chairman	Mark Liu	4	0	100%	None
Vice Chairman	C.C. Wei	4	0	100%	None
Director	National Development Fund, Executive Yuan Representative: Ming-Hsin Kung	3	1	75%	Mr. Ming-Hsin Kung was appointed as the representative of National Development Fund on July 24, 2020.
Director	F.C. Tseng	4	0	100%	None
Independent Director	Sir Peter L. Bonfield	4	0	100%	None
Independent Director	Stan Shih	4	0	100%	None
Independent Director	Kok-Choo Chen	4	0	100%	None
Independent Director	Michael R. Splinter	4	0	100%	None
Independent Director	Moshe N. Gavriolov	4	0	100%	None
Independent Director	Yancey Hai	2	0	100%	New office assumed (additionally elected on June 9, 2020)

Annotations:

- (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 2020.
- B. Recusals of Directors due to conflicts of interests in 2020: Directors recused themselves from the discussion and voting of their compensation resolution.
- C. Measures taken to strengthen the functionality of the Board:
- Mr. Yancey Hai was elected as an additional independent director at TSMC's 2020 Annual Shareholders' Meeting. The makeup of Independent Directors on the Board increased from 50% to 60%.
 - 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.
 - 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.
 - TSMC 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.

Audit Committee Meeting Status

Sir Peter L. Bonfield, Chairman of the Audit Committee, convened four regular meetings and one special meeting in 2020. The Committee members and consultant's attendance status is shown in the following table. In addition to these meetings, the Committee members and Financial Expert Consultant participated in 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.

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

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

Board Meeting Dates	Resolution	Resolution of the Audit Committee and the Company's response to the Audit Committee's Opinion
2020 1 st Regular Meeting February 10 & 11	<ul style="list-style-type: none"> approving the 2019 annual financial statements approving of 2019 business report approving of 2019 fourth quarter earnings distribution approving amendments to TSMC's "Procedures for Lending Funds to Other Parties" approving 2019 Statement of Internal Control System 	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.
2020 2 nd Regular Meeting May 11 & 12	<ul style="list-style-type: none"> approving 2020 the first quarter financial statements approving 2020 the first quarter business report approving 2020 the first quarter earnings distribution approving amendments to TSMC's internal control related policies and procedures 	
2020 3 rd Regular Meeting August 10 & 11	<ul style="list-style-type: none"> approving 2020 the second quarter financial statements approving 2020 the second quarter business report approving 2020 the second quarter earnings distribution 	
2020 4 th Regular Meeting November 9 & 10	<ul style="list-style-type: none"> approving 2020 the third quarter financial statements approving 2020 the third quarter business report approving 2020 the third quarter earnings distribution approving Mr. Suner Lin as the new co-signing partner for TSMC starting from 2021 approving the proposed 2021 service fees and out-of-pocket expenses for TSMC's independent auditor 	

(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 2020.
B. There were no recusals of independent directors due to conflicts of interests in 2020.
C. Descriptions of the communications between the independent directors, the internal auditors, and the independent auditors in 2020 (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 2020, 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 2020, 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 Dates	Communications between the Independent Directors and the Internal Auditors	Communications between the Independent Directors and the Independent Auditors
2020 1 st Regular Meeting February 10	<ul style="list-style-type: none"> reviewing report on SOX 404 self-testing results for the year 2019 (Closed Door Session) reviewing the Internal Auditor's report (Closed Door Session) reviewing and approving 2019 Statement of Internal Control System (Closed Door Session) 	<ul style="list-style-type: none"> reviewing any audit problems or difficulties and management's response in connection with 2019 annual financial statements (Closed Door Session) reviewing regulatory developments reviewing external auditor relationship (i.e. qualification, performance and independence)
2020 2 nd Regular Meeting May 11	<ul style="list-style-type: none"> approving the amendments to 2020 internal audit plan (Closed Door Session) reviewing the Internal Auditor's report (Closed Door Session) reviewing and approving amendments to TSMC's internal control related policies and procedures (Closed Door Session) 	<ul style="list-style-type: none"> reviewing any review problems or difficulties and management's response in connection with 2020 first quarter financial statements (Closed Door Session) reviewing regulatory developments reviewing the result of CPA evaluation questionnaire
2020 3 rd Regular Meeting August 10	<ul style="list-style-type: none"> reviewing the Internal Auditor's report (Closed Door Session) 	<ul style="list-style-type: none"> reviewing any review problems or difficulties and management's response in connection with 2020 second quarter financial statements (Closed Door Session) reviewing regulatory developments
2020 4 th Regular Meeting November 9	<ul style="list-style-type: none"> reviewing the Internal Auditor's report (Closed Door Session) reviewing and approving the 2021 internal audit plan (Closed Door Session) 	<ul style="list-style-type: none"> reviewing any review problems or difficulties and management's response in connection with 2020 third quarter financial statements (Closed Door Session) reviewing regulatory developments

Result: all of the above matters were reviewed and/or approved by the Audit Committee whereupon independent directors raised no objection.

Note: Mr. Yancey Hai was elected as TSMC's independent director and became member of the Compensation Committee on June 9, 2020.

Compensation Committee Meeting Status

Mr. Michael R. Splinter, Chairman of the Compensation Committee, convened four regular meetings in 2020. The Committee members' attendance status is as follows:

Title	Name	Attendance in Person	By Proxy	Attendance Rate in Person (%)	Notes
Chair	Michael R. Splinter	4	0	100%	None
Member	Sir Peter L. Bonfield	4	0	100%	None
Member	Stan Shih	4	0	100%	None
Member	Kok-Choo Chen	4	0	100%	None
Member	Moshe N. Gavriolov	4	0	100%	None
Member	Yancey Hai	3	0	100%	New office assumed (Note)

Annotations:
A. In 2020, the Compensation Committee conducted four regular meetings in February 10, May 11, August 10 as well as November 9. The discussion items are as follows:

- Report the 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 the same in annual report
- Corporate officer shareholding guideline
- Compensation structure adjustment proposal of TSMC Taiwan

All of above matters were reviewed and/or approved by the Compensation Committee.
B. There was no recommendation of the Compensation Committee which was not adopted or was modified by the Board of Directors in 2020.
C. There were no written or otherwise recorded resolutions on which a member of the Compensation Committee had a dissenting opinion or qualified opinion.

Note: The Board appointed Mr. Yancey Hai as a member of the Compensation Committee on February 11, 2020.

Board of Directors' Performance Evaluation Implementation Status

Evaluation Cycles	Evaluation Period	Evaluation Scope	Evaluation Method	Evaluation Aspects
The Company conducts the board performance evaluation once a year.	From January 1, 2020 to December 31, 2020	The scope includes the Board of Directors as a whole, the individual directors, and the Audit Committee.	Methods include internal assessment of the Board and self-assessments by each board member.	<p>The Board of Directors are assessed on the following five aspects:</p> <ol style="list-style-type: none"> Involvement in the Company's operation Enhancement of the quality of the board's decision-making Makeup and structure of the board Election of board members and continuing knowledge development Internal controls <p>The individual directors are assessed on the following six aspects:</p> <ol style="list-style-type: none"> Understanding of the Company's goals and mission Awareness of director's duties Involvement in the Company's operations Internal relationship and communication Director's professionalism and continuing knowledge development Internal controls <p>The Audit Committee is assessed on the following five aspects:</p> <ol style="list-style-type: none"> Involvement in the Company's operation Awareness of the audit committee's duties Enhancement of the quality of the audit committee's decision-making Makeup of the audit committee and election of its members Internal controls

The Company completed self-assessments of Board performance in 2020 and reported the results to the Board of Directors at its first quarter meeting in 2021 for review and improvement. The weighted average score for the overall performance of the board of directors is 4.85 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 CSR/ESG programs". The weighted average score for the performance of the individual directors is 4.91 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 2020 Annual Shareholders' Meeting in Hsinchu, Taiwan on June 9, 2020. At the meeting, shareholders present in person or by proxy approved the following resolutions:

(1) The 2019 Business Report and Financial Statements. Consolidated revenue totaled NT\$1,069.99 billion and net income was NT\$345.26 billion, with diluted earnings per share of NT\$13.32;

- (2) The revisions to the Procedures for Lending Funds to Other Parties; and
- (3) Election of one additional Independent Director.

Implementation Status

All the resolutions of the Shareholders' Meeting have been fully implemented in accordance with the resolutions. Mr. Yancey Hai was elected as the Independent Director. His tenure is from June 9, 2020 to June 4, 2021.

3.3.2 Major Resolutions of Board Meetings

During 2020 and as of the date of this Annual Report, major resolutions approved at Board meetings are summarized below:

- (1) Board Meeting of February 10 & 11, 2020:
 - approving 2019 business report and financial statements;
 - approving the distribution of a NT\$2.5 per share cash dividend for the fourth quarter of 2019, and set June 24, 2020 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
 - approving distribution of employees' cash bonus and profit sharing bonus for 2019;
 - approving capital appropriations of approximately US\$6,742.1 million for purposes including: 1. Fab construction, and installation of fab facility systems; 2. Installation and upgrade of advanced technology capacity; 3. Installation of specialty technology capacity; 4. Installation of advanced packaging capacity; 5. Second quarter 2020 R&D capital investments and sustaining capital expenditures;
 - approving the issuance of no more than NT\$60 billion (approximately US\$2.01 billion) unsecured corporate bonds in Taiwan to finance TSMC's capacity expansion and/or pollution prevention related expenditures; and
 - convening the 2020 Annual Shareholders' Meeting, at which shareholders held an election for one additional independent director.
- (2) Regular Board Meeting of May 11 & 12, 2020:
 - approving change of location for TSMC's 2020 Annual Shareholders' Meeting in response to COVID-19 pandemic;
 - approving the distribution of a NT\$2.5 per share cash dividend for the first quarter of 2020, and set September 23, 2020 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
 - approving capital appropriations of approximately US\$5,704.0 million for purposes including: 1. Fab construction, and installation of fab facility systems; 2. Installation and upgrade of advanced technology capacity;

- 3. Installation of specialty technology capacity; 4. Third quarter 2020 R&D capital investments and sustaining capital expenditures;
- approving capital appropriation of approximately US\$64.75 million for capitalized leased assets in the second half of 2020;
- approving the issuance of no more than NT\$60 billion (approximately US\$2.03 billion) unsecured corporate bonds in Taiwan to finance TSMC's capacity expansion and/or pollution prevention related expenditures; and
- approving the promotion of Dr. Cliff Hou as Senior Vice President.
- (3) Regular Board Meeting of August 10 & 11, 2020:
 - approving the distribution of a NT\$2.5 per share cash dividend for the second quarter of 2020, and set December 23, 2020 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
 - approving capital appropriations of approximately US\$5,271.6 million for purposes including: 1. Installation and expansion of advanced technology capacity; 2. Installation of specialty technology capacity; 3. Installation of advanced packaging capacity; 4. Fab construction, installation of fab facility systems, and capitalized leased assets; 5. Fourth quarter 2020 R&D capital investments and sustaining capital expenditures;
 - approving the issuance of US dollar-denominated unsecured corporate bonds for an amount not to exceed US\$1 billion, and approved 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\$3 billion, to finance TSMC's capacity expansion; and
 - approving the promotion of Dr. Kevin Zhang as Senior Vice President.
- (4) Regular Board Meeting of November 9 & 10, 2020:
 - approving the distribution of a NT\$2.5 per share cash dividend for the third quarter of 2020, and set March 23, 2021 as the record date for common stock shareholders entitled to participate in this cash dividend distribution;
 - approving capital appropriations of approximately US\$15.1 billion for purposes including: 1. Installation and expansion of advanced technology capacity; 2. Installation and upgrading of advanced packaging capacity; 4. Fab construction, installation of fab facility systems, and capitalized leased assets; 5. First quarter 2021 R&D capital investments and sustaining capital expenditures;
 - approving capital appropriation of approximately US\$124.7 million to build up a Zero Waste Manufacturing Center at the Central Taiwan Science Park;

- approving an investment to establish a wholly-owned subsidiary in Arizona, United States of America, with a paid-in capital of US\$3.5 billion; and
- approving the promotions of Dr. C.S. Yoo and Dr. Jun He as Vice Presidents.
- (5) Regular 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 set 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.

3.3.3 Major Issues of Record or Written Statements Made by Any Director Dissenting to Important Resolutions Passed by the Board of Directors during 2020 and as of the Date of this Annual Report: None.

3.4 Taiwan Corporate Governance Implementation as Required by the 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 Company established a diversification policy for the composition of its Board of Directors and has it been implemented accordingly?	V		(1) TSMC established "Guidelines for Nomination of Directors", which describes the procedures and criteria for the nomination, qualification and evaluation of candidates for Directors. The members of TSMC Board of Directors are nominated via a rigorous selection process. It not only considers diverse backgrounds, professional competence and experience, but also attaches great importance to his/her personal reputation on ethics and leadership. Presently, the Company's Board of Directors consists of ten members who possess world-class managerial and/or professional experiences. We rely on each directors' knowledge, personal insight and business judgment. 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. Our Board has six independent directors who constitute 60% of the Board.	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 to the Board of Directors.	
(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 2020. 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 2020 and reported the results to the Board of Directors at its first quarter meeting in 2021 for review and improvement. The weighted average score for the overall performance of the board of directors is 4.85 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 CSR/ESG programs". The weighted average score for the performance of the individual directors is 4.91 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 59 of this Annual Report.	

(Continued)

Assessment Item	Implementation Status			Non-implementation and Its Reason(s)
	Yes	No	Explanation	
4. Does the Company appoint competent and appropriate corporate governance personnel and corporate governance officer to be in charge of corporate governance affairs (including but not limited to furnishing information required for business execution by directors, assisting directors' compliance of law, handling matters related to board meetings and shareholders' meetings according to law, and recording minutes of board meetings and shareholders' meetings)?	V		The Board of Directors appointed the Vice President of Legal and General Counsel of TSMC as the Corporate Governance Officer. TSMC's Corporate & Compliance Legal Division, which directly reports to the General Counsel, is in charge of assisting in related affairs, including handling of matters relating to Board, Audit 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
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. Corporate Social Responsibility" on page 124-145 of this Annual Report and "Materiality Analysis and Stakeholder Communication" of TSMC's CSR 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 "5.5 Human Capital" on page 92-97 of this Annual Report. (2) For investor relations, supplier relations and rights of stakeholders, please refer to "7. Corporate Social Responsibility" on page 124-145 of this Annual Report. (3) For Directors' training records, please refer to "Continuing Education/Training of Directors in 2020" on page 50 of this Annual Report. (4) For Risk Management Policies and Risk Evaluation, please refer to "6.3 Risk Management" on page 111-123 of this Annual Report. (5) For Customer Relations Policies, please refer to "5.4 Customer Trust" on page 90-92 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 2020 is as follows: (1) Performance evaluation of the Board of Directors: TSMC has conducted Board performance evaluations on an annual basis since 2020. (2) CSR Report: TSMC's CSR Report has been reported to the Board of Directors in increasing regularity from once a year, to once every six months.	

Continuing Education/Training of Directors in 2020

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)	06/25	College of Engineering, University of California, Berkeley	Virtual Berkeley Engineering Summer Dean’s Society Event: Rising to the Challenge: Berkeley Engineers Respond to COVID-19 (Video Conference)	1 hour
	08/26	Taiwan Semiconductor Industry Association (TSIA)	2020 World Semiconductor Council (WSC)	2 hours
	09/23	SEMI Taiwan	SEMICON Taiwan 2020 – Master Forum Speech: The Future of IC Innovation	4 hours
	12/15	Hsinchu Science Park Bureau (HSPB)	Embracing Legacy to Create a Better Future – 40 th Hsinchu Science Park 40 th Anniversary International Forums Speech: Welcoming the Hsinchu Science Park’s next 40 years of success	3 hours
	12/21	Executive Yuan	11 th National Science and Technology Conference: Creating the Future	3 hours
F.C. Tseng	03/18	Taiwan Corporate Governance Association	Corporate Sustainability Management	1.5 hours
	07/30	Securities and Futures Institute	The Global Macroeconomic Impacts of COVID-19	3 hours
	09/29	Taiwan Corporate Governance Association	Recent Directors and Officers Liability Insurance Updates and Case Study	1.5 hours
	09/29	Taiwan Corporate Governance Association	The Battle of Corporate Control and Case Study	1.5 hours
Sir Peter L. Bonfield	09/22	NASDAQ	Virtual Seminar – NASDAQ ESG Summit – Policies	3 hours
Stan Shih	03/18	Taiwan Corporate Governance Association	Corporate Sustainability Management	1.5 hours
	05/06	Taiwan Corporate Governance Association	Hostile Merge and Corporate Governance	1.5 hours
	06/23	Taiwan Insurance Institute	Analyze the Principle of Equal Treatment	1 hour
	08/05	Taiwan Corporate Governance Association	New Order of U.S. – The Impact and Countermeasures of Investments in U.S. and Export Control Regulations	1.5 hours
	11/03	Taiwan Corporate Governance Association	Corporate Sustainability Management and the Development Trend of ESG	1.5 hours
	11/21	Taiwan Academy of Banking and Finance (TABF)	The General Guidance of Anticorruption and Whistleblower Protection	1 hour
Michael R. Splinter	12/22	Taiwan Corporate Governance Association	The Influence of IFRS17 on Insurance Industry Management Strategy	3 hours
	04/02	National Association of Corporate Directors (NACD)	Directorship Essential	4 hours
Yancey Hai	04/07~05/15	National Association of Corporate Directors (NACD)	Cyber Security Risk Oversight Program	30 hours
	04/29	Taiwan Corporate Governance Association	Corporate Strategy Development Direction	3 hours
Yancey Hai	07/29	Taiwan Corporate Governance Association	The Opportunity and Challenge of Mobile 5G – Starting from Telecommunication	3 hours

Note: Selected speeches on corporate governance and related topics.

Continuing Education Training of Corporate Governance Officer in 2020

Name	Date	Host by	Training/Speech Title	Duration
Vice President and General Counsel/ Corporate Governance Officer Sylvia Fang	02/14	Deloitte Touche Tohmatsu Limited Center for Law, Technology and Ethics, College National Taiwan University of Law Department of Intellectual Property and Technology Transfer, Academia Sinica Institute for Information Industry Technology Transfer and Law Center, Industrial Technology Research Institute Chinese National Federation of Industries	2020 Legal Tech and Innovation Services Forum	7 hours
	10/20	Lee and Li, Attorneys-at-Law	Discussion on Commercial Case Adjudication Act and Countermeasures (Hsinchu Session)	3 hours
	11/27	Taiwan Trade Secret Protection Association	2020 Cross-Strait Trade Secret Protection Virtual Symposium	8 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, waste 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.

Major Ethics Code Obligations

- Do not advance personal interests at the expense of or in conflict with the Company;
- Refrain from corruption, bribery, unfair competition, fraud, extortion, collusion, 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 promotes 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 Ethical Culture: Our ethics program is implemented in four ways by all of TSMC’s employees, officers and Board members. First, TSMC’s management sets the “tone from the top” by acting in accordance with the Ethics Code so that they may 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 departments and subsidiaries of TSMC are required to conduct Control Self-Assessment (CSA) tests annually to review employees’ awareness of 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, and emails. 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 2020, there were about 50,482 attendances that completed ethics-related training courses at TSMC and its subsidiaries. TSMC not only provides annual online courses on professional ethics and requires colleagues to complete the training.

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 electronics 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 to prevent any unethical conduct and detect any sign of Ethics Code violations. In 2020, we held both a sustainable supply chain experience exchange and our annual Responsible Supply Chain Forum to share/exchange practical experiences on topics such as the Ethics Code, labor rights, environmental protection, and occupational safety. In total, 518 attendees from 337 suppliers participated 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

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. First of all, our Audit Committee approved and we have 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 maintains additional internal reporting channels for our employees. To foster an open culture of ethics compliance, we encourage our employees and the third parties we do business with to report any suspected noncompliance with law or relevant TSMC policy.

TSMC treats any complaint and the investigation thereof in a confidential and sensitive manner, and strictly prohibits any form of retaliation against any individual who in good faith reports or helps with the investigation of any complaint.

Due to the open reporting channels, TSMC receives reports on various issues from employees and external parties such as our customers and suppliers from time to time. Below is a summary of the Number of Reported Incidents.

Year	FY2016	FY2017	FY2018	FY2019	FY2020
Total reported cases	116	113	150	205	246 (Note 1)
Ethics-related cases	16	20	14	26	22
Cases investigated and verified as ethics violations	2	4	1	2	6 (Note 2)
Sexual Harassment Investigation Committees Formed	5	7	3	4	4
Cases investigated and verified as violations	5	3	3	4	2 (Note 3)

Note 1: Among them, 155 cases were related to employee relations, 69 cases were categorized as others (e.g. asking personal questions or private matters), and 22 cases were related to ethics.
 Note 2: One incident involved an employee who committed multiple serious violations of the Ethics Code by borrowing money from vendors and defrauding peers in the name of purchasing discounted vouchers. The employee was dismissed. One incident involved an employee who grossly violated Company regulations by over-claiming a large amount of materials for unnecessary replacement in order to obtain. The employee was dismissed. For each the remaining four incidents, the Company took progressive disciplinary actions, taking into account the nature and severity of the misconduct: one incident involved an employee who violated Company policy by improperly leaking a project's base price to a certain vendor. Although the act did not bring harm to the company, impartiality and professionalism were compromised as a result; one incident involved an employee who failed to disclose a situation in which he/she had interest that conflicts with the company, in violation of the Ethics Code; one incident involved an employee who violated the Ethics Code by mismanaging vendor/supplier relationships; one incident involved an employee who violated Company procurement process by making a payment request with mismatched justification.
 Note 3: These two employees who violated Company sexual prevention policy were disciplined by the company, and one was dismissed. Meanwhile, Company leveraged the two violations to strengthen the promotion of how to use social media properly in 2020 TSMC annual sexual harassment prevention so as to raise employees' awareness since these two incidents were involved in misuse of social media.

Ethics Code Violation Disciplinary Action

We do not tolerate any violation of the Ethics Code and treat every possible violation incident seriously. Any 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 (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? (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? (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		(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 Corporate Social Responsibility Report. (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, 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. Any violator of the Ethics Code (or relevant regulations) will be severely punished to the full extent of our policies and the law, including immediate dismissal in accordance with TSMC Employee Recognition, Disciplinary and Ombudsman Procedure, termination of business relationship, and judicial prosecution as appropriate. (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: Anti-corruption, Anti-harassment, Anti-discrimination, Anti-trust (unfair competition), Environment, 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, 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.	None

(Continued)

Assessment Item	Implementation Status			Causes for the Difference
	Yes	No	Summary	
<p>2. Ethic Management Practice</p> <p>(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?</p>	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, as for our suppliers, we require all of them to declare in writing that they will not engage in any fraud or any unethical conduct when dealing with us or our officers and employees. In addition to periodic audit, we provide training and communicate our ethical culture to our suppliers through live seminars 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
<p>(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?</p>	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, with other divisions, 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.	
<p>(3) Whether the company has established policies to prevent conflict of interests, provide appropriate communication and complaint channels and implement such policies properly?</p>	V		(3) TSMC requires newly hired employees to declare any conflict of interest situation as appropriate. In addition, all employees must disclose any matters that have, or may have, the appearance of undermining the Ethics Code (such as any actual or potential conflict of interest). Furthermore, key employees and senior officers must periodically declare their compliance status with the Ethics Code according to relevant procedures.	
<p>(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?</p>	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.	
<p>(5) Does the company provide internal and external ethical conduct training programs on a regular basis?</p>	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. As for our suppliers, we communicate our ethical culture to our business partners through live seminars to ensure their fully understanding of our commit to ethical conduct.	
<p>3. Implementation of Complaint Procedures</p> <p>(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?</p>	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 Vice President that oversees the Ombudsmen system, or to the Chairman of the Company's Audit Committee directly.	None
<p>(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?</p>	V		(2) TSMC treats any complaint and the investigation thereof in a confidential and sensitive manner, as is clearly stated in our bylaws.	
<p>(3) Does the company adopt proper measures to prevent a complainant from retaliation for his/her filing a complaint?</p>	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.	
<p>4. Information Disclosure</p> <p>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)?</p>	V		Our internal website provides guidelines and informative articles on ethics and honorable business conduct (in both Chinese and English) for employees' easy access. In addition, TSMC discloses relevant policies and information in its Annual Report (which is also available at the MOPS), CSR/ESG Report and includes TSMC Ethics and Business Conduct Policy on its external website (available at: http://www.tsmc.com).	None
<p>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.</p> <p>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 51-54 of this Annual Report.</p>				
<p>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).</p> <p>For details on the implementation of TSMC's corporate conduct and ethics, please refer to "3.5 Code of Ethics and Business Conduct" on page 51-54 of this Annual Report.</p>				

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: Anti-corruption, Anti-harassment, Anti-discrimination, Employment Regulations, Antitrust (unfair competition), Environment, 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 relevant policies, guidelines and procedures, and make ethical decisions in every circumstance.

Compliance Awareness Training

Training is one of the major component 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 news articles, compliance guidelines, tips and FAQs which our employees can access through our intranet;
- Focused 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 Antitrust. 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 online 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 Anti-Corruption, Antitrust, Anti-harassment, Insider Trading, Export Control Management, PIP, and Personal Data Protection among others;
- 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 51-54 of this Annual Report.

Major Accomplishments

In 2020, 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 advised government agencies on recent revisions to corporate governance, trade secrets and environmental protection regulations.

Internally, TSMC provides multiple courses about legal and regulatory compliance, including anti-corruption, anti-trust, anti-harassment, insider trading, export control, and protection of confidential and personal information. These courses are taught by both internal and external experts and law professionals. The important achievements are as follows:

- Ethics and Compliance: providing an "Annual Ethics and Compliance Training Course" (mandatory 0.5 hour online course) covering various important regulatory compliance topics – a total of about 50,482 employees completed this training course – 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 are in compliance 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 2018, TSMC successfully extended the validity period of its ICP certificate to October 2021. 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 2020 TSMC altogether provided more than 20 face-to-face communication sessions and on-line learning program to employees in relevant functions - a total of 1,272 employees completed these sessions or the programs as requested.
- Supplier Management: TSMC shares and exchanges practical experiences with suppliers with sales offices in Taiwan by holding both a sustainable supply chain experience exchange and annual Responsible Supply Chain Forums on topics such as Ethics Code, labor rights, environmental protection and occupational safety. In total, 518 attendees from 347 suppliers were participated in these activities.
- Conflict-Free Supply Chain: As a recognized global leader in the hi-tech supply chain, we acknowledge our corporate social responsibility to strive to procure conflict-free minerals in an effort to recognize humanitarian and ethical social principles that protect the dignity of all persons. Meanwhile, we have implemented a series of compliance safeguards in accordance with industry leading practices, requesting suppliers to fill in the "Conflict Minerals Reporting Template" and sign the "TSMC Conflict-Free Minerals Declaration" every year. TSMC will continuously make progress to ensure a conflict-free supply chain.
- Personal Data Protection: Because of the importance of personal data protection, TSMC periodically reviews the Rules of Privacy and Personal Data Protection and external and internal privacy policies to identify the needs to update such documents. Based on current personal data protection laws and risks, TSMC conducts an annual training on privacy and personal data protection to enhance employees' awareness and compliance. In addition, a 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 841 employees completed the on-line program as requested.

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 09, 2021

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 2020:

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, 2020, 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 09, 2021, 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 during 2020 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)	2	11
The Chartered Institute of Management Accountants (CIMA)	-	1
Certified Internal Auditor (CIA)	12	5
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)	3	-
Certification in Risk Management Assurance (CRMA)	3	-
Certified Information Systems Auditor (CISA)	5	-
Certified Fraud Examiner (CFE)	1	-
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	Audit Fee	Non-audit Fee					CPA's Audit Period	Remark
			System Design	Company Registration	Human Resource	Others (Note)	Subtotal		
Deloitte & Touche	Mei-Yen Chiang, Yu-Feng Huang, and others	60,253	-	-	-	10,063	10,063	01/01/2020 - 12/31/2020	-

Note: The fees were mainly related to the bond offering that was borne by the underwriter.

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	CPA	Consignor
	Status	Appointment terminated automatically	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		∇
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 and live seminars are conducted periodically. In addition, employees can familiarize themselves with relevant internal policies and training articles by easily accessing TSMC's Legal Organization intranet website.

4. Capital and Shares



> LED lights of a stock exchange ticker board (Left)

> Illumination from rapid thermal process (Right)

4.1 Capital and Shares

4.1.1 Capitalization

Unit: Share/NT\$

As of 02/28/2021

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 during 2020 and as of 02/28/2021

4.1.2 Capital and Shares

Unit: Share

As of 02/28/2021

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: None.

4.1.3 Composition of Shareholders

Common Share

As of 12/23/2020 (Note)

Type of Shareholders	Government Agencies	Financial Institutions	Other Juridical Persons	Foreign Institutions and Natural Persons	Domestic Natural Persons	Total
Number of Shareholders	5	170	2,217	5,455	601,562	609,409
Shareholding	1,654,461,110	809,081,441	1,257,529,349	19,795,784,323	2,413,524,235	25,930,380,458
Shareholding Percentage	6.38%	3.12%	4.85%	76.34%	9.31%	100.00%

Note: Record date for the second quarter 2020 cash dividend distribution.

Distribution of Shareholding

Common Share

As of 12/23/2020 (Note)

Shareholding Range	Number of Shareholders	Shareholding	Shareholding Percentage
1-999	287,233	44,716,170	0.17%
1,000-5,000	254,248	480,113,158	1.85%
5,001-10,000	32,167	235,488,920	0.91%
10,001-15,000	11,344	139,824,302	0.54%
15,001-20,000	5,559	98,468,155	0.38%
20,001-30,000	5,597	137,709,204	0.53%
30,001-40,000	2,708	94,147,114	0.36%
40,001-50,000	1,697	76,648,811	0.30%
50,001-100,000	3,306	230,904,152	0.89%
100,001-200,000	1,808	251,198,641	0.97%
200,001-400,000	1,200	335,329,150	1.29%
400,001-600,000	506	246,212,952	0.95%
600,001-800,000	309	213,011,618	0.82%
800,001-1,000,000	199	177,845,047	0.69%
Over 1,000,001	1,528	23,168,763,064	89.35%
Total	609,409	25,930,380,458	100.00%

Note: Record date for the second quarter 2020 cash dividend distribution.

Preferred Share: None.

4.1.4 Major Shareholders

Common Share

As of 12/23/2020 (Note)

Shareholders	Shareholding	Shareholding Percentage
ADR-Taiwan Semiconductor Manufacturing Company, Ltd.	5,321,819,398	20.52%
National Development Fund, Executive Yuan	1,653,709,980	6.38%
Citibank (Taiwan) Ltd. in custody for Government of Singapore	664,026,441	2.56%
Citibank (Taiwan) Ltd. in custody for Norges Bank	400,245,488	1.54%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	345,882,748	1.33%
New Labor Pension Fund	279,045,255	1.08%
Fubon Life Insurance Co., Ltd	246,007,308	0.95%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds	214,909,785	0.83%
JPMorgan Chase Bank N.A., Taipei Branch in custody for Invesco Oppenheimer Developing Markets Fund	210,336,429	0.81%
JPMorgan Chase Bank N.A., Taipei Branch in custody for New Perspective Fund	207,355,941	0.80%

Note: Record date for the second quarter 2020 cash dividend distribution.

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

Unit: Share

Title Name	2020		01/01/2021 - 02/28/2021	
	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	-	-	-	-
Director F.C. Tseng	-	-	-	-
Director National Development Fund, Executive Yuan Representative: Ming-Hsin Kung	-	-	-	-
Independent Director Sir Peter L. Bonfield	-	-	-	-
Independent Director Stan Shih	-	-	-	-
Independent Director Kok-Choo Chen	-	-	-	-
Independent Director Michael R. Splinter	-	-	-	-
Independent Director Moshe N. Gavriolov	-	-	-	-
Independent Director Yancey Hai (Note 1)	-	-	-	-
Senior Vice President Lora Ho	59,000	(1,300,000)	-	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 (Note 5)	-
Senior Vice President J.K. Wang	30,000	-	-	-
Senior Vice President Cliff Hou	10,648	-	930	-
Senior Vice President Kevin Zhang	43,000	-	25,000	-
Vice President and General Counsel/Corporate Governance Officer Sylvia Fang	-	(100,000)	-	-
Vice President Connie Ma	41,000	-	-	-
Vice President Y.L. Wang	-	-	-	-

(Continued)

Title Name	2020		01/01/2021 - 02/28/2021	
	Net Change in Shareholding	Net Change in Shares Pledged	Net Change in Shareholding	Net Change in Shares Pledged
Vice President and TSMC Distinguished Fellow Doug Yu	-	-	10,000	-
Vice President and TSMC Fellow Alexander Kalnitsky (Note 2)	-	-	-	-
Vice President and TSMC Fellow T.S. Chang	(27,000)	-	-	-
Vice President Michael Wu	5,000	-	-	-
Vice President Min Cao	-	-	-	-
Vice President H.-S. Philip Wong (Note 2)	-	-	-	-
Vice President Marvin Liao	10,000	-	5,000	-
Vice President Y.H. Liaw	-	-	-	-
Vice President Simon Jang	-	-	-	-
Vice President, Chief Financial Officer/Spokesperson Wendell Huang	214	-	20	-
Vice President C.S. Yoo (Note 3)	-	-	-	-
Vice President Jun He (Note 3)	1,000	-	4,000	-
Vice President Geoffrey Yeap (Note 4)	-	-	-	-
Vice President and Chief Information Officer Chris Horng-Dar Lin (Note 4)	-	-	-	-

Note 1: Mr. Yancey Hai was elected as TSMC's independent director at TSMC's Annual Shareholders' Meeting on June 9, 2020. His shareholding was disclosed starting from that date.

Note 2: Vice President Alexander Kalnitsky retired, effective December 29, 2020. Vice President Dr. Philip Wong resigned and became a special consultant to TSMC, effective April 1, 2020. Their shareholdings will not be disclosed after that date.

Note 3: Dr. C.S. Yoo and Dr. Jun He were promoted to Vice President, effective November 10, 2020. Their shareholdings were disclosed starting from that date.

Note 4: Dr. Geoffrey Yeap and Dr. Chris Horng-Dar Lin were promoted to Vice President, effective February 9, 2021. Their shareholdings were disclosed starting from that date.

Note 5: The increased shareholding was acquired from a relative rather than a purchase from market.

4.1.6 Stock Trade with Related Party

Name	Reason of the Transfer	Transfer Date	Transferee	Relation with the Transferee	Shares	Transfer Price
Kok-Choo Chen	Inheritance	11/13/2020	Heungtat Ng	Spouse	5,120	-

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 12/23/2020 (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.	5,321,819,398	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	664,026,441	2.56%	N/A	N/A	N/A	N/A	None	None
Citibank (Taiwan) Ltd. in custody for Norges Bank	400,245,488	1.54%	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	345,882,748	1.33%	N/A	N/A	N/A	N/A	None	None
New Labor Pension Fund	279,045,255	1.08%	N/A	N/A	N/A	N/A	None	None
Fubon Life Insurance Co., Ltd	246,007,308	0.95%	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 Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds	214,909,785	0.83%	N/A	N/A	N/A	N/A	None	None
JPMorgan Chase Bank N.A., Taipei Branch in custody for Invesco Oppenheimer Developing Markets Fund	210,336,429	0.81%	N/A	N/A	N/A	N/A	None	None
JPMorgan Chase Bank N.A., Taipei Branch in custody for New Perspective Fund	207,355,941	0.80%	N/A	N/A	N/A	N/A	None	None

Note: Record date for the second quarter 2020 cash dividend distribution.

4.1.9 Long-term Investment Ownership

As of 12/31/2020 (Note 5)

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.	11,284	100%	-	-	11,284	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 Design Technology Japan, Inc.	11,000 (Note 1)	100%	-	-	11,000 (Note 1)	100%
TSMC Korea Limited	80,000	100%	-	-	80,000	100%
TSMC China Company Limited	Not Applicable (Note 2)	100%	Not Applicable (Note 2)	-	Not Applicable (Note 2)	100%
TSMC Nanjing Company Limited	Not Applicable (Note 2)	100%	Not Applicable (Note 2)	-	Not Applicable (Note 2)	100%
TSMC Arizona Corporation	30,001	100%	-	-	30,001	100%
VisEra Technologies Company Ltd.	253,120,000 (Note 3)	86.94% (Note 3)	-	-	253,120,000 (Note 3)	86.94% (Note 3)
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 4)	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 2)	98.00%	Not Applicable (Note 2)	-	Not Applicable (Note 2)	98.00%
VentureTech Alliance Fund III, L.P.	Not Applicable (Note 2)	98.00%	Not Applicable (Note 2)	-	Not Applicable (Note 2)	98.00%

Note 1: In February 2021, TSMC had a capital injection in TSMC Design Technology Japan, Inc. Total shares held by TSMC increased to 15,000 shares accordingly.

Note 2: Not applicable. These firms do not issue shares. TSMC's investments are measured as a percentage of ownership.

Note 3: On February 9, 2021, TSMC's Board of Directors approved the sale of up to 39,501,000 common shares of VisEra Technologies Company Ltd. After such share disposal, shares owned by TSMC will decrease to 213,619,000 shares and TSMC's ownership in VisEra will be reduced to 73.37%.

Note 4: TSMC's Director, National Development Fund of Executive Yuan, held 16.72% while other Directors and Management held 0.10%.

Note 5: On November 10, 2020, TSMC's Board of Directors approved the investment in a new venture capital fund, Emerging Fund L.P. The fund was established in January 2021. On February 9, 2021, TSMC's Board of Directors approved to establish a wholly-owned subsidiary in Japan to expand the Company's 3DIC material research.

4.1.10 Share Information

TSMC's earnings per share in 2020 increased 50.0% from 2019 to NT\$19.97 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	2019	2020	01/01/2021 - 02/28/2021
Market Price Per Share (Note 1)			
Highest Market Price	345.00	530.00	673.00
Lowest Market Price	208.00	248.00	536.00
Average Market Price	261.73	378.65	614.21
Net Worth Per Share			
Before Distribution	62.53	71.33	-
After Distribution	60.03	68.83 (Note 5)	-
Earnings Per Share			
Weighted Average Shares (thousand shares)	25,930,380	25,930,380	-
Diluted Earnings Per Share	13.32	19.97	-
Dividends Per Share			
Cash Dividends	9.50	10.00 (Note 5)	-
Accumulated Undistributed Dividend	-	-	-
Return on Investment			
Price/Earnings Ratio (Note 2)	19.65	18.96	-
Price/Dividend Ratio (Note 3)	27.55	37.86 (Note 5)	-
Cash Dividend Yield (Note 4)	3.6%	2.6% (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 2020, which were approved by Board of Directors on February 9, 2021.

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.

In the Annual Shareholders' Meeting on June 5, 2019, the Company's shareholders approved the amendments to TSMC's Articles of Incorporation to authorize the Company's Board of Directors 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 2020 quarterly cash dividends are demonstrated in the table below. TSMC intends to maintain a sustainable cash dividend on both an annual and quarterly basis.

2020 Quarterly Earnings Distribution

Unit: NT\$

Period	Approved Date	Payment Date	Cash Dividends Per Share	Total Earnings Distribution Amount
First quarter of 2020	05/12/2020	10/15/2020	NT\$2.5	64,825,951,145
Second quarter of 2020	08/11/2020	01/14/2021	NT\$2.5	64,825,951,145
Third quarter of 2020	11/10/2020	04/15/2021	NT\$2.5	64,825,951,145
Fourth quarter of 2020	02/09/2021	07/15/2021	NT\$2.5	64,825,951,145

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 9, 2021, a profit sharing to employees was expensed based on a certain percentage of 2020 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.

2020 Directors' Compensation and Employees' Profit Sharing

	Board Resolution (02/09/2021)
	Amount (NT\$ thousands)
Directors' Compensation (Cash)	509,753
Employee's Profit Sharing (Cash)	34,753,184

Note: NT\$34,753,184 thousand business performance bonus was already distributed following each quarter of 2020. The above employees' profit sharing will be distributed in July, 2021.

2019 Directors' Compensation and Employees' Profit Sharing

	Board Resolution (02/11/2020)	Actual Result (Note)
	Amount (NT\$ thousands)	Amount (NT\$ thousands)
Directors' Compensation (Cash)	360,404	360,404
Employees' Profit Sharing (Cash)	23,165,745	23,034,200

Note: The above directors' compensation and employees' profit sharing were expensed under the Company's 2019 statement of comprehensive income and were approved by the Board of Directors at its meeting on February 11, 2020. However, due to employee turnover, the employees' profit sharing in the amount of NT\$131,545 thousand was undistributed, and related expense was reversed in 2020.

4.1.13 Impact to 2021 Business Performance and EPS Resulting from Stock Dividend Distribution: Not applicable.

4.1.14 Buyback of Common Stock: None.

4.2 Issuance of Corporate Bonds

4.2.1 Corporate Bonds

NTD Corporate Bonds

As of 02/28/2021

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)	Domestic Unsecured Bond (109-6, Green Bond)	Domestic Unsecured Bond (109-7)	
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	12/02/2020	12/29/2020	
Denomination	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	NT\$10,000,000	
Offering Price	Par	Par	Par	Par	Par	Par	Par	Par	Par	Par	Par	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	NT\$12,000,000,000	NT\$18,500,000,000	
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%	Tranche A: 0.40% Tranche B: 0.44% Tranche C: 0.48%	Tranche A: 0.36% Tranche B: 0.41% Tranche C: 0.45%	
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	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	
Repayment	Bullet	Bullet	Bullet	Bullet	Bullet	Bullet	Bullet	Bullet	Two equal installments in last two years	Two equal installments in last two years	Two equal installments in last two years	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\$10,600,000,000	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	NT\$12,000,000,000	NT\$18,500,000,000	
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	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	
Underwriter	Not Applicable					Yuanta Securities Co., Ltd	MasterLink Securities Co., Ltd	Hua Nan Securities Co., Ltd	Capital Securities Co., Ltd	KGI Securities Co., Ltd	Capital Securities Co., Ltd	KGI Securities Co., Ltd	
Trustee	Taipei Fubon Commercial Bank Co., Ltd					Taipei Fubon Commercial Bank Co., Ltd.							
Guarantor	None					None							
Legal Counsel	Modern Law Office					True Honesty International Law Offices							
Auditor	Deloitte & Touche					Deloitte & Touche							
Redemption or Early Repayment Clause	None					None							
Covenants	None					None							
Other Rights of Bondholders	Conversion Right	None					None						
	Amount of Converted or Exchanged Common Shares, ADRs or Other Securities	Not Applicable					Not Applicable						
Dilution Effect and Other Adverse Effects on Existing Shareholders	None					None							
Custodian	None					None							

USD Corporate Bonds

As of 02/28/2021

Issuance	US-dollar Domestic Unsecured Bond (109-1)	Senior Unsecured Notes (Note)
Issue Date	09/22/2020	09/28/2020
Denomination	US\$1,000,000	US\$200,000 and integral multiples of US\$1,000 in excess thereof
Listing	Taipei Exchange	Singapore Exchange
Offering Price	Par	2025 Notes: 99.907% 2027 Notes: 99.603% 2030 Notes: 99.083%
Total Amount	US\$1,000,000,000	US\$3,000,000,000
Coupon (Per Annum)	2.70%	2025 Notes: 0.75% 2027 Notes: 1.00% 2030 Notes: 1.375%
Tenure and Maturity Date	40 years Maturity: 09/22/2060	2025 Notes: 5 years Maturity: 09/28/2025 2027 Notes: 7 years Maturity: 09/28/2027 2030 Notes: 10 years Maturity: 09/28/2030
Repayment	Bullet	Bullet
Outstanding	US\$1,000,000,000	US\$3,000,000,000
Credit Rating	Not Applicable	Aa3 (Moody's Investors Service, 09/21/2020) AA- (Standard & Poor's Rating Services, 09/21/2020)
Underwriter	Goldman Sachs (Asia) L.L.C., Taipei Branch KGI Securities Co. Ltd. (lead underwriter)	Goldman Sachs International as lead underwriter
Trustee	Mega International Commercial Bank Co., Ltd.	Citicorp International Limited
Guarantor	None	TSMC
Legal Counsel	True Honesty International Law Offices	Sullivan & Cromwell (Hong Kong) LLP Harney Westwood & Riegels Lee and Li, Attorneys-at-Law
Auditor	Deloitte & Touche	Deloitte & Touche
Redemption or Early Repayment Clause	Callable on the 5th anniversary of the issue date and every anniversary thereafter	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	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	None
Custodian	None	None

Note: Issued by TSMC Global Ltd., 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: 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								
Apportionment of Expenses for Issuance and Maintenance	(Note 3)							(Note 4)								
Issuance and Listing	NYSE															
Rights and Obligations of ADS Holders	Same as those of Common Share Holders															
Trustee	Not Applicable															
Depository Bank	Citibank, N.A. – New York															
Custodian Bank (Note 1)	Citibank, N.A. – Taipei Branch															
ADSs Outstanding (Note 2)	As of February 28, 2021, total number of outstanding ADSs was 1,064,315,074.															
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)	01/01/2020 - 12/31/2020	High	109.04													
		Low	43.89													
		Average	69.74													
	01/01/2021 - 02/28/2021	High	140.05													
		Low	111.70													
		Average	127.83													

Note 1: Citibank, N.A., Taipei Branch changed its name to "Citibank Taiwan Limited" in 2009.

Note 2: TSMC has in aggregate issued 813,544,500 ADSs since 1997, which, if taking into consideration stock dividends distributed over the period, would amount to 1,147,835,205 ADSs. Stock dividends distributed in 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008 and 2009 were 45%, 23%, 28%, 40%, 10%, 8%, 14.08668%, 4.99971%, 2.99903%, 0.49991%, 0.50417% and 0.49998%, respectively. As of February 28, 2021, total number of outstanding ADSs was 1,064,315,074 after 83,520,131 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: None.

4.6.2 Employee Restricted Stock Granted to Management Team and to Top 10 Employees: None.

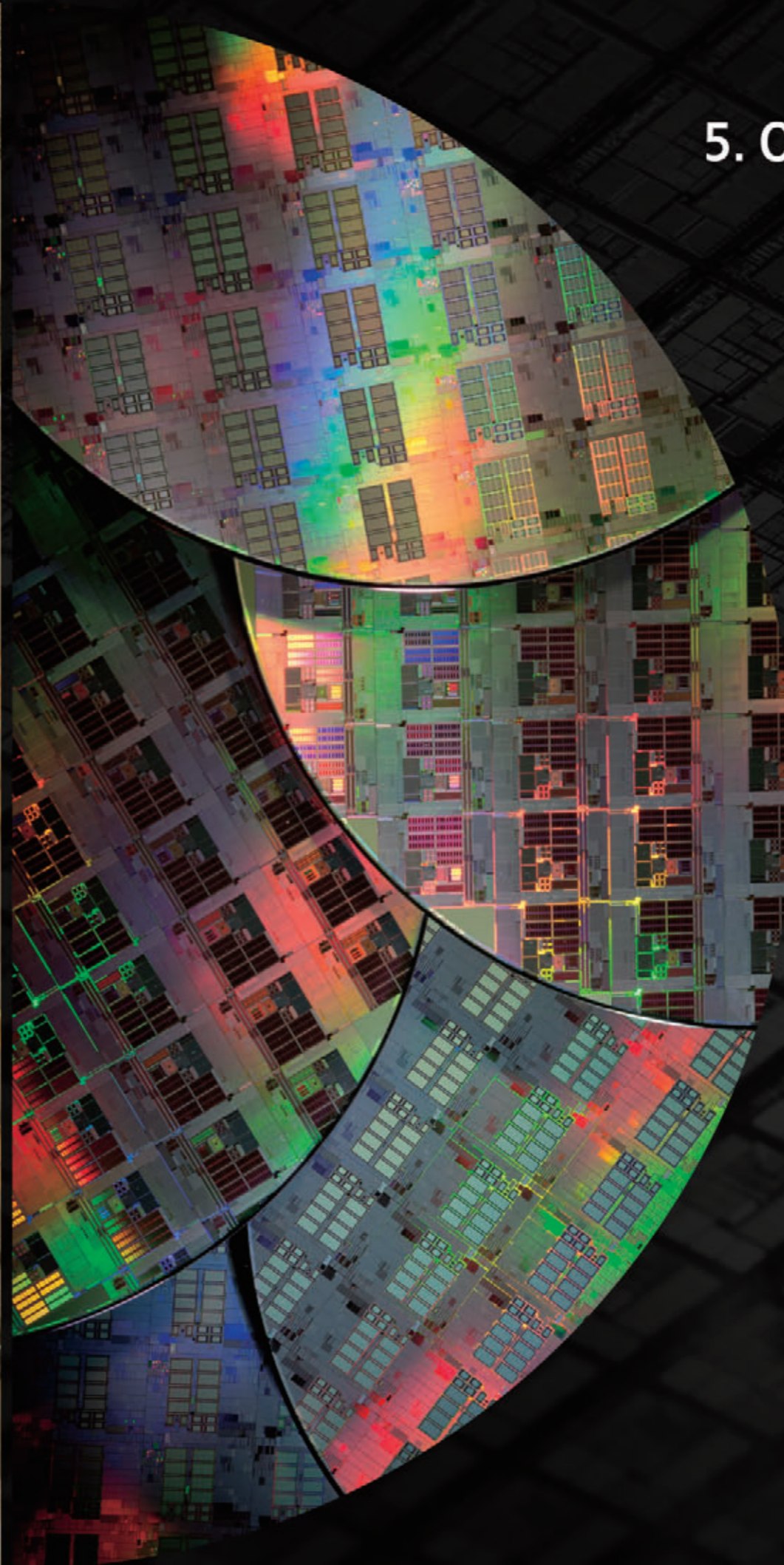
4.7 Status of New Share Issuance in Connection with Mergers and Acquisitions: None.

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 2020, the implementation of uncompleted funding plans was as follow:

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 2020, the actual implementation rate was 9.12% (calculated based on actual payment requests), as compared to the planned implementation rate of 13.92%. The funds were used for the originally planned projects and there was no major difference between the expected benefits and the actual situation.
Unsecured Corporate Bond (109-7)	NT\$18.5 billion	Purchase/expansion of facilities and equipment	The plan was originally scheduled to be implemented in the first quarter of 2021. As of the end of the fourth quarter of 2020, the actual implementation rate was 64.37% due to spending earlier than schedule. The funds were used for the originally planned projects and there was no major difference between the expected benefits and the actual situation.
US-dollar Domestic Unsecured Corporate Bond (109-1)	US\$1 billion	Purchase/expansion of facilities and equipment	The plan was originally scheduled to be implemented in the first quarter of 2021. As of the end of the fourth quarter of 2020, the actual implementation rate was 42.50% due to spending earlier than schedule. The funds were used for the originally planned projects and there was no major difference between the expected benefits and the actual situation.

5. Operational Highlights



> Turning gears in precision machinery (Left)

> Silicon wafers that drive technology progress (Right)

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 the most advanced process technologies, leading specialty technologies, the most comprehensive design ecosystem support, excellent manufacturing productivity and quality, advanced mask technologies, and 3DFabric™ advanced packaging and silicon stacking technologies, to meet a growing variety of customer needs. The Company strives to provide the best 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 11,617 different products for 510 customers in 2020. These chips were used across a broad spectrum of electronic applications, including computers and peripherals, information appliances, wired and wireless communication systems, 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 2020 and 2019

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

		2020		2019	
		Shipments	Net Revenue	Shipments	Net Revenue
Wafer	Domestic (Note 1)	2,038	113,838,353	1,678	91,259,259
	Export	10,360	1,064,617,920	8,390	836,058,092
Others (Note 2)	Domestic (Note 1)	N/A	12,452,935	N/A	8,835,783
	Export	N/A	148,345,603	N/A	133,832,314
Total	Domestic (Note 1)	2,038	126,291,288	1,678	100,095,042
	Export	10,360	1,212,963,523	8,390	969,890,406

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 2020 and 2019

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

Year	Wafers		
	Capacity	Output	Amount
2020	12 - 13	12-13	643,051
2019	12 - 13	9-10	448,292

5.2 Technology Leadership

5.2.1 R&D Organization and Investment

In 2020, TSMC continued to invest in research and development, with total R&D expenditures amounting to 8.2% of revenue, a level that equals or exceeds the R&D investment of many other leading high-tech companies.

Faced with the increasingly difficult challenge to continue extending Moore's Law, which calls for the doubling of semiconductor computing power every two years, TSMC has focused its R&D efforts on offering customers first-to-market, leading-edge technologies and design solutions that contribute to their product success. In 2020, following the transfer to manufacturing of 5nm technology, the Company's R&D organization continued to fuel the pipeline of technological innovation needed to maintain industry leadership. While TSMC's 3nm technology, the sixth generation platform to make use of 3D transistors, continues full development with major customers completed IP design and started silicon validation, the Company has proceeded into full development of 2nm technology, which is the leading edge technology in the semiconductor industry today. At the same time, the Company's research and pathfinding pushed forward with exploratory studies for nodes beyond 2nm.

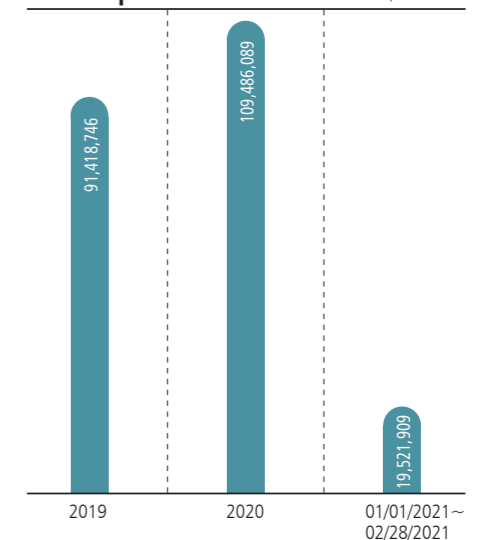
In addition to complementary-metal-oxide-semiconductor (CMOS) logic, TSMC conducts R&D on a wide range of other semiconductor technologies that provide the functionalities required by customers for mobile SoC and other applications. Highlights in 2020 include:

- Accomplished process validation of system-on-integrated-chip (SoIC) for both chip-on-wafer (CoW) and wafer-on-wafer (WoW) stacking using micron-level bonding-pitch processes with promising electrical yield and reliability results
- Developed the fifth generation (Gen-5) chip on wafer on substrate (CoWoS®) with record-breaking Si interposer area up to 2,400mm², which is equivalent to the size of three full reticles. Qualification completion is targeted in the first half of 2021
- Entered high-volume manufacturing of integrated fan-out package-on-package (InFO-PoP) Gen-5 packaging for mobile application processors and successfully qualified InFO-PoP Gen-6 for mobile applications with enhanced thermal performance

- Developed integrated fan-out on substrate (InFO-oS) Gen-3, which provides more chip partition integration with larger package size and higher bandwidth
- Expanded 12-inch Bipolar-CMOS-DMOS (BCD) technology portfolio on 90nm, 55nm and 22nm, targeting a variety of fast-growing applications of mobile power management ICs with various levels of integration
- Achieved technical qualification of 28nm eFlash for automobile electronics and micro controller units (MCU) applications
- Began production of 28nm resistive random access memory (RRAM) as a low-cost solution for the price sensitive IoT market and 22nm magnetic random access memory (MRAM) for next generation embedded memory MCUs, automotive devices, IoT and AI applications
- Entered volume production of CMOS image sensors with shrunk sub-micron pixel size and sensors meeting automotive grade reliability compliance

In 2020, 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



5.2.2 R&D Accomplishments in 2020

Highlights

● 3nm Technology

In 2020, TSMC focused on the manufacturing baseline process setup, yield learning, transistor and interconnect R/C performance improvement, and reliability evaluation of 3nm technology, which offers significant density improvement with better performance at same power or lower power consumption at comparable performance compared to 5nm technology. During the year, major customers completed IP design and started silicon validation. TSMC plans to complete 3nm technology qualification for risk production in 2021.

● 2nm Technology

In 2020, following initial research and pathfinding, TSMC proceeded into the development stage of 2nm technology, focusing on testkey and test vehicle design and implementation, mask making and Si pilot runs.

● Lithography Technology

The focus for R&D lithography in 2020 was on 3nm and 2nm technology development and preparation of technology development of next-generation nodes and beyond. In 3nm technology development, EUV (extreme ultraviolet) lithography showed good imaging capability with expected wafer yield. TSMC R&D is working on reduction of mask defects in EUV scanner and overlay errors while lowering overall cost. In 2021, TSMC will focus intensely on improving EUV quality and reducing costs in 2nm technology and beyond.

In 2020, the Company's EUV program made continuous improvement in light-source power and stability, enabling faster learning rates and process development for advanced nodes. Additional progress was made with resist process, pellicle, and related mask blanks. EUV technology has been adopted for full scale manufacturing.

● Mask Technology

Mask technology is very crucial in advanced lithography. In 2020, the R&D organization successfully completed 3nm node mask technology development, which largely implemented complicated and advanced EUV mask technology. Continuous advancement of EUV mask technology was made to meet mask requirements for 2nm node lithography.

Integrated Interconnect and Packaging

Wafer level system integration (WLSI) technologies have evolved quickly with various platforms mixed and matched in increasingly complex application scenarios. All such

technologies come under the umbrella of wafer level integration, which TSMC has named 3DFabric™ for its enablement of fine pitch chip-to-chip connection and a unified fabrication philosophy leveraging existing wafer processes. Under 3DFabric™, all processes with chips that are embedded before interconnection are called Integrated Fan-Out (InFO), while all processes that start with making re-distribution interconnection (RDL) followed by chip placement onto pre-made RDL are called CoWoS®. This new nomenclature more accurately reflects the nature of the processes involved and points to their future technology paths. Along with their siblings, SolC, system-on-wafer (SoW), and system-on-integrated-substrate (SoIS), they form a universal WLSI technology family that will lead the industry in meeting the future scaling needs as required by increasingly challenging and more diversified computing systems integration.

● 3DIC and TSMC-SolC™

TSMC-SolC™ 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 cost benefits. A SolC 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 has achieved process validation for both CoW and WoW stacking using micron-level bonding-pitch processes with promising electrical yield and reliability results. TSMC will keep pursuing the scaling of SolC technologies to align with the Company's other advanced Si technologies for further improved transistor density, system power, performance, and area (PPA), and cost competitiveness.

● 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 large 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 now under development has displayed a record-breaking Si interposer area up to 2,400mm², which is equivalent in size to three full reticles. Qualification completion is targeted in the first half of 2021.

● Chip-First InFO

In 2020, TSMC continued its industry leadership in high-volume manufacturing of InFO-PoP Gen-5 packaging for

mobile applications and InFO-oS Gen-2 for HPC chip-partition applications. InFO-PoP Gen-6 was also successfully qualified for mobile applications and displayed enhanced thermal performance. InFO-oS Gen-3, which provides more chip-partition integration with larger package size and higher bandwidth, was developed on schedule. To meet demand of HPC applications, TSMC developed ultra-high bandwidth InFO Local Silicon Interconnect (InFO_LSI) technology, in which SoC chiplets are integrated into a 3D InFO package through ultra-high density local Si interconnects (LSI). InFO without substrate, which uses multi-die heterogeneous integration and finer-pitch die-to-die interconnection, was successfully qualified for consumer applications. The newest generation IPD (integrated passive device) technology, which provides higher density capacitors and low ESL (effective series inductance) for improved electrical performance, passed qualification on InFO-PoP. This enhanced InFO-PoP will benefit both AI and 5G mobile applications. High volume manufacturing of the newest IPD is scheduled to begin in 2021.

● Advanced Interconnect

TSMC provides innovative technologies to enable small-dimensional interconnect and boost chip performance. In 2020, a brand-new hybrid interconnect was proposed as a future interconnect architecture. At small geometries, this new architecture shows promising potential to resolve Cu gap-fill difficulty and significantly reduce both interconnect resistance and capacitance. Developing innovative solutions such as these helps TSMC maintain its global technology leadership.

Corporate Research

Innovation in devices and materials continues to drive higher performance and reduced power consumption in advanced logic technologies. In 2020, TSMC stayed at the forefront of 2D and carbon nanotube (CNT) transistor research. TSMC successfully demonstrated a process to synthesize one-atomic-layer thick, single-crystal, hexagonal boron nitride (hBN) on full 2-inch wafers, a significant achievement as hBN has been shown to be an ideal passivation layer for 2D device channels. This outstanding fundamental research result was published in the March 2020 issue of *Nature*, one of the world's leading science journals.

At the 2020 Symposia on VLSI Technology, TSMC demonstrated the highest nFET current for 2D-FETs at a drain voltage of 1V, with CVD MoS₂ monolayer channel. And at the 2020 International Electron Device Meeting, the Company introduced a novel interfacial layer dielectric (ILX), which could nucleate on CNT a continuous sub-0.5nm thickness film, which allows growth of high-k gate dielectric (hafnium oxide) on CNT

by conventional ALD. Enabled by this novel ILX, top-gate CNT transistors with gate length down to 15nm were demonstrated with nearly ideal gate control.

TSMC continues to search and explore emerging high-density, non-volatile memory hardware accelerators for AI and HPC applications. The Company's corporate research is well positioned to pave the way for continued node-to-node density scaling, performance enhancement, and power reduction as it has done in the past.

Specialty Technologies

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

● Mixed Signal/Radio Frequency (MS/RF)

In 2020, TSMC developed a 3nm silicon proof and EM simulation-based LC tank design to facilitate high-speed SerDes (serializer/deserializer) circuit design with various metal scheme options and layout specifications with shortened design turnaround time. 2020 marked the first year that the end-users began enjoying the benefit of high speed, low latency and massive IoT in the 5G network roadmap. To improve the cost-benefit ratio of 5G, TSMC provided various 7nm and 6nm RF devices for customer transceiver designs. To boost performance in RF switching, TSMC developed a 40nm special process for 5G RF FEM (frontend module) design in sub-6 GHz applications. To accommodate higher frequencies, TSMC also developed a N28HPC+ process for enhancing power amplifier performance in 5G mmWave FEM designs.

● Power IC/Bipolar-CMOS-DMOS (BCD)

TSMC expanded the 12-inch BCD technology portfolio on 90nm, 55nm and 22nm in 2020, targeting a variety of fast-growing applications for mobile power management ICs with various levels of integration. This included dedicated optimized 5V power switches to handle increasing power demands driven by Li-ion batteries. 90nm BCD technology covers wide spectrum of applications from 5V to 35V and will be continuously expanded in 2021.

● Panel Drivers

In 2020, TSMC developed wafer-on-wafer stacking (WoW 28HPC/40HV) with stable product yield comparable to 28HPC+ with 60% active power reduction. In addition, 28HV monolithic technology completed customer IP verification, qualification and 128Mb SRAM yield verification. These technologies are leading-edge for small panel 4K resolution, OLED (organic light-emitting diode) and 120Hz display driver ICs. Furthermore, TSMC completed OLED on Si product

qualification and moved to mass production for AR/VR applications with excellent yield and illumination uniformity. In 2021, TSMC plans to offer an improved version of this technology and deploy 8V transistors for WoW stacking efficiency that will mean enhanced performance and cost reduction for OLED TDDI (touch with display driver integration) applications on 28HV.

● Micro-Electromechanical Systems (MEMS)

TSMC's modular MEMS technology was qualified for mass production of high-resolution accelerometers and gyroscopes in 2020. Future plans include the development of next-generation high-sensitivity thin microphones, total solutions for MEMS optical image stabilization (OIS) systems in 12-inch wafer, and BioMEMS applications.

● Gallium Nitride (GaN)

TSMC started mass production of the first generation of 650V and 100V enhanced GaN high electron mobility transistors (E-HEMT), which quickly ramped to full capacity in 2020. The Company continues to expand production capacity to meet customer demand. Production of the second generation of 650V and 100V power E-HEMT, which demonstrated 50% FOM (figure of merit) improvement, is planned for 2021. In addition, TSMC has completed the device development of 100V depleted GaN high electron mobility transistor (D-HEMT), with excellent performance, and passed engineering verification of several 5G base station module design companies. D-HEMT is targeted to start risk production in 2021.

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

In 2020, TSMC made several technical innovations in CMOS image sensor technology. The top four accomplishments were: (1) pixel size scaling demonstrating 15% shrinkage from the previous year with mass production for mobile, high-resolution imaging applications now underway; (2) technology transfer and start of mass production of automotive grade, ultra-wide dynamic-range image sensors with high reliability standard; (3) start of risk production phase of Germanium time-of-flight (TOF) sensors, which provide higher 3D object accuracy and use longer wavelength optical sources, resulting in lower system power consumption compared to silicon-type sensors – suitable for mobile devices and machine vision applications; (4) successful development of phase-II 3D metal-insulator-metal (MiM) high-density pixel-embedded capacitors with three times higher capacitance density than the previous generation for global shutter and high dynamic-range image sensor applications.

● Embedded Flash/Emerging Memory

TSMC reached several major milestones in embedded non-volatile memory (NVM) technologies in 2020. At the 40nm node, the Company successfully mass-produced NOR-based cell technology with split-gate cell to support consumer electronics and numerous automotive electronics applications. At the 28nm node, the Company's embedded flash development for HP mobile computing and HP low-leakage platforms maintained a stable high yield and achieved technical qualification for consumer electronics grade and automotive electronics grade-1 uses, and was scheduled for technical qualification in automotive electronics highest grade-0 in 2021. TSMC also offered RRAM as a low-cost embedded NVM solution for the price sensitive IoT market. The Company's 40nm node also achieved technical qualification as customer product qualifications continued. While the 28nm node entered mass production, the 22nm node completed technical qualification in 2020.

TSMC took major strides in embedded MRAM technology in 2020. At the 22nm node, the Company achieved technical qualification to successfully mass-produce MRAM and received the Flash Memory Summit 2020's Best of Show award for the most innovative AI application. TSMC expects MRAM in 22nm node to achieve technical qualification for automotive electronics applications in 2021. At the 16nm node, yield was stably high and technical qualification is expected in 2021, preparing for the next generation of embedded memory in MCUs, and many automotive, IoT and AI device 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: design flows for electronic design automation (EDA); silicon-proven libraries and IP building blocks; and simulation and verification design kits, i.e., process design kits (PDKs) and technology files.

EDA tools, features and IP solutions are readily available for customers to adopt to meet their product requirements at various design stages for TSMC's latest advanced technologies including 3nm, 5nm, 6nm, 7nm, 7nm+, 12nm, 22nm and 3DIC design enablement platforms. 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 the solution providers from 18 EDA partners, six Cloud partners,

39 IP partners, 20 design center alliance (DCA) and eight value chain aggregator (VCA) partners. Overall, TSMC and its EDA partners have created numerous deliverables from 0.5 μ m to 3nm and have accumulated more than 12,000 techfiles and 450 PDKs, and a portfolio of more than 35,000 IP titles to meet customer design needs.

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 is an essential element for IP and customer designs to ensure that features meet TSMC process technology requirements, with certification results that can be found on TSMC-Online™. There are corresponding tech files and PDKs available for customers to download and design together 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 0.5 μ m 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 process technology information is accurately represented in EDA tools. By 2020, TSMC had provided customers more than different 12,000 different tech files and 450 PDKs via TSMC-Online™. There are more than 100,000 customer downloads of these tech files and PDKs every year.

Library and IP

Silicon intellectual property (IP) is the basic building block of integrated circuit designs. Various IP types are available to support different customer design applications including foundation IP, analog IP, embedded memory IP, interface IP 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 2020, the Company expanded its library and silicon IP portfolio to contain more than 35,000 items, a 35% increase over 2019.

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 2020, TSMC addressed critical design challenges associated with new 3nm technology through OIP collaboration and announced the availability of 3nm design reference flows for mobile and HPC platforms. In addition to process technology advancements, the Company continued to develop 3DIC technologies and in 2020 introduced TSMC 3DFabric™, a comprehensive family consisting of both frontend 3D chip stacking and backend advanced packaging technologies. For frontend 3D chip stacking, the Company offers TSMC-SoIC™ design reference flow; for backend advanced packaging, TSMC updated its InFO and CoWoS® design reference flows to improve design productivity. These design reference flows feature 3nm FinFET-specific and 3DIC design solutions to optimize PPA.

5.2.5 Intellectual Property

TSMC has established a process to generate value from intellectual property by aligning intellectual property strategy with R&D, business operation objectives, marketing, and corporate development strategies. Intellectual property rights protect the company's freedom to operate, enhance competitive position, and enable many profit-generating activities.

TSMC has an active worldwide patent strategy and places on equivalent emphasis on both quality and quantity as the core principle of TSMC patent management. In terms of patent filings, TSMC has accumulated more than 62,000 patent applications worldwide as of end of 2020, including 6,900 applications filed in 2020 TSMC ranked historical high No.3 among global US patent applicants, and No.1 among patent applicants in Taiwan for five consecutive years. In terms of patent grants, TSMC has obtained exceeding 45,000 patent worldwide accumulated as of end of 2020, including 4,500 global patents received (more than 2,800 U.S. patents included, ranking No.6 among U.S. Patentees) in 2020. In terms of patent quality, the allowance rate of TSMC's U.S. applications reached 99% and TSMC ranked No.1 in patent allowance rate among global top 10 U.S. Patent Assignees in 2020. At least once a year, the General Counsel updates to the Board of Directors the status of the intellectual property management scheme. Going forward, TSMC will continue to implement a unified strategic plan for intellectual capital management, combining with strategic considerations and close alignment with the business objectives, to drive the timely creation, management and use of intellectual property.

TSMC has worked continuously to improve the quality of intellectual property portfolio and to reduce the maintenance costs. TSMC will continue to invest in intellectual property portfolio and intellectual property management system to ensure the company's technology leadership and receive maximum business interest from intellectual property rights.

5.2.6 TSMC University Collaboration Programs

In recent years TSMC has significantly expanded its collaboration with prestigious universities in Taiwan. The mission of this joint research is twofold: to encourage and prepare competent graduate students for the semiconductor industry and to inspire university professors to conduct leading-edge semiconductor research, including but not limited to novel devices, process and materials technologies, semiconductor manufacturing and engineering, and specialty technologies for electronic applications. 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. More than a thousand high-caliber students with backgrounds in the disciplines of electronics, physics, materials, chemistry, chemical engineering, and mechanical engineering participated in semiconductor-related research centers. In 2019, the Company jointly launched TSMC-NTHU Semiconductor Program for the purpose of enhancing the quality and quantity of domestic semiconductor students and attracting more outstanding students to a career in the semiconductor industry. In 2020, more schools such as National Taiwan University, National Cheng Kung University, National Yang Ming Chiao Tung University, National Taipei University of Technology, and National Taiwan University of Science and Technology joined the cooperation to launch the Semiconductor Program for student enrollment to narrow the gap between industry and academia, and to bolster the quality and competitiveness of the talent pool in the industry. 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, modeling, and design technologies.

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. Despite

the COVID-19 pandemic in 2020 that caused the majority of university campuses to close, 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 and micro-electromechanical system designs. TSMC's Virtual Design Environment (VDE) has received a great deal of positive feedback from customers, and in 2020 the Company further applied VDE to University Shuttle Program to achieve win-win collaboration, enabling elite graduate students to realize and demonstrate their innovations in the form of exciting new end products of various design applications.

5.2.7 Future R&D Plans

To maintain and strengthen its technology leadership, the Company plans to continue investing heavily in R&D. For advanced CMOS logic, TSMC's 3nm and 2nm CMOS nodes are progressing nicely through the pipeline. In addition, the Company's reinforced exploratory R&D work is focused on beyond-2nm node and on areas such as 3D transistors, new memory and low-R interconnect, which are on track to establish a solid foundation to feed into many technology platforms. For 3DIC advanced packaging, TSMC is developing innovations for energy-efficient sub-system integration and scaling to provide further augmentation of 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, established in 2017, continues to focus on novel materials, processes, devices, nanowires, and memory for the long-term, beyond eight to ten years. The Company also continues to collaborate with external research bodies from academia and industry consortia alike with the goal of extending Moore's Law and paving the way to 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 deliver competitive SoC technologies to its customers and to drive future business growth and profitability for years to come.

Summary of TSMC's Major Future R&D Projects

Project Name	Description	Risk Production (Estimated Target Schedule)
3nm logic technology platform and applications	6 th generation 3D CMOS technology platform for SoC	2021
Beyond-3nm logic technology platform and applications	3D CMOS technology platform for SoC	2023
3DIC	Cost-effective solutions with better form factor and performance for System-in-Package (SiP)	2018 - 2021
Next-generation lithography	EUV lithography and related patterning technology to extend Moore's Law	2018 - 2021
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 70% of the total R&D budget for 2021. Total R&D budget is estimated to be around 8% of 2021 revenue.

5.3 Manufacturing Excellence

5.3.1 GIGAFAB® Facilities

Maintaining reliable capacity is a key part of TSMC's 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 nine million 12-inch wafers in 2020. Fab 12, 14 and 15 support 0.13μm, 90nm, 65nm, 40nm, 28nm, 20nm, 16nm, 10nm, and 7nm process technologies, including each technology's sub-nodes. 5nm is currently accelerating into mass production at Fab 18. Besides, an additional portion of the capacity is built at Fab 12 for R&D work on leading-edge manufacturing technologies, which currently supports the technology development of 3nm and 2nm nodes and beyond.

The GIGAFAB® facilities are coordinated by a centralized management system known as super manufacturing platform (SMP) to provide customers with more 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, automotive and the Internet of Things, TSMC has further established big data and machine learning architecture to systematically integrate foundry know-how and data science methodology and develop knowledge-based engineering analysis with optimized 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 Artificial Intelligence (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. As a result, the system provides fast ramp-up, short cycle time, stable manufacturing, on-time delivery, and total quality satisfaction. It also offers great flexibility to quickly support customers' urgent pull-in requests when needed.

5.3.4 Digital Transformation

To meet the needs of advanced technologies, fast capacity ramping, and quality assurance in the future, TSMC has accelerated its corporate digital transformation by comprehensively introducing the technologies of big data, AI, and HPC. As a result, the Company has achieved breakthroughs on intelligent tool, process AI control, AI scheduling and

transportation, AI EDA (engineering data analysis), AR (augmented reality) and MR (mixed reality) for remote collaboration, all of which have enhanced the Company's manufacturing advantages.

5.3.5 Raw Materials and Supply Chain Management

In 2020, 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 SUMCO	These 5 suppliers together provide over 90% of the world's raw wafer supply.	<ul style="list-style-type: none"> 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 Versum Wah Lee	These 13 companies are the major worldwide suppliers of chemicals.	<ul style="list-style-type: none"> Most suppliers have relocated some of their operations closer to TSMC's major manufacturing facilities, thereby significantly improving procurement logistics. 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.	<ul style="list-style-type: none"> 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 Versum	These 10 companies are the major worldwide suppliers of specialty gases.	<ul style="list-style-type: none"> 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.	<ul style="list-style-type: none"> 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	2020			2019		
	Procurement Amount	As % of 2020 Total Net Procurement	Relation to TSMC	Procurement Amount	As % of 2019 Total Net Procurement	Relation to TSMC
Company A	13,144,243	20%	None	10,322,266	17%	None
Company B	11,010,731	17%	None	11,275,564	19%	None
Company C	6,445,912	10%	None	4,423,006	7%	None
Company D	6,211,819	9%	None	5,735,862	10%	None
Others	29,747,951	44%	-	27,403,771	47%	-
Total Net Procurement	66,560,656	100%	-	59,160,469	100%	-

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

5.3.6 Quality and Reliability

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 actions to shield customers from being affected by product defects.

In the technology development stage, the Quality & Reliability organization (Q&R) helps customers design in superior product reliability. In 2020, 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 successfully certified product quality and reliability for 5nm FinFET, a second generation process with EUV lithography, which enabled the first 5nm product in the world to reach mass production in 2020. For specialty technologies, Q&R successfully completed IP qualification of 22nm ULL (ultra-low leakage) embedded MRAM (magnetic random access memory). In support of HPC mobile computing and HPC low-leakage process platforms, Q&R qualified 28nm embedded flash consumer grade and automotive grade 1. In addition, TSMC's advanced packaging solutions enable system integration with wafer level process, by integration of frontend wafer process and backend chip packaging. In 2020, Q&R successfully qualified fifth generation InFO solutions with finer interconnect line width and spacing and CoWoS® with larger interposer size for heterogeneous integration, and then began high volume production for both mobile and HPC products.

To continuously reduce product defects, enhance process controls, make early detection of abnormalities and prevent quality problems that affect customers, 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 requirement tightening for 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), design of experiment (DOE), statistical process control (SPC), metrology and deep machine learning, and quality audit in 2020. These included the promotion and training of deep machine learning, which was successfully applied to automatic classification of wafer defects and advanced spectral analysis to detect differences among processes and equipment so that corrective actions could be initiated. Furthermore, deep machine learning was also used to analyze the correlation between raw materials and TSMC process parameters for the first time and to successfully block

problematic raw materials. In 2021, Q&R will continue the development of employee capabilities by promoting quality methods and professional trainings and applying deep machine learning to enhance TSMC competitiveness.

For raw material and supplier management, Q&R and the material management organization collaborate to enhance the inspection capability for incoming material quality and supplier management. A raw material quality improvement task force works with suppliers, and raw material quality checks have been added to critical control points of the production line. Q&R has also required suppliers to apply statistical process methods to strictly control the stability of their own process quality and enhance upstream raw material analysis. Q&R requests that supply chain factories seek ISO 9001 certification, implement process change management and evaluation, and undertake quality audits. In 2020, Q&R set up a new laboratory dedicated to advanced material analysis to enhance the capability of raw material inspection and speed up the root cause investigation for abnormal material events. In the meantime, Q&R is developing a raw materials' fingerprinting database to further enhance TSMC's control and analysis capability for any raw material's basic characteristics.

Q&R is committed to "green manufacturing" and "responsible supply chain" practices and collaborates with the corporate ESH organization to ask suppliers to document that their materials comply with international regulation for carcinogenic, mutagenic and reprotoxic (CMR) substances and to classify all risky materials and carry out sampling tests. In 2020, Q&R had 100% inspection capability for CMR substances and shared the inspection methods and skills with major material suppliers to enhance monitoring of hazardous substances and control capability in supply chain. Furthermore, Q&R also works with operational entities for the recycling and reuse of chemical acids and successfully achieved several impurity reductions in recycling chemical acids during 2020. In 2021, Q&R will continue sharing its technical knowledge to assist chemical suppliers for developing further recycling and reuse projects 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 talents. In 2020, Q&R again collaborated with Semiconductor Equipment and Materials International (SEMI) to hold the second Strategic Materials Conference (SMC) in Taiwan to motivate talented domestic personnel and 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 2020, TSMC's outstanding performance was recognized with five gold awards, one silver award and one "best improvement and innovation" award. At the same time, Q&R coached domestic material suppliers to participate in the competition for local suppliers' quality culture and capability enhancement and they won a total of four gold, five silver, and five bronze awards. In 2021, Q&R will encourage far 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 2020. 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. Periodic 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 four major growth markets the Company serves: mobile communications, high performance computing (HPC), Internet of Things (IoT), and automotive electronics.

5.4 Customer Trust

5.4.1 Customers

TSMC's worldwide customers have a 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, STMicroelectronics N.V., Xilinx, Inc., and many more.

Customer Service

TSMC is committed to providing the best customer services and strongly believes that customer service is critical to customer satisfaction and customer relationship, which are keys for customer retention, customer relationship enhancement, and attracting new customers. TSMC has established a dedicated customer service team that strives to provide world-class services in supporting customers in product design, mask making, wafer manufacturing, and backend services, thereby leading to customer satisfaction, gaining customer trust, and sustaining corporate revenue and profitability.

To improve customer interaction on a real-time basis, TSMC-Online™ offers a suite of web-based applications that allows us 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 of wafer fabrication, backend processes, and shipments in client orders.

Customer Satisfaction

To ensure customer satisfaction, and to make sure we fully comprehend customer needs, TSMC appoints third-party consulting firms to conduct annual customer satisfaction surveys (ACSS) with majority of existing customers either via on-line surveys or interviews. In addition to the survey, customer service team 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.

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

Unit: NT\$ thousands

Customer	2020			2019		
	Net Revenue	As % of 2020 Total Net Revenue	Relation to TSMC	Net Revenue	As % of 2019 Total Net Revenue	Relation to TSMC
Customer A	336,775,511	25%	None	247,213,291	23%	None
Customer B	167,390,758	12%	None	152,876,885	14%	None
Others	835,088,542	63%	-	669,895,272	63%	-
Total Net Revenue	1,339,254,811	100%	-	1,069,985,448	100%	-

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

5.4.2 Open Innovation Platform® Initiative

Innovation has always been an exciting and challenging proposition. Competition among semiconductor companies continues to intensify in the face of increasing industry consolidation and the commoditization of technology at more mature, conventional levels. 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 innovation via its Open Innovation Platform® (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 IP, design implementation, process technology 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 accuracy 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, library, IPs, and design service partners.

TSMC's OIP alliance consists of 18 EDA partners, six Cloud partners, 39 IP partners, 20 design center alliance (DCA) partners, and eight value chain aggregator (VCA) partners. TSMC and its 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.

TSMC's OIP partner management portal facilitates communication with its 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 August 2020. 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 was 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 design solutions ready for design power, performance, and area (PPA) exploration for smartphone and HPC applications, as well as on 5nm, 6nm and 7nm design solutions and ecosystem that have already been applied to actual customer chip production. Other presentation highlights included: N12e™, featuring further speed/power enhancement with design solutions to support AI-enabled IoT products; comprehensive automotive design solutions and ecosystems, already developed for 16nm and 7nm and soon to be extended to 5nm; and 3DFabric™ design ecosystem solutions that currently available to support chip, package, and system integration implementation and verification for improved system performance. The availability of the aforementioned design ecosystem solutions will help customers successfully pursue opportunities in mobile, high performance computing, the IoT and automotive markets.

5.5 Human Capital

Human capital is TSMC's most treasured asset. In this regard, the Company's main role is to provide jobs with meaningful contents in a safe environment with excellent compensation and benefits. 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.

5.5.1 Human Rights Policy

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 addition, TSMC refrains from forcing employees to do unwilling labor service, listens to the employees, keeps communication channels open, and respects the right of all workers to form and join trade unions of their own choosing as well as to refrain from such activities as they choose.

5.5.2 Workforce Structure

At the end of 2020, TSMC had 56,831 employees worldwide, including 5,857 managers, 27,767 professionals, 4,832 assistants and 18,375 technicians. The following table summarizes the makeup of TSMC's workforce as of the end of February, 2021:

		12/31/2019	12/31/2020	02/28/2021
Job	Managers	5,364	5,857	5,969
	Professionals	24,416	27,767	28,393
	Assistant Engineer/Clerical	4,357	4,832	4,903
	Technician	17,160	18,375	18,558
Total		51,297	56,831	57,823
Gender	Male	62.2%	62.9%	63.1%
	Female	37.8%	37.1%	36.9%
Education	Ph.D.	4.5%	4.4%	4.4%
	Master's	44.7%	46.7%	47.0%
	Bachelor's	25.3%	25.7%	25.9%
	Other Higher Education	10.6%	9.8%	9.6%
	High School	14.8%	13.3%	13.1%
Average Years of Age		36.6	36.4	36.4
Average Years of Service		9.3	9.1	9.1

5.5.3 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 operates on the principles of 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.

To promote continuous growth, in 2020 TSMC recruited more than 8,000 employees, including over 5,600 managers and professionals, as well as over 2,500 assistants and technicians.

5.5.4 People Development

Employee development is an integral and critical factor for the growth of any company. The continuous growth of TSMC is also inseparable from employees' development. - 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 the Company's and the individuals' development objectives can be achieved through the integration of internal and external training resources and with internal rotation opportunities. To help employees reach their potential, TSMC is committed to

on-the-job training and systematic job rotation. In addition, TSMC provides various resources and channels to encourage employees to learn on their own to further improve their performance and achieve their potential. TSMC integrates internal and external resources and designs diversified development programs based on business objectives, the nature of the individual's job, work performance and career development path. The Company provides employees with a diverse network of learning resources, including on-the-job training, classroom training, e-learning, coaching, mentoring and job rotation; it also creates an educational atmosphere through learning activities in response to organizational development requirements and employee capability enhancement goals.

The Company provides employees with a wide range of onsite general, professional and managerial training programs. In addition to engaging external experts as trainers, hundreds of TSMC employees are trained to be qualified instructors to share their valuable knowledge and skillset in internal educational courses.

TSMC provides the following training programs:

- 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 – as required by government regulations and/or the Company policies, as well as on basic subjects for all employees or employees in various job functions. Topics include industry-specific safety, workplace health and safety, ethics and regulatory compliance, sexual harassment prevention, quality, fab emergency response and personal effectiveness management.
- 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.
- 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 that supports TSMC's global business goals.
- Management – management development programs tailored to the needs of managers at all levels based on their managerial capabilities and responsibilities, including new,

experienced, and senior managers; optional courses also available.

- 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.
- Personal effective training – addresses topics related to professional skillsets including presentation skills, innovation, self-encouragement, and teamwork, etc.
- Customized – programs tailored to the needs of the organization and/or the employee's development plan.

In 2020, TSMC conducted over 1,300 internal training sessions and provided over 920 thousand hours of training and a total of more than 1 million attendees participated. On average, each employee attended over 16 hours of training and TSMC spent over NT\$95 million on the education and development of employees.

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

5.5.5 Compensation

TSMC employees are entitled to 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 talented, performing employees. Thanks to solid business results over the past years, the actual total compensation received by employees has been above the industry's average.

TSMC's compensation program includes a monthly salary, business performance bonuses based on quarterly business results, and an 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 help align their interests with the interests of TSMC's shareholders, therefore, TSMC formulated Corporate Officer Shareholding Guidelines in 2020. The required value for Chairman, CEO, and other corporate officers' holding of TSMC shares shall be certain times of their annual base salary. Officers shall keep the required value for the entire period of employment.

5.5.6 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.

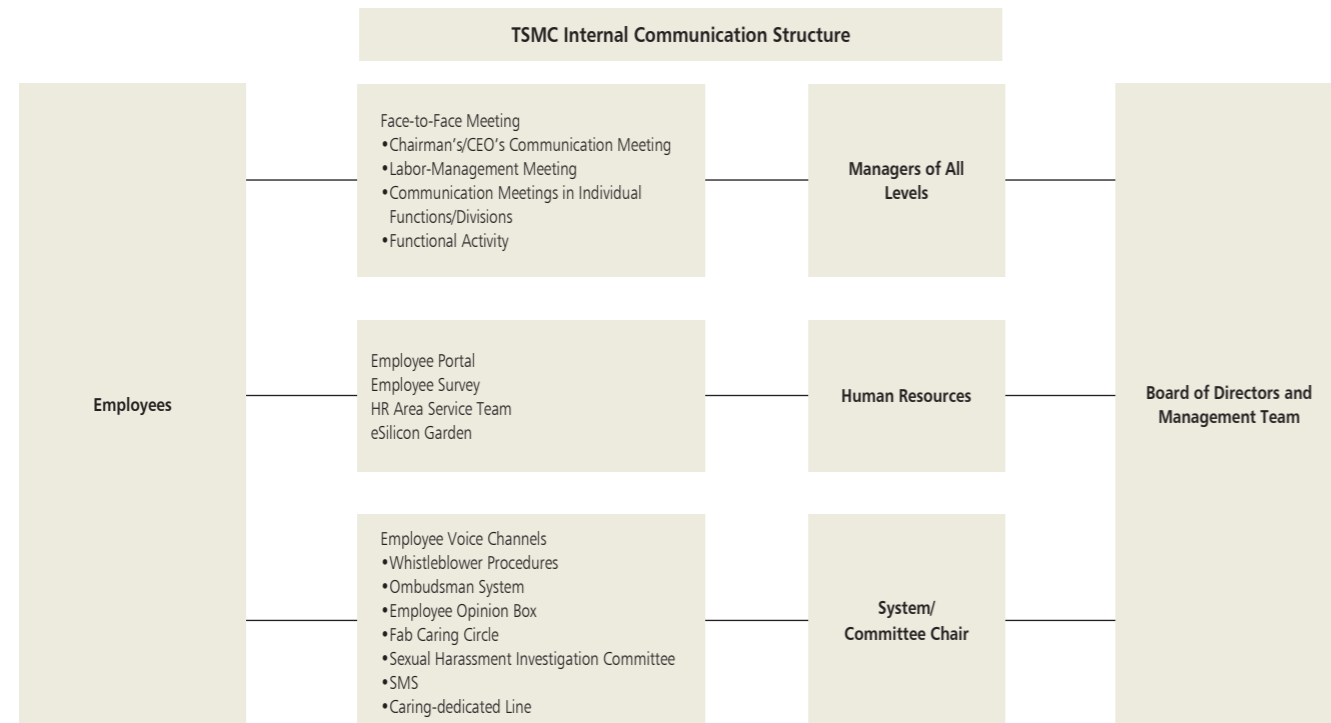
Employee Communication

TSMC values two-way 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 and creates a win-win situation for the Company and employees.

TSMC supports a host of two-way communication channels, including:

- Communication meetings for various levels of managers and employees; for example, the Chairman's/CEO's communication meeting, and communication meetings in individual functions/divisions
- Quarterly labor-management meetings to provide business updates and invite employees to discuss labor conditions and welfare activities
- Periodic employee satisfaction surveys to selected employees, with follow-up actions based on survey findings
- A core value survey taken biennially to understand the Company's implementation of core values and employees' commitment and engagement
- *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*, a website hosting TSMC's internal electronic publications and providing real-time updates on major activities of the Company, as well as inspirational content featuring outstanding teams and individuals
- Two reporting channels for 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



TSMC has many internal communication channels, a major reason why the relationship between management and employees has been quite harmonious. The Company respects the right of all workers to form and join labor unions of their own choosing as well as the right to refrain from such activities. No employees have pursued this avenue or issued a request to form a union so far.

During 2020 and as of the date of this Annual Report, TSMC has not incurred any labor-dispute related losses. However, the Company was fined following labor inspection results as follows: NT\$90,000 issued on 06/17/2020 for overtime applications not being timely processed (Labor Standards Act Article 24 Paragraph 1) and continuous working days exceeding the permitted limit (Labor Standards Act Article 36 Paragraph 1); NT\$90,000 issued on 06/01/2020 for management negligence when a pregnant female employee worked past ten p.m. (Labor Standards Act Article 49 Paragraph 5); 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). The Company has reviewed its working hours management and related administrative process, and strengthened its communication of these matters to managers and employees.

Employee Benefit Programs

- 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; also festival bonuses and emergency subsidies are also available to address employees' needs

Diverse Employee Recognition

TSMC sponsors various internal award programs to recognize employees for outstanding achievements, 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 at each fab: recognizes employees' continuous efforts in creating value
- 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
- Function-wide awards dedicated to innovation, such as the Idea Forum, TQE awards and CSR Award, which recognize employee initiative and continuous implementation of innovative practices

Apart from company-wide awards, TSMC encourages employees to participate in external talent activities and competitions. In 2020, distinguished TSMC employees continued to be recognized through a host of awards, such as the National Model Labor Award, the Excellent Young Engineers Award, Outstanding Engineer Award, Taiwan Continuous Improvement Awards, and the National Manager Excellence Award.

5.5.7 Retention

Overall employee satisfaction with the Company was measured in the biennial TSMC core values survey last taken in 2020. In this survey, 95% of participants said they were willing to commit fully in their work to make TSMC an even more successful company; while 96% concurred with the statement that they are willing to contribute their talents to TSMC and grow together with the Company for the next five years.

In 2020, the Company recorded a manageable turnover rate of 5.3% which complies with the healthy turnover rate recognized by the company.

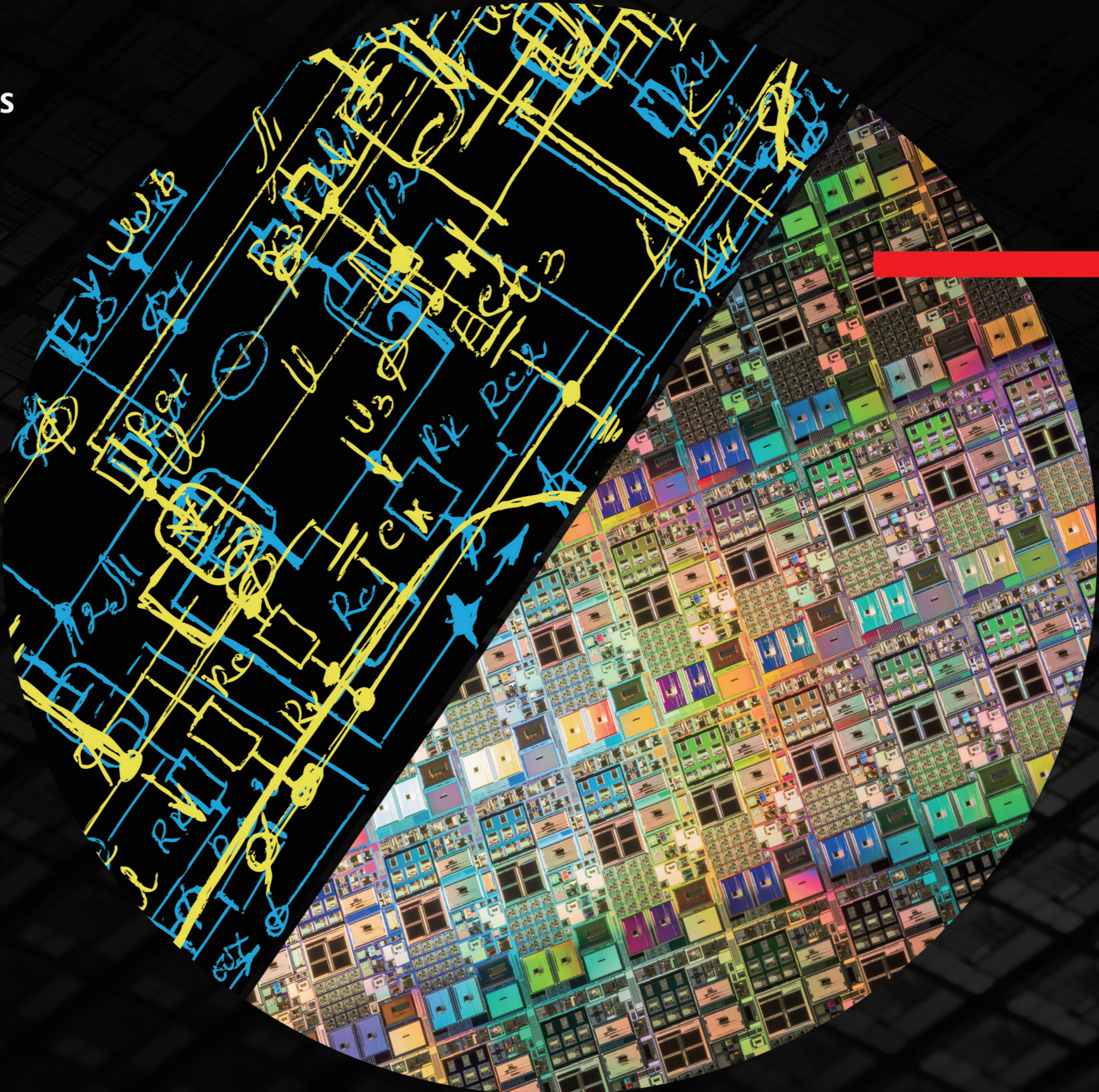
5.5.8 Retirement Policy

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 deepens their commitment to TSMC.

5.6 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 71.

6. Financial Highlights and Analysis



> A meticulously hand-drawn IC diagram (Left)

> Colorful and delicate ICs (Right)

6.1 Financial Highlights

6.1.1 Condensed Balance Sheet

Condensed Balance Sheet from 2016 to 2020 (Consolidated)

Unit: NT\$ thousands

Item	Year	2016	2017	2018	2019	2020
Current Assets		817,729,126	857,203,110	951,679,721	822,613,914	1,092,185,308
Long-term Investments (Note 1)		46,153,916	41,569,074	29,304,796	30,172,039	27,728,208
Property, Plant and Equipment		997,777,687	1,062,542,322	1,072,050,279	1,352,377,405	1,555,589,120
Right-of-use Assets		0	0	0	17,232,402	27,728,382
Intangible Assets		14,614,846	14,175,140	17,002,137	20,653,028	25,768,179
Other Assets (Note 2)		10,179,727	16,371,997	20,091,105	21,756,244	31,712,208
Total Assets		1,886,455,302	1,991,861,643	2,090,128,038	2,264,805,032	2,760,711,405
Current Liabilities						
Before Distribution		318,239,273	358,706,680	340,542,586	590,735,701	617,151,048
After Distribution		499,751,936	566,149,724	547,985,630	655,561,652	681,976,999 (Note 3)
Noncurrent Liabilities		178,164,903	110,395,320	72,089,056	51,973,905	292,938,358
Total Liabilities						
Before Distribution		496,404,176	469,102,000	412,631,642	642,709,606	910,089,406
After Distribution		677,916,839	676,545,044	620,074,686	707,535,557	974,915,357 (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		56,272,304	56,309,536	56,315,932	56,339,709	56,347,243
Retained Earnings						
Before Distribution		1,072,008,169	1,233,362,010	1,376,647,841	1,333,334,979	1,588,686,081
After Distribution		890,495,506	1,025,918,966	1,169,204,797	1,268,509,028	1,523,860,130 (Note 3)
Others		1,663,983	(26,917,818)	(15,449,913)	(27,568,369)	(54,679,873)
Equity Attributable to Shareholders of the Parent						
Before Distribution		1,389,248,261	1,522,057,533	1,676,817,665	1,621,410,124	1,849,657,256
After Distribution		1,207,735,598	1,314,614,489	1,469,374,621	1,556,584,173	1,784,831,305 (Note 3)
Noncontrolling Interests		802,865	702,110	678,731	685,302	964,743
Total Equity						
Before Distribution		1,390,051,126	1,522,759,643	1,677,496,396	1,622,095,426	1,850,621,999
After Distribution		1,208,538,463	1,315,316,599	1,470,053,352	1,557,269,475	1,785,796,048 (Note 3)

Note 1: Long-term investments as of December 31, 2016 and 2017 include noncurrent available-for-sale financial assets, 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 9, 2021.

Condensed Balance Sheet from 2016 to 2020 (Unconsolidated)

Unit: NT\$ thousands

Item	Year	2016	2017	2018	2019	2020
Current Assets		443,781,164	436,769,337	469,966,106	355,118,125	580,949,248
Long-term Investments (Note 1)		397,290,976	464,401,415	550,524,494	559,380,999	565,432,338
Property, Plant and Equipment		979,401,337	1,016,355,970	1,025,286,941	1,310,900,634	1,511,784,556
Right-of-use Assets		0	0	0	15,030,020	25,184,827
Intangible Assets		10,047,991	9,870,127	12,429,930	16,271,444	21,733,597
Other Assets (Note 2)		6,816,676	11,992,542	17,253,537	18,774,850	28,420,547
Total Assets		1,837,338,144	1,939,389,391	2,075,461,008	2,275,476,072	2,733,505,113
Current Liabilities						
Before Distribution		308,177,214	308,383,240	328,060,518	605,540,547	680,529,735
After Distribution		489,689,877	515,826,284	535,503,562	670,366,498	745,355,686 (Note 3)
Noncurrent Liabilities		139,912,669	108,948,618	70,582,825	48,525,401	203,318,122
Total Liabilities						
Before Distribution		448,089,883	417,331,858	398,643,343	654,065,948	883,847,857
After Distribution		629,602,546	624,774,902	606,086,387	718,891,899	948,673,808 (Note 3)
Equity						
Capital Stock		259,303,805	259,303,805	259,303,805	259,303,805	259,303,805
Capital Surplus		56,272,304	56,309,536	56,315,932	56,339,709	56,347,243
Retained Earnings						
Before Distribution		1,072,008,169	1,233,362,010	1,376,647,841	1,333,334,979	1,588,686,081
After Distribution		890,495,506	1,025,918,966	1,169,204,797	1,268,509,028	1,523,860,130 (Note 3)
Others		1,663,983	(26,917,818)	(15,449,913)	(27,568,369)	(54,679,873)
Total Equity						
Before Distribution		1,389,248,261	1,522,057,533	1,676,817,665	1,621,410,124	1,849,657,256
After Distribution		1,207,735,598	1,314,614,489	1,469,374,621	1,556,584,173	1,784,831,305 (Note 3)

Note 1: Long-term investments as of December 31, 2016 and 2017 include 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 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 9, 2021.

6.1.2 Condensed Statement of Comprehensive Income

Condensed Statement of Comprehensive Income from 2016 to 2020 (Consolidated)

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

Item	Year	2016	2017	2018	2019	2020
Net Revenue		947,938,344	977,447,241	1,031,473,557	1,069,985,448	1,339,254,811
Gross Profit		474,832,098	494,826,402	497,874,253	492,701,896	711,130,120
Income from Operations		377,957,778	385,559,223	383,623,524	372,701,090	566,783,698
Non-operating Income and Expenses		8,001,602	10,573,807	13,886,739	17,144,246	17,993,482
Income before Income Tax		385,959,380	396,133,030	397,510,263	389,845,336	584,777,180
Net Income		334,338,236	343,146,848	351,184,406	345,343,809	518,158,082
Other Comprehensive Income (Loss) for the Year, Net of Income Tax		(11,067,189)	(28,821,631)	9,836,976	(11,823,562)	(30,321,802)
Total Comprehensive Income for the Year		323,271,047	314,325,217	361,021,382	333,520,247	487,836,280
Net Income Attributable to:						
Shareholders of the Parent		334,247,180	343,111,476	351,130,884	345,263,668	517,885,387
Noncontrolling Interests		91,056	35,372	53,522	80,141	272,695
Total Comprehensive Income Attributable to:						
Shareholders of the Parent		323,186,736	314,294,993	360,965,015	333,440,460	487,563,478
Noncontrolling Interests		84,311	30,224	56,367	79,787	272,802
Basic/Diluted Earnings Per Share (Note)		12.89	13.23	13.54	13.32	19.97

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

Condensed Statement of Comprehensive Income from 2016 to 2020 (Unconsolidated)

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

Item	Year	2016	2017	2018	2019	2020
Net Revenue		936,387,291	969,136,109	1,023,925,713	1,059,646,793	1,314,793,013
Gross Profit		461,808,296	478,937,691	492,955,501	480,143,141	682,004,023
Income from Operations		369,730,533	374,690,117	384,027,838	365,923,992	543,465,507
Non-operating Income and Expenses		15,458,427	18,626,059	12,170,315	22,821,227	39,153,435
Income before Income Tax		385,188,960	393,316,176	396,198,153	388,745,219	582,618,942
Net Income		334,247,180	343,111,476	351,130,884	345,263,668	517,885,387
Other Comprehensive Income (Loss) for the Year, Net of Income Tax		(11,060,444)	(28,816,483)	9,834,131	(11,823,208)	(30,321,909)
Total Comprehensive Income for the Year		323,186,736	314,294,993	360,965,015	333,440,460	487,563,478
Basic/Diluted Earnings Per Share (Note)		12.89	13.23	13.54	13.32	19.97

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

6.1.3 Financial Analysis

Financial Analysis from 2016 to 2020 (Consolidated)

		2016	2017	2018	2019	2020
Capital Structure Analysis	Debts Ratio (%)	26.31	23.55	19.74	28.38	32.97
	Long-term Fund to Property, Plant and Equipment (%)	157.17	153.70	163.20	123.79	137.80
Liquidity Analysis	Current Ratio (%)	256.95	238.97	279.46	139.25	176.97
	Quick Ratio (%)	241.34	217.94	248.76	124.92	154.35
	Times Interest Earned (Times)	117.74	119.95	131.28	120.92	281.95
Operating Performance Analysis	Average Collection Turnover (Times)	8.78	7.74	8.19	7.95	9.35
	Days Sales Outstanding	41.57	47.16	44.57	45.91	39.04
	Average Inventory Turnover (Times)	8.18	7.88	6.02	6.20	5.70
	Average Inventory Turnover Days	44.62	46.32	60.63	58.87	64.04
	Average Payment Turnover (Times)	20.11	16.82	16.56	15.48	15.45
	Property, Plant and Equipment Turnover (Times)	1.02	0.95	0.97	0.88	0.92
Profitability Analysis	Total Assets Turnover (Times)	0.53	0.50	0.51	0.49	0.53
	Return on Total Assets (%)	19.03	17.84	17.34	15.99	20.69
	Return on Equity Attributable to Shareholders of the Parent (%)	25.60	23.57	21.95	20.94	29.84
	Operating Income to Paid-in Capital Ratio (%)	145.76	148.69	147.94	143.73	218.58
	Pre-tax Income to Paid-in Capital Ratio (%)	148.84	152.77	153.30	150.34	225.52
	Net Margin (%)	35.27	35.11	34.05	32.28	38.69
Cash Flow	Basic Earnings Per Share (NT\$)	12.89	13.23	13.54	13.32	19.97
	Diluted Earnings Per Share (NT\$)	12.89	13.23	13.54	13.32	19.97
	Cash Flow Ratio (%)	169.63	163.17	168.54	104.13	133.30
Leverage	Cash Flow Adequacy Ratio (%)	108.57	112.41	113.11	106.60	100.74
	Cash Flow Reinvestment Ratio (%)	11.51	11.08	9.06	8.45	11.24
	Operating Leverage	2.15	2.16	2.28	2.41	1.97
Industry Specific Key Performance Indicator	Financial Leverage	1.01	1.01	1.01	1.01	1.00
	Billing Utilization Rate (%) (Note)	92	91	87	81	94
	Advanced Technologies (16-nanometer and below) Percentage of Wafer Sales (%)	21	32	41	50	58
	Sales Growth (%)	12.38	3.11	5.53	3.73	25.17
	Net Income Growth (%)	9.03	2.65	2.34	-1.67	50.00

Analysis of deviation of 2020 vs. 2019 over 20%:

1. Current ratio increased by 27% mainly due to increase in cash and cash equivalents and inventories.
2. Quick ratio increased by 24% mainly due to increase in cash and cash equivalents.
3. Times interest earned increased by 133% mainly due to increase in pre-tax income and decrease in interest expenses.
4. Return on total assets increased by 29%, return on equity attributable to shareholders of the parent increased by 43%, basic earnings per share increased by 50% and diluted earnings per share increased by 50% mainly due to increase in net income attributable to shareholders of the parent.
5. Operating income to paid-in capital ratio increased by 52% as a result of increase in operating income.
6. Pre-tax income to paid-in capital ratio increased by 50% as a result of increase in pre-tax income.
7. Cash flow ratio increased by 28% and cash flow reinvestment ratio increased by 33% 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
 - (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
 - (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 2016 to 2020 (Unconsolidated)

		2016	2017	2018	2019	2020
Capital Structure Analysis	Debt Ratio (%)	24.39	21.52	19.21	28.74	32.33
	Long-term Fund to Property, Plant and Equipment Ratio (%)	156.13	160.48	170.43	127.39	135.80
Liquidity Analysis	Current Ratio (%)	144.00	141.63	143.26	58.64	85.37
	Quick Ratio (%)	128.65	118.68	113.07	45.81	65.93
	Times Interest Earned (Times)	146.73	144.04	137.46	122.80	330.85
Operating Performance Analysis	Average Collection Turnover (Times)	8.89	7.86	8.45	8.32	9.80
	Days Sales Outstanding	41.07	46.44	43.21	43.88	37.24
	Average Inventory Turnover (Times)	8.56	8.39	6.31	6.65	6.13
	Average Inventory Turnover Days	42.63	43.49	57.89	54.91	59.58
	Average Payment Turnover (Times)	19.04	16.39	16.22	15.10	14.89
	Property, Plant and Equipment Turnover (Times)	1.03	0.97	1.00	0.91	0.93
	Total Assets Turnover (Times)	0.54	0.51	0.51	0.49	0.52
Profitability Analysis	Return on Total Assets (%)	19.58	18.29	17.62	16.00	20.74
	Return on Equity (%)	25.60	23.57	21.95	20.94	29.84
	Operating Income to Paid-in Capital Ratio (%)	142.59	144.50	148.10	141.12	209.59
	Pre-tax Income to Paid-in Capital Ratio (%)	148.55	151.68	152.79	149.92	224.69
	Net Margin (%)	35.70	35.40	34.29	32.58	39.39
	Basic Earnings Per Share (NT\$)	12.89	13.23	13.54	13.32	19.97
	Diluted Earnings Per Share (NT\$)	12.89	13.23	13.54	13.32	19.97
Cash Flow	Cash Flow Ratio (%)	172.81	184.45	173.17	98.00	114.56
	Cash Flow Adequacy Ratio (%)	107.06	99.42	113.52	106.59	99.88
	Cash Flow Reinvestment Ratio (%)	11.74	10.98	9.23	8.23	10.93
Leverage	Operating Leverage	2.19	2.22	2.28	2.46	2.04
	Financial Leverage	1.01	1.01	1.01	1.01	1.00

Analysis of deviation of 2020 vs. 2019 over 20%:

1. Current ratio increased by 46% mainly due to increase in cash and cash equivalents and inventories.
2. Quick ratio increased by 44% mainly due to increase in cash and cash equivalents.
3. Times interest earned increased by 169% mainly due to increase in pre-tax income and decrease in interest expenses.
4. Return on total assets increased by 30%, return on equity increased by 43%, net margin increased by 21%, basic earnings per share increased by 50% and diluted earnings per share increased by 50% mainly due to increase in net income.
5. Operating income to paid-in capital ratio increased by 49% as a result of increase in operating income.
6. Pre-tax income to paid-in capital ratio increased by 50% as a result of increase in pre-tax income.
7. Cash flow reinvestment ratio increased by 33% 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
- (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
- (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 2016 to 2020

Year	CPA	Audit Opinion
2016	Yih-Hsin Kao, Yu-Feng Huang	An Unmodified 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

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 2020 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 9, 2021

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 2020 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	2020	2019	Difference	%
Current Assets	1,092,185,308	822,613,914	269,571,394	33%
Long-term Investments (Note 1)	27,728,208	30,172,039	(2,443,831)	-8%
Property, Plant and Equipment	1,555,589,120	1,352,377,405	203,211,715	15%
Right-of-use Assets	27,728,382	17,232,402	10,495,980	61%
Intangible Assets	25,768,179	20,653,028	5,115,151	25%
Other Assets (Note 2)	31,712,208	21,756,244	9,955,964	46%
Total Assets	2,760,711,405	2,264,805,032	495,906,373	22%
Current Liabilities	617,151,048	590,735,701	26,415,347	4%
Noncurrent Liabilities	292,938,358	51,973,905	240,964,453	464%
Total Liabilities	910,089,406	642,709,606	267,379,800	42%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	56,347,243	56,339,709	7,534	0%
Retained Earnings	1,588,686,081	1,333,334,979	255,351,102	19%
Others	(54,679,873)	(27,568,369)	(27,111,504)	-98%
Equity Attributable to Shareholders of the Parent	1,849,657,256	1,621,410,124	228,247,132	14%
Total Equity	1,850,621,999	1,622,095,426	228,526,573	14%

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 right-of-use assets: The increase was mainly due to increase in leases of land.

Increase in intangible assets: The increase was mainly due to increase in technology license and patent.

Increase in other assets: The increase in other assets was mainly due to increase in deferred income tax assets and other noncurrent 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 2020.

Increase in total liabilities: The increase was mainly due to increase in noncurrent liabilities.

Decrease in other equity: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2020.

• 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	2020	2019	Difference	%
Current Assets	580,949,248	355,118,125	225,831,123	64%
Long-term Investments (Note 1)	565,432,338	559,380,999	6,051,339	1%
Property, Plant and Equipment	1,511,784,556	1,310,900,634	200,883,922	15%
Right-of-use Assets	25,184,827	15,030,020	10,154,807	68%
Intangible Assets	21,733,597	16,271,444	5,462,153	34%
Other Assets (Note 2)	28,420,547	18,774,850	9,645,697	51%
Total Assets	2,733,505,113	2,275,476,072	458,029,041	20%
Current Liabilities	680,529,735	605,540,547	74,989,188	12%
Noncurrent Liabilities	203,318,122	48,525,401	154,792,721	319%
Total Liabilities	883,847,857	654,065,948	229,781,909	35%
Capital Stock	259,303,805	259,303,805	0	0%
Capital Surplus	56,347,243	56,339,709	7,534	0%
Retained Earnings	1,588,686,081	1,333,334,979	255,351,102	19%
Others	(54,679,873)	(27,568,369)	(27,111,504)	-98%
Total Equity	1,849,657,256	1,621,410,124	228,247,132	14%

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 right-of-use assets: The increase was mainly due to increase in leases of land.

Increase in intangible assets: The increase was mainly due to increase in technology license and patent.

Increase in other assets: The increase in other assets was mainly due to increase in deferred income tax assets and other noncurrent 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 2020.

Increase in total liabilities: The increase was mainly due to increase in noncurrent liabilities.

Decrease in other equity: The decrease was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2020.

• 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	2020	2019	Difference	%
Net Revenue	1,339,254,811	1,069,985,448	269,269,363	25%
Cost of Revenue	628,108,309	577,286,947	50,821,362	9%
Gross Profit before Realized (Unrealized) Gross Profit on Sales to Associates	711,146,502	492,698,501	218,448,001	44%
Realized (Unrealized) Gross Profit on Sales to Associates	(16,382)	3,395	(19,777)	-583%
Gross Profit	711,130,120	492,701,896	218,428,224	44%
Operating Expenses	145,056,549	119,504,582	25,551,967	21%
Other Operating Income and Expenses, Net	710,127	(496,224)	1,206,351	NM
Income from Operations	566,783,698	372,701,090	194,082,608	52%
Non-operating Income and Expenses	17,993,482	17,144,246	849,236	5%
Income before Income Tax	584,777,180	389,845,336	194,931,844	50%
Income Tax Expenses	66,619,098	44,501,527	22,117,571	50%
Net Income	518,158,082	345,343,809	172,814,273	50%
Other Comprehensive Loss, Net of Income Tax	(30,321,802)	(11,823,562)	(18,498,240)	-156%
Total Comprehensive Income for the Year	487,836,280	333,520,247	154,316,033	46%
Total Net Income Attributable to Shareholders of the Parent	517,885,387	345,263,668	172,621,719	50%
Total Comprehensive Income Attributable to Shareholders of the Parent	487,563,478	333,440,460	154,123,018	46%

● 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 2020, partially offset by the unfavorable impact of change in foreign exchange rate.

Increase in gross profit before realized (unrealized) gross profit on sales to associates and gross profit: The increase was mainly due to higher capacity utilization and continuing cost improvement in 2020, partially offset by an unfavorable exchange rate and dilution from 5-nanometer products.

Decrease in realized (unrealized) gross profit on sales to associates: The decrease was mainly due to higher sales to investees in the fourth quarter of 2020.

Increase in operating expenses: The increase was mainly due to higher research and development expenditures for advanced technology.

Increase in other operating income and expenses, net: The increase was mainly due to a net gain on disposal of property, plant and equipment in 2020 compared to a net loss on disposal of property, plant and equipment in 2019.

Increase in income from operations: The increase was mainly due to gross profit increased at a higher rate than the increase in operating expenses.

Increase in income before income tax: The increase was mainly due to higher income from operations.

Increase in income tax expenses, net income and total net income attributable to shareholders of the parent: The increase was mainly due to higher income before income tax in 2020.

Increase in other comprehensive loss, net of income tax: The increase was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2020.

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 2020.

● 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	2020	2019	Difference	%
Net Revenue	1,314,793,013	1,059,646,793	255,146,220	24%
Cost of Revenue	632,772,608	579,507,047	53,265,561	9%
Gross Profit before Realized (Unrealized) Gross Profit on Sales to Subsidiaries and Associates	682,020,405	480,139,746	201,880,659	42%
Realized (Unrealized) Gross Profit on Sales to Subsidiaries and Associates	(16,382)	3,395	(19,777)	-583%
Gross Profit	682,004,023	480,143,141	201,860,882	42%
Operating Expenses	139,285,510	114,067,919	25,217,591	22%
Other Operating Income and Expenses, Net	746,994	(151,230)	898,224	NM
Income from Operations	543,465,507	365,923,992	177,541,515	49%
Non-operating Income and Expenses	39,153,435	22,821,227	16,332,208	72%
Income before Income Tax	582,618,942	388,745,219	193,873,723	50%
Income Tax Expenses	64,733,555	43,481,551	21,252,004	49%
Net Income	517,885,387	345,263,668	172,621,719	50%
Other Comprehensive Loss, Net of Income Tax	(30,321,909)	(11,823,208)	(18,498,701)	-156%
Total Comprehensive Income for the Year	487,563,478	333,440,460	154,123,018	46%

● 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 2020, partially offset by the unfavorable impact of change in foreign exchange rate.

Increase in gross profit before realized (unrealized) gross profit on sales to subsidiaries and associates and gross profit: The increase was mainly due to higher capacity utilization and continuing cost improvement in 2020, partially offset by an unfavorable exchange rate and dilution from 5-nanometer products.

Decrease in realized (unrealized) gross profit on sales to subsidiaries and associates: The decrease was mainly due to higher sales to investees in the fourth quarter of 2020.

Increase in operating expenses: The increase was mainly due to higher research and development expenditures for advanced technology.

Increase in other operating income and expenses, net: The increase was mainly due to a net gain on disposal of property, plant and equipment in 2020 compared to a net loss on disposal of property, plant and equipment in 2019.

Increase in income from operations: The increase was mainly due to gross profit increased at a higher rate than the increase in operating expenses.

Increase in non-operating income and expenses: The increase was mainly due to higher share of profits of subsidiaries and associates in 2020.

Increase in income before income tax: The increase was mainly due to higher income from operations.

Increase in income tax expenses and net income: The increase was mainly due to higher income before income tax in 2020.

Increase in other comprehensive loss, net of income tax: The increase was mainly due to increase in currency exchange loss arising from translation of foreign operations in 2020.

Increase in total comprehensive income for the year: The increase was mainly due to higher net income in 2020.

● 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 12/31/2019	Net Cash Provided by Operating Activities in 2020	Net Cash Used in Investing Activities in 2020	Net Cash Used in Financing Activities in 2020	Effect of Exchange Rate Changes on Cash and Cash Equivalents in 2020	Cash Balance 12/31/2020	Remedy for Liquidity Shortfall	
						Investment Plan	Financing Plan
455,399,336	822,666,212	(505,781,714)	(88,615,087)	(23,498,100)	660,170,647	None	None

• Analysis of Cash Flow

NT\$822.7 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT\$505.8 billion net cash used in investing activities: primarily for capital expenditures.

NT\$88.6 billion net cash used in financing activities: mainly for cash dividend payment, repayment of corporate bonds and decrease in short-term loans, partially offset by issuance of corporate bonds.

• Remedial Actions for Liquidity Shortfall

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

• Cash Flow Projection for Next Year: Not applicable.

Unconsolidated

Unit: NT\$ thousands

Cash Balance 12/31/2019	Net Cash Provided by Operating Activities in 2020	Net Cash Used in Investing Activities in 2020	Net Cash Used in Financing Activities in 2020	Cash Balance 12/31/2020	Remedy for Liquidity Shortfall	
					Investment Plan	Financing Plan
141,450,698	779,610,148	(503,670,089)	(114,225,040)	303,165,717	None	None

• Analysis of Cash Flow

NT\$779.6 billion net cash generated by operating activities: mainly include net income, along with depreciation and amortization expenses.

NT\$503.7 billion net cash used in investing activities: primarily for capital expenditures.

NT\$114.2 billion net cash used in financing activities: mainly for cash dividend payment, partially offset by issuance of corporate bonds.

• Remedial Actions for Liquidity Shortfall

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

• Cash Flow Projection for Next Year: Not applicable.

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 2020 and 2019	Actual Use of Capital	
			2020	2019
Production Facilities, R&D and Production Equipment	Cash flow generated from operations and issuance of corporate bonds	952,577,255	496,152,977	456,424,278
Others	Cash flow generated from operations	15,083,617	11,085,745	3,997,872
Total		967,660,872	507,238,722	460,422,150

Based on capital expenditures listed above, TSMC's annual production capacity increased by approximately 0.7 million 12-inch equivalent wafers in 2020.

6.2.5 Long-term Equity Investment Policy and Results

TSMC's long-term equity investments accounted for using equity method were all made for strategic purposes. In 2020, the gains from these investments amounted to NT\$3,592,818 thousand on a consolidated basis, increasing from the previous year mainly due to increases in product demand and the mass production of new products. In the future, TSMC's long-term equity investments accounted for using 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 the Company identify and manage economic risks. The risk management organization periodically briefs the Audit Committee on the ever-changing risk environment facing TSMC, the key points of the Company's enterprise risk management, 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 actions to be taken.

TSMC and its subsidiaries are committed to proactively and cost effectively integrating and managing strategic, operational, financial and hazardous risks that represent potential negative consequences to operations and financial results. TSMC operates an enterprise risk management (ERM) program based on both its corporate vision and its long-term, sustainable responsibility to both industry and society. ERM seeks to provide the appropriate management of risks on behalf of all stakeholders. The Company maintains a risk map that assesses likelihood and impact severity of risk events on the Company's operation, and is used to identify and prioritize risk controls and implement various controls and treatment strategies in response to risks as they are identified.

Scope of Risk Management

Strategic Perspective

- Regulatory change and compliance
- Government policies
- Changes in technology and industry
- Technology development and competition
- Demand and capacity expansion

Operational Perspective

- Sales and purchasing concentration
- Information security
- Intellectual property rights

- Recruitment of qualified personnel
- Corporate image

Financial Perspective

- Interest rate, foreign exchange, inflation, deflation and taxation
- External financing
- High-risk and/or highly leveraged investments; financial derivative transactions
- Strategic investments

Hazardous Events

- Earthquakes and natural hazards
- Fire or chemical spills
- Climate change
- Utility supply

Enterprise Risk Management Framework



To mitigate the operational impacts of crisis events, ERM conducts pre-crisis risk assessment and identifies feasible strategies for crisis prevention. Response procedures and recovery plans are established corresponding to different scenarios. For specific severe crisis events involving multiple TSMC manufacturing sites, the cross-functional central crisis command center composed of operations and support

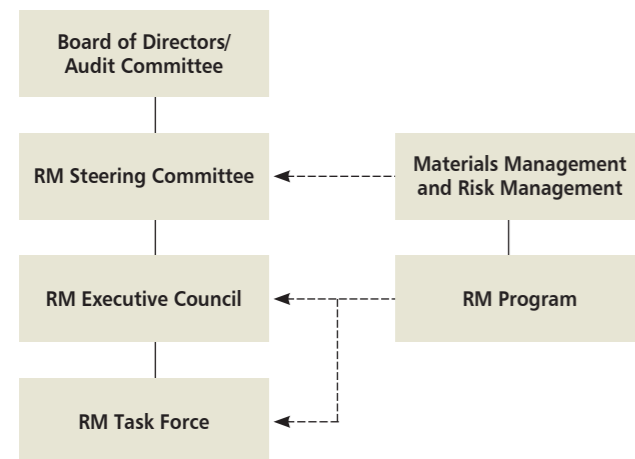
functions is responsible for giving directions and internal coordination to speed up response time and proactively communicate with stakeholders. To raise risk awareness and strengthen risk management culture in TSMC, RM task forces have been formed to enhance risk assessment and conduct crisis response 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 from 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 2020.

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 Chart

TSMC's risk management organization reports annually to the Audit Committee on the risk environment TSMC faces, the key points of enterprise risk management, and risk assessment and mitigation efforts. The Audit Committee Chairperson also reports to the Board on these discussions and actions.



Organization Functions

RM Steering Committee

- Consists of functional heads (with internal audit head sitting as an observer)
- Reports to the Audit Committee
- Reviews risk control progress
- Identifies and approves prioritization of risk controls

RM Executive Council

- Consists of representatives from each function
- Determines and implements cost-effective risk controls
- Improves risk management transparency and how risks are managed

RM Program

- Supports RM task forces to enhance effective risk controls
- Coordinates and facilitates RM Executive Council on risk management activities
- Consolidates ERM reports and provides updates to the RM Steering Committee

RM Task Force

- Identifies potential scenarios and business impact
- Determines risk mitigation actions in accordance with risk scenarios
- Establishes crisis management procedures and conducts exercises

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 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 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 15-17 of this annual report.

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 electronics, 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 and current 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. If the ASP of end use applications continues decreasing, the pricing pressure on components produced by TSMC may lead to a reduction of 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.

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 these new and aggressive competitors on technology, manufacturing capacity, product quality and customer satisfaction, it risks losing customers to these new contenders.

Risks Associated with Changes in the Government Policies and Regulatory Environment

TSMC management closely monitors all domestic and foreign government policies and regulations that might impact its business and financial condition. During 2020 and as of the date of this Annual Report, there were no government 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 forecast for its products and services to manage its overall capacity. Based on market demand forecasts, TSMC has continued to add capacity to meet market needs for its products and services. Currently, TSMC's capacity expansion plans include installing and increasing production capacity, mainly for 5-nanometer and 3-nanometer nodes, expanding its production facilities in the Southern Taiwan Science Park and building a 300mm wafer fab in Arizona.

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 subsequent demand 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 Sales Concentration

Over the years, TSMC's customer profile and the nature of the Company's customers' business have changed dramatically. While the Company generates revenue from hundreds of customers worldwide, TSMC's ten largest customers in 2018, 2019 and 2020 accounted for approximately 68%, 71% and 74% of TSMC's net revenue in the respective year. TSMC's largest customer in 2018, 2019 and 2020 accounted for approximately 22%, 23% and 25% of the Company's net revenue in the respective year. TSMC's second largest customer

for each particular year accounted for less than 10% of its net revenue in 2018, 14% and 12% of its net revenue in 2019 and 2020, respectively.

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 of 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 the Company's 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 designs 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, industry consolidation, changes in applicable regulatory restrictions, product designs, manufacturing sourcing policies or practices of these customers, or the timing of customer or distributor inventory adjustments, or change 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 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. 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 the Company 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. In addition, 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 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 management, 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 critical suppliers meet standards in labor, ethics, ESH (Environmental, Safety and Health) and BCP (Business Continuity Plan). Onsite audits are conducted regularly to empower these 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 as long as six months or more. To better manage its supply chain, the Company has implemented various business models and risk management contingencies with suppliers to shorten the procurement lead time. Further, growing complexities, especially in advanced lithographic technologies, may delay the timely availability of the equipment and parts needed to exploit time-sensitive business opportunities and also increase the market price for such equipment and parts. 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 IT Security

Even though TSMC has established a comprehensive internet and computing security network, it 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 by any third party attempting to gain unauthorized access to its internal network systems, to sabotage its operations and goodwill or otherwise. 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. 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. Hackers behind these cyberattacks may also attempt to steal TSMC trade secrets and other sensitive information, such as proprietary information of its customers and other stakeholders and personal information of its employees.

Malicious hackers may also try to introduce computer viruses, corrupted software or ransomware into TSMC's network systems to disrupt our operations, blackmail the Company to regain control of our computing systems, or spy on it for sensitive information. These attacks may result in TSMC

having to pay damages for its delayed or disrupted orders or incur significant expenses in implementing remedial and improvement measures to 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, among other things, leakage of employee, customer or third-party information which the company has an obligation to keep confidential.

In the past, TSMC experienced and may in the future be subject to attack by malicious software contained in the equipment the Company purchases and installs. TSMC has implemented and continually updated rigorous cybersecurity measures to prevent and minimize harm caused by such attacks. These measures include advanced virus scanning tools to prevent a fab from installing virus-infected tools, strengthening firewall and network controls to prevent computer viruses from spreading among tools and fabs, and the installation of anti-virus and advanced malware detection solutions across our computer devices. In addition, TSMC has deployed secure PCs and laptops, developed a public cloud security policy, introduced new technology for data protection, and improved email phishing detection. TSMC also established an integrated and automatic security operation platform, and it regularly perform employee awareness testing and conduct external security risk assessments. 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 the Company and its affiliates worldwide with whom it needs to share highly sensitive and confidential information to enable them to provide the relevant services. Despite that the Company requires the third-party service providers to comply with the confidentiality and/or internet security requirements in its service agreements with them, there is no assurance that each of them will strictly fulfill such obligations, or at all. The on-site network systems of and the off-site cloud computing networks such as servers maintained by such service providers and/or its contractors are also subject to risks associated with 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 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 as a result.

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 we actively enforce and protect our intellectual property rights, there can be no assurance that its efforts will be adequate to prevent the misappropriation or improper use of its proprietary technologies, software, trade secrets or know-how. Also, the Company cannot assure you that, as its business or business models expand into new areas, it will be able to develop independently the technologies, patents, software, trade secrets or know-how necessary to conduct its business or that it can do so without unknowingly infringing the intellectual property rights of others. As a result, TSMC 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 TSMC 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.

TSMC 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 in foreign jurisdictions, 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 Company's 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 TSMC 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.

TSMC has taken related measures to minimize potential loss of shareholder value arising from intellectual property claims and litigation filed against the Company. 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, we have 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, TSMC could incur significant costs in the defense thereof or could suffer adverse effects on its operations. TSMC 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 TSMC to potential significant legal liability.

Currently, TSMC's material legal proceedings are as follows:

On September 28, 2017, TSMC was contacted by the European Commission (the "Commission"), which asked us for information and documents concerning alleged anti-competitive practices in relation to semiconductor sales.

We cooperated continuously with the Commission to provide the requested information and documents. The Commission subsequently decided to close the investigation in May 2020.

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

Risks Associated with Mergers and Acquisitions

In 2020 and as of the date of this annual report, TSMC did not conduct any merger or acquisition.

Risks Associated with Recruiting Quality Personnel

TSMC relies on the continued services and contributions 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, 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, TSMC encourages job rotation and implements on-the-job training and certification system. In this way, employees can learn and enhance their work efficiency in the actual work field. Moreover, TSMC creates multiple recruitment channels and continues to hire top-notch talents from Taiwan and overseas. TSMC recruits diversified and various special professional talents, and at the same time strengthen industry-academic cooperation. Grasp outstanding talents earlier can help TSMC recruit them in the future.

Future R&D Plans and Expected R&D Spending

For additional details, see "5.2.7 Future R&D Plans" on page 86-87 of this annual report.

Changes in Corporate Reputation and Impact on Company's Crisis Management

TSMC has established an excellent corporate reputation around the world 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 of CSR.

In 2020, 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 Taiwan Institute for Sustainable Energy 2020 Taiwan Corporate Sustainability Awards' Most Prestigious Sustainability Award, Platinum Medal For Sustainability Report, Sustainable Water Management Award, Climate Leader Award, and Supply Chain Management 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* 2020 World's Most Admired Companies and the 2020 Global 500; the R.O.C. Ministry of Economic Affairs Industrial Development Bureau's Green Factory Label and 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 2020; ranked No.1 in the 2020 Carbon Clean 200 list by *Corporate Knights* and *As You Sow*; Membership in the *Wall Street Journal's* 100 Most Sustainably Managed Companies; and named Most Impactful Pioneer in the 2020 RE100 Leadership Awards. In addition, TSMC was selected as a part of the Dow Jones Sustainability Indices for the 20th consecutive year.

TSMC adheres to its vision of uplifting society, and applies technology and innovation to help humanity overcome many challenges. 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 2020, the Corporate Social Responsibility Executive Committee, led by Chairman Dr. Mark Liu, held the first "TSMC CSR AWARD," taking tangible action to encourage all employees to propose ideas for sustainability in the five strategic directions of corporate social responsibility, including green manufacturing, building a responsible supply chain, creating an inclusive workplace, talent development, and caring for the underprivileged. The award further motivates TSMC colleagues to think innovatively about their work, implement corporate social responsibility, and build further on the Company's positive corporate reputation.

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 holds regular exercises for crisis scenarios to ensure that crisis response procedures are comprehensive.

TSMC holds regular 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

During 2020 and as of the date of this Annual Report, there were no such risks for TSMC.

6.3.4 Financial Risks

Economic Risks

• Interest Rate Fluctuation

TSMC 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 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 securities with investment grade 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 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.

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 the future cash flows and the carrying amount.

Certain of TSMC's fixed income investments and short-term debt are primarily based on the London Interbank Offered Rate (LIBOR), which is expected to be replaced by other benchmark rates after 2021. TSMC cannot predict the consequences and timing of these developments, or whether such a transition might cause a reduction in its interest income and/or an increase in its interest expense.

• 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 NT dollars, 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 2020 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 TSMC's 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) and of any cash dividends paid in NT dollar on TSMC's common shares represented by ADSs.

• Inflation

In 2020 and as of the date of this annual report, inflation had no material impact on TSMC's operations, or the business operations of its customers and suppliers.

• 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.

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

Risks Associated with External Financing

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

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

In 2020 and as of the date of this annual report, TSMC made no high-risk or highly leveraged financial investments.

In 2020 and as of the date of this annual report, TSMC has provided guarantees to TSMC Global, a wholly-owned subsidiary of TSMC, for its issuances of US dollar-denominated senior unsecured bonds in amounts not to exceed US\$7.5 billion in total. Among which, US\$3 billion senior unsecured bonds were already issued in September 2020. Since 2014, TSMC has provided a guarantee of no more than US\$83.21 million to TSMC North America, a wholly owned subsidiary of TSMC, for its obligation to an office leasing contract. Since 2020, TSMC Japan Limited has provided a guarantee of no more than JPY1,320 million to TSMC Design Technology Japan, Inc., a wholly-owned subsidiary of TSMC, for its obligation to an office leasing contract.

As of February 28, 2021, there were RMB 4.8 billion outstanding intercompany loans between TSMC's subsidiaries, and US\$3.1 billion outstanding intercompany loans between TSMC and its subsidiary. All intercompany loans were in compliance with relevant rules and regulations.

All derivative financial transactions entered in 2020 by TSMC were strictly for hedging and not for trading or speculative purposes. For more transaction information and risk assessment, please refer to Note 7, Note 10, and Note 32 of the annual report section (II), Financial Statements.

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 Taiwan Securities and Futures Bureau. 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 and Utility Supply Interruption or Shortage Risks

The frequency and severity of disruptive events, including damaging earthquakes, other natural disasters and severe weather, have been increasing in part due to climate change or systemic regional geological changes. TSMC has manufacturing and other operations in locations subject to natural disasters such as flooding, earthquakes, tsunamis, typhoons and droughts that may cause interruptions or shortages in the supply of utilities, such as water and electricity, which in turn could disrupt operations. For example, in 2021, Taiwan has faced one of the worst droughts in decades. Government restrictions on supply and usage of water by industrial companies such as TSMC in response to such severe weather events could also disrupt our 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 in electricity or water, or interruptions to the Company's operations.

Thus, if one or more natural disasters that 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 Company's manufacturing capacity and cause the loss of important customers and thereby have an adverse and material impact on its operational and financial 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 TSMC 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 Company 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.

Future expansions of TSMC's operations in the R.O.C. could be limited by shortages in water and electricity, and the limited availability of commercial-use land.

The ongoing COVID-19 pandemic may materially adversely affect TSMC 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 customers' demand, which may harm TSMC's business with customers and subject TSMC to risks of legal disputes; and (3) potential production delays for TSMC's products due to forced factory or office closures or partial operation.

The Company has implemented various measures to address the abovementioned risks, including but not limited to, health management of TSMC's employees, management of production inventory, supply chain risk management, and capacity management for demand changes. TSMC has formed an "Epidemic Prevention Committee" to identify, implement and monitor such actions as required by the dynamic exigencies arising from the pandemic. As of the date of this annual report, TSMC's current business and results of operations have not been materially affected by the pandemic, partially due to such trends as work-from-home and distance learning emerged to help accelerate the digital transformation. However, there is no certainty that the measures the Company has taken will be sufficient to mitigate the risks posed by COVID-19, and TSMC's ability to perform critical functions

and to meet customers' needs could be materially adversely affected.

TSMC maintains a comprehensive risk management system dedicated to the safety of people, 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 system) and ISO 45001 certified (occupational health and safety management system). 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 plans, which include periodic risk assessment, risk mitigation, and implementation through 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 revise it 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 business continuity procedures were further enhanced through the compliance with ISO 22301.

TSMC and many of its suppliers use combustible 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 the Company maintains many overlapping risk prevention and protection systems, as well as fire and casualty insurance, TSMC's risk management and insurance coverage may not always be sufficient to cover all of the Company's 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 Company's manufacturing capacity leading to the loss of important sales and customers and as a negative impact on TSMC's financial performance. In addition to periodic fire-protection inspections and firefighting drills, the Company 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, and its failure to comply with any information and document sharing requests from the relevant authorities in a timely manner could result in:

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

Complying with applicable laws and regulations, such as environmental and climate related laws and regulations, could also require TSMC, among other things, to do the following: (1) purchase, use or install remedial equipment; (2) implement remedial programs such as climate change mitigation programs; (3) modify its product designs and manufacturing processes, or incur other significant expenses such as obtaining 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 controlled 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 131-132 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 Major Shareholders Who Own 10% or More of TSMC's Total Outstanding Shares

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

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

Risks of Trade Policies

As TSMC's revenue is primarily derived from sales to major economies in the world (please refer to "2.2.4 TSMC Position, Differentiation and Strategy" on page 15-17 of this annual report), any changes in the trade policies (such as the increase of tariffs on certain products, the implementation of import and export controls, and the adoption of other trade barriers) of such major economies can affect the sales of TSMC or its customers and thereby affect TSMC's operating results. 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.

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.

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 2020 and as of the date of this annual report, TSMC's management was not aware of any other risk that could have a potentially material impact on the financial status of the Company.

7. Corporate Social Responsibility



> A library collecting accumulated knowledge (Left)



> Photomasks storing the power of innovation (Right)

7.1 Overview

The Company's four core values of integrity, commitment, innovation, and customer trust remain as the core values of TSMC's culture. As the world's leading semiconductor foundry and a trusted technology and capacity provider, TSMC seeks, in addition to continued success in its business endeavors, to fulfill its ESG (Environmental, Social and Governance) management. For TSMC these responsibilities fall into three primary missions: acting with integrity, strengthening environmental protection and caring for the disadvantaged. For each of these missions the Company has established concrete, measurable long-term goals, as well as corresponding action plans to review and correct periodically, consistently creating value for all stakeholders.

Guidance for the Implementation of ESG

TSMC's "ESG Policy" is the overarching guiding principle for sustainable development. The "ESG Matrix" set by the Company's founder Dr. Morris Chang, clearly defines the scope of TSMC'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 responsibilities.

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

In compliance with the vision and missions of TSMC's ESG Policy, the ESG Steering Committee serves as the highest-level ESG decision-making center within the Company and is committed to aligning TSMC more closely with international sustainability trends. TSMC's Chairman chairs the ESG Steering Committee, and the Chairperson of the ESG Committee serves as Executive Secretary. Together with senior executives from a wide variety of functions, they survey the Company's core operating capabilities, set the medium- to long-term strategic direction for ESG, and draft the blueprint to link the Company's core competencies with the UN sustainable development goals (SDGs).

The Company's ESG Committee serves as a cross-departmental communication platform. Through quarterly meetings and issue-based discussions by cross-organizational teams, the committee members jointly set the Company's ESG strategies, identify key issues for the year, draft ESG-related budgets for their organizations and coordinate resource deployment, as well as plan and carry out annual projects. The Committee pursues sustainability objectives of interest to all stakeholders and ensures ESG strategies are implemented effectively in the Company's daily operations.

The Chairperson of the ESG Committee reports quarterly to the Board of Directors on implementation results and the work planned in the future. In 2020, TSMC focused on strengthening renewable energy adoption, driving in-house reuse rate of resources to realize circular economics, applying circular economy, and launching the TSMC Urban Greenery Project. To build a sustainable supply chain, the Company implemented a signed supplier code of conduct, performed supplier risk assessments and launched Supply Online 360, a Global responsible supply chain management platform, to extend TSMC's high operational standards. The Company also created an inclusive workplace by piloting a "Psychological Safety" program to enable open communication and develop semiconductor talent and support through STEM (science, technology, engineering and mathematics) education. To have a positive social impact, the TSMC Education and Culture Foundation and the TSMC Charity Foundation also actively support and promote youth development, culture and art, and care for the disadvantaged.

Stakeholder Engagement

TSMC respects all stakeholder rights. To understand the level of interest in sustainability issues, TSMC uses multiple systematic channels to communicate with stakeholders, 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 new Supply Chain Worker Grievance Channel, established in 2020. TSMC has conducted three studies focused on identification, prioritization and validation with regard to these issues.

In 2020, the TSMC ESG mailbox received 445 valid emails on subjects ranging from corporate governance, innovation and services, to supply chain management, green manufacturing, inclusive workplace, and social investments. Submissions were primarily regarding requests for inquiries on operations, proposals for donations and collaborations, opinion and feedback from the public and visits. TSMC responded through direct action from related departments and timely replies from the public relations department, supporting communication with the public as well as positive development in society.

Stakeholders and Communication Channels in 2020

Stakeholders	Communication Channels
Employees	<ul style="list-style-type: none"> • 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 representatives • 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 voice channels, such as Immediate Response System, Employee Opinion Box, Wellness Center, wellness website, Employee PIP Opinion Dedicated Line, etc. • Ombudsman System • Audit Committee Whistleblower System • EWC event questionnaire survey • The biennial "Employee Opinion Survey on Company Core Values"
Shareholders/Investors	<ul style="list-style-type: none"> • 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, CSR reports, 20-F filings to US SEC • Material announcements to Taiwan Stock Exchange, and corporate press releases on the Company's website
Customers	<ul style="list-style-type: none"> • Customer satisfaction survey • Customer meetings • Customer audits • Business and technology assessment • Email responses to the issues that customers are concerned
Suppliers/Contractors	<ul style="list-style-type: none"> • Supplier meetings • Supply Chain Security Association Meetings • Supply Chain Management Forum • Responsible Supply Chain Forum • 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 and Supplier Survey on Ethics • Supply Chain Worker Grievance Channel
Government	<ul style="list-style-type: none"> • 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

(Continued)

Stakeholders	Communication Channels
Society	<ul style="list-style-type: none"> •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 •Regular visits to National Museum of Science, Hsinchu Veterans Home, St. Teresa Children Center, Jacana Ecology Education Park, remote schools and TSMC ecological parks to provide volunteer services •Annual volunteer activities in collaboration with TSMC fabs and divisions •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 Society (Note)
Customer Service	Customers' Service and Satisfaction, Customer Trust, Customer Confidentiality, RBA and its Code of Conduct	Customers
Information Technology and Materials & Risk Management	Information Security, Materials and Supply Chain Risk Management, Supplier Management, Conflict Minerals, RBA and its Code of Conduct; Risk Management, Crisis Management, Emergency Response and Action Plan	Employees Shareholders/Investors Customers Suppliers/Contractors Government Society
Quality and Reliability	Product Quality and Reliability, Product Recall Mechanism	Customers Suppliers/Contractors
Research and Development	Innovation Management, Green Products	Employees Customers Suppliers/Contractors
Business Development	Shaping an Energy-efficient Technology Roadmap, Building Alliance with Customers to Foster Smarter, 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
Investor Relations	Resolving Issues of Stakeholder Concern, Establishing Trusting Long-term Relationships, Effective Two-way Communication, Annual Report Production	Shareholders/Investors
Operations	Operational Eco-efficiency, Pollution Prevention, Water Resource Risk Management, Green Manufacturing	Customers Shareholders/Investors Suppliers/Contractors
Environment, Safety and Health	Environmental Policy and Management System, Climate Change Mitigation and Adaption, Pollution Prevention, Energy Consumption Efficiency, Carbon Emissions and Carbon Rights Management, Product Environmental Responsibility, Response Mechanism for Environmental Issues, Environmental Spending, Green Supply Chain, Policy and Management Systems for Occupational Health and Safety, Workplace Health and Safety, Occupational Disease Prevention and Health Promotion, Communication of ESH Regulations	Employees Shareholders/Investors Customers Suppliers/Contractors Government Society
Human Resources	Talent Attraction and Retention, Employees' Physical and Mental Well-being and Work-life Balance, Labor-management Relations and Employee Engagement, Labor Rights, Training and Development, Mobility, RBA and its Code of Conduct	Employees
TSMC Education and Culture Foundation 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 believes that companies exist to bring positive change to the world. The Company knows that the future is filled with challenges but it will always stay true to its cornerstones of – integrity and responsible operations. TSMC has chosen nine major United Nations' Sustainable Development Goals (SDGs), drafted 2030 long-term goals, and implemented sustainable approaches accordingly. With Goal 17 of the SDG – global partnerships – at the core, TSMC collaborates with stakeholders inside and outside the Company as well as with business partners along the value chain. Through participation, cooperation, and dialogue, TSMC actively creates sustainable values in the governance/economy, the environment and society for its stakeholders, and has become the only semiconductor company chosen for the Dow Jones Sustainability World Indices over the past 20 consecutive years.

2020 ESG Awards and Ratings

Category	Organization	Awards and Ratings
Overall ESG	Dow Jones Sustainability Indices (DJSI)	•Dow Jones Sustainability World Index for the 20 th consecutive year •Dow Jones Sustainability Emerging Markets Index
	RobecoSAM (S&P Global)	•The Sustainability Yearbook Award 2020 – Gold Class
	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	•"Top Rated" within the Semiconductor Industry
	FTSE4Good Index	•FTSE4Good Emerging Index component •FTSE4Good All-World Index component •FTSE4Good TIP Taiwan ESG Index component
	RE100	•RE100 Leadership Awards 2020 – Most Impactful Pioneer
	Wall Street Journal	•The 100 Most Sustainably Managed Companies in the World
	Corporate Knights	•Global 100 Most Sustainable Corporations
	World Benchmarking Alliance (WBA)	•SDG 2000 – The 2,000 Most Influential Companies
	CommonWealth Magazine	•Corporate Social Responsibility Award – Large cap – 1 st Place
	Taiwan Institute of Sustainable Energy	•The Most Prestigious Sustainability Awards – Top Ten Domestic Corporates – for the 5 th consecutive year •Taiwan Top 50 Corporate Responsibility Report Awards – IT & IC Manufacturing – Platinum Award •English Report – Platinum Award •Sustainable Water Management Awards •Climate Leadership Awards •Supply Chain Management Awards
	Economy, Governance	Institutional Investor Magazine
IFI Claims		•2020 Top 50 US Patent Assignees
Institute of Electrical and Electronics Engineers (IEEE)		•2021 IEEE Corporate Innovation Award
Forbes		•Global 2000
FORTUNE		•2020 World's Most Admired Companies •Fortune Global 500
Brand Finance		•Tech 100 2020
Asiamoney		•Most Outstanding Company in Taiwan – Semiconductors & Semiconductor Equipment Sector
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 6 th consecutive year
PricewaterhouseCoopers		•Global Top 100 Companies by market capitalization for the 8 th consecutive year
R.O.C. Ministry of Economic Affairs Intellectual Property Office		•Ranked No. 1 in Taiwan patent applications for the 5 th consecutive year
Corporate Synergy Development Center		•Taiwan Continuous Improvement Award – Gold Tower Award – Advanced Packaging Technology and Service, Intelligent Manufacturing Center, Fab 14A, Fab 15B •Taiwan Continuous Improvement Award – Silver Tower Award – Fab 3 •Taiwan Continuous Improvement Award – Best Improvement Innovation Award – Advanced Packaging Technology and Service
Environment, Safety and Health	Corporate Knights & As You Sow	•2020 Carbon Clean 200™ List – 1 st Place
	CDP	•Climate Change – A- •Water Security – A
	Alliance for Water Stewardship (AWS)	•"Platinum" class certification – Fab 15A, Fab 15B
	U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) certification	•"Gold" class certification – Fab 15 P7, Fab 18 P1 Manufacturing Facility
	R.O.C. Industrial Development Bureau, Ministry of Economic Affairs	•Excellence in Voluntary Carbon Offsets Award – Fab 14B, Fab 15A •Green Factory – Fab 14 P7
Society	Cheers	•Top 10 Most Admired Companies to Young Generations
	Forbes	•World's Best Employers

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 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 TOSHMS (Taiwan Occupational Safety and Health Management System) certified since 2009. The International Organization for Standardization (ISO) released the latest version of ISO 45001: 2018 to replace OHSAS 18001 in March 2018. All TSMC fabs in Taiwan received ISO 45001: 2018 certification in August 2019. All TSMC subsidiaries obtained certification in 2020.

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, 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 manufacturing facilities have been QC 080000 certified 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 its related substances restriction standards.

In addition, TSMC started a project for reducing usage of hazardous substance N-methylpyrrolidinone (NMP) in 2016. NMP unit product usage has been reduced 59% by 2020 comparing to 2016, and the project will continue promoting for further reduction.

Since 2011, TSMC has adopted the ISO 50001 Energy Management System for the continuous improvement in energy conservation. In 2019, all TSMC fabs in Taiwan received ISO 50001 Energy Management System certification, and all TSMC overseas subsidiaries scheduled to receive the certification in 2019 have had their certifications postponed to 2021 due to the impact of 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. 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 mitigate 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 counseling.

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 promotion of self-management aims at improving 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 improve the sustainability of the Company's supply chain regarding ESH-related issues, such as environmental protection, compliance of safety and hygiene codes, hazardous substance management, fire protection, and mitigation of natural disaster. The Company not only performs ESH audits at its suppliers' manufacturing sites, but also proactively assists them to improve ESH performance.

In addition, TSMC monitors potential climate-change related risks in the supply chain. 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.

In recent years, TSMC suppliers have made excellent progress in procedure establishment and implementation for pollution control and safety management. To take it a step further, the Company has given greater attention to occupational hygiene issues directly related to labor health. In 2017, TSMC and the Ministry of Labor Occupational Safety and Health Administration (OHSA) jointly launched the "Semiconductor Supply Chain Safety and Health Promotion Project". TSMC also invited suppliers to participate in the project. As engaged by OSHA, a professional team has taken on the responsibility of providing consultation through document review and onsite inspection to participating suppliers on management procedures and hardware setup in order to improve the working environment and labor health management.

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 risk and opportunities, and further established metrics and target management based on the identification results.

Management Structure of TSMC Climate-related Risk and Opportunity

Category	Management Strategy and Actions
Governance	<ul style="list-style-type: none"> Board of Directors periodically reviews climate change related risk and opportunity ESG Steering Committee led by Chairman is the Company's top organization that deals with climate change management. The chairperson of ESG Committee serves as the Executive Secretary. ESG Steering Committee reviews TSMC's climate change strategies and goals every six months and reports to the Board of Directors. (The Corporate Social Responsibility Executive Committee has been renamed as ESG Steering Committee in 2021. The frequency of regular meetings has been increased from semi-annual to quarterly.) The Energy and Carbon Reduction Committee led by the senior vice presidents of Fab operations is the organization that deals with action implementation of climate change risk and opportunity in TSMC. This committee develops management plans, reviews the execution status and discusses future plans on a quarterly basis.
Strategy	<ul style="list-style-type: none"> 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 and net-zero emission
Risk Management	<ul style="list-style-type: none"> Use of 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	<ul style="list-style-type: none"> 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	2020 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 1.3 GW (Gigawatts) •Purchased 1,230 GWh in renewable energy, renewable energy certificates (REC), and carbon credit to offset 100% of the electricity carbon emissions of our overseas subsidiaries, global offices and offices.
Trend of net zero emission	•Increased cost of installation and operation for carbon reduction facilities •Increased cost of purchasing carbon offset products	Win public recognition and Carbon emission offset cooperation	Accumulate carbon credits in preparation for future Carbon emission offset	•Passed the application for Fluorinated-Greenhouse Gas and Nitrous Oxide reduction offset project reward •TSMC Global Offices used Carbon Credit to achieve Net Zero Emission
		Develop low-carbon product service to upgrade product energy efficiency	Satisfy customers' needs of energy-saving products and increase revenue	•Involved the production of 5nm energy saving production
Commitment of EIA (Environmental Impact Assessment)	The expansion of advanced technologies would be hampered by the lack of success in obtaining renewable energy and reclaimed water	Use reclaimed water	Smooth construction of advanced production lines	•Started the construction of TSMC reclaimed water plant in Southern Taiwan Science Park
Uncertainty of development of new energy saving technology	Raising of electricity consumption of advance technology production line leads to increase of production cost	Construct green buildings	Lower utility costs	•Applied and received 2 green building certifications
Impact on the Company's reputation	Unable to satisfy the expectations of stakeholders, impacting the Company's reputation	Increase company's reputation	Upgrade the performance of stakeholders' sustainability ranking	•Leads the industry as the only semiconductor company chosen for the Dow Jones Sustainability Indices (DJSI) for 20 consecutive years •TSMC ranked as one of CDP Change Climate and Water Security Leaders
Flood Drought	Production affected, causing financial losses and a decrease in revenue	Increase resilience against natural disasters	Strengthen climate resilience, lower risk of operations disruption, and reduce potential losses	•Raised the building base of Fab 18 Phase 2 two meters higher •Fab 18 Phase 3 is committed to using and developing reclaimed water •Established a comprehensive water monitoring system
Increasing of premium of natural disaster	Increase in operation cost			
Rising temperatures	Increase in electricity consumption, cost, and carbon emissions	Drive low-carbon green manufacturing	Save energy and cut cost	•Conserved 500 GWh of electricity through energy-saving projects

Greenhouse Gas (GHG) Emission Reduction and Energy Management

TSMC actively participates in the World Semiconductor Council (WSC) in its efforts to establish a global voluntary PFC (perfluorinated compounds) emissions reduction goal for the decade of 2011 to 2020, and has incorporated past experience to develop best practices. The implementation of best practices has been adopted by the WSC as a major element of the 2020 goal. 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 TSMC's strategy to reduce GHG emissions. Since 2005, TSMC participated the international organization "Carbon Disclosure Program, CDP" to publicly disclose climate change related information every year. In 2020, TSMC was recognized by CDP as A- and A leadership level for climate change and water security respectively.

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 senior vice presidents which 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, TSMC 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. TSMC has accumulated 1.7 billion kilowatt hours (kWh) power conservation since 2016.

From 2015 to 2017, TSMC voluntarily participated in the Republic of China Ministry of Economic Affairs' green power purchasing program for three consecutive years and became the largest buyer in Taiwan, purchasing 400 million kilowatt hours 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 is first committed to achieving a target of 25% renewable energy for fabs and 100% renewable energy for non-fab facilities 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 2020 again. TSMC also used carbon credits to offset Carbon emissions of natural gas consumption in kitchens, achieving the milestone of net zero emission for TSMC global offices. Although development of renewable energy in Taiwan is in an early stage, TSMC established a renewable energy task force and continued to communicate closely with government through the Association of Science Park Industries and Taiwan Semiconductor Industry Association. The Company made recommendations to the government in the hope that the collaboration could speed up renewable energy development in Taiwan. The recommendations included expanding the development of offshore wind power and increasing supply of renewable energy trading platform. TSMC also continued to find renewable energy. By the end of 2020, the total installation capacity of renewable energy contracted reached 1.3GW (Gigawatts). The renewable energy will be provided to TSMC gradually after related business process being completed. This is a clear manifestation of the Company's active support of the United Nations Sustainable Development Goals (SDGs).

TSMC became the first semiconductor company to join RE100 (Global Renewable Energy Initiative) in July 2020 and pledged that power consumption of all the Company's manufacturing plants and offices will be 100% supplied from renewable energy by 2050. TSMC was further awarded the first RE100 Leadership Award - the Most Impactful Pioneer in September

2020 for being the first to purchase large amounts of renewable electricity in Taiwan and taking practical action to support green energy.

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 around the clock 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. 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. TSMC 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 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 experiences 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 continue enhancing 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 by the end of the year, making TSMC the first semiconductor enterprise to receive AWS platinum level certification in the world. In 2020, Fab 15A and Fab 15B, located in Central Taiwan Science Park, passed third party verification audit and obtained AWS platinum level certification simultaneously.

Waste Management and Recycling

The Company has a designated unit responsible for waste recycling and disposal. To meet the goal of sustainable resource utilization, TSMC's priorities are: process waste reduction, onsite regeneration and reuse, and offsite recycling. The last option consists of treatment or disposal. To achieve raw material reduction, resource recycling and the goal of zero waste, for example, the Company built an in-house waste sulfuric acid pre-treatment system, as electronic grade sulfuric acid can be used as a waste water treatment agent after the wafer fabrication process. In order to track waste flow and ensure that all waste is treated or recycled legally and properly, TSMC carefully selects waste disposal and recycling contractors. All recycling contractors must report their recycled product sales monthly. The Company performs regular onsite audits to check factory status and review the reported data with actual reuse and recycling data to assure that the recycled product is flowing downstream properly. TSMC checks their licenses and on-site operational statuses, and also takes proactive steps to strengthen vendor auditing effectiveness. For example, all waste transportation contractors have been asked and agreed to join the GPS Satellite Fleet so that the cleanup transportation routes and abnormal stays for all trucks can be traced. In addition, all waste recycling and treatment vendors have installed closed-circuit TV systems at operating sites to monitor and audit waste handling. Meanwhile, TSMC also conducts an ongoing survey of recycled product tracking, actions taken to ensure lawful and proper waste recycling and treatment.

In 2020, TSMC's fabs in Taiwan achieved a 95% waste recycling rate for the sixth consecutive year, with a landfill rate below 1% for the eleventh consecutive year. 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. TSMC also set up onsite resource activation facilities to convert waste resources produced from processing activities into products to be used onsite or to sell to other factories. In 2020, the Company not only achieved zero outsourcing treatment of copper-containing liquid waste and cobalt-containing liquid waste, and zero purchasing of 50% concentration industrial-grade sulfuric acid but also extended its ammonium sulfate drying system, which converts biologically toxic ammonia wastewater into industrial grade ammonium sulfate as valuable recycled products for sale. As a result, TSMC has become a leader in waste resources regeneration.

Environmental Accounting

The purpose of TSMC's environmental accounting system is to identify and calculate environmental costs for internal management. At the same time, the Company can also evaluate the savings or economic benefits of environmental protection programs so as to promote economically-effective programs. While environmental expenses are expected to continue growing, 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 reduction of energy, water or waste and benefits from waste recycling in accordance with its environmental protection programs.

The environmental benefits disclosed in this report include real income from projects such as waste recycling and savings from major environmental projects. In 2020, the total benefits of environmental protection programs of TSMC fabs including waste recycling exceeded NT\$2,430 million.

2020 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	6,450,052	10,345,060
(2) Resource Conservation	Costs for resource (e.g. water) conservation	-	1,933,610
(3) Industrial Waste Disposal and Recycling	Costs for waste treatment (including recycling, incineration and landfill)	2,859,093	-
2. Indirect Cost 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	349,441	318,302
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	-
Total		9,658,713	12,596,972

2020 Environmental Efficiency of TSMC Fabs in Taiwan

Unit: NT\$ thousands

Category	Description	Efficiency
1. Cost Savings of Environmental Protection Projects	Energy savings	1,250,000
	Water savings	24,087
	Waste reduction	632,100
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	524,100
Total		2,430,287

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. TSMC has also continued to upgrade existing office buildings to comply with the LEED standard each year. From 2008 to 2020, 34 of TSMC's fabs and office buildings achieved LEED certifications – 3 platinum and 31 gold. Meanwhile, TSMC also received 5 Taiwan Intelligent Building diamond-class certifications and 23 Taiwan EEWH (ecology, energy saving, waste reduction and health) certifications – 20 diamond, 2 gold and 1 silver.

TSMC believes that more manufacturing companies should convert their facilities into green factories to improve the environment and lower construction costs. Therefore, the Company freely shares its practical experience with industry, government and academia. As of the end of 2020, 15,250 visitors from more than 370 different industrial, government, academic and general community groups had contacted TSMC to learn about the Company's green building technology and practical experience. Since 2009, TSMC has been a leading supporter of the Taiwan government's Green Factory Label standard, which includes 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 2020, and is the most awarded company in Taiwan.

Environmental Audit Results in Violation of Environmental Regulations

During 2020 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, such as ultra-low power chips for narrowband IoT, low Vdd (low operating voltage) 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 adaptors 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 works hard 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 Contribution by TSMC Foundry Services

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

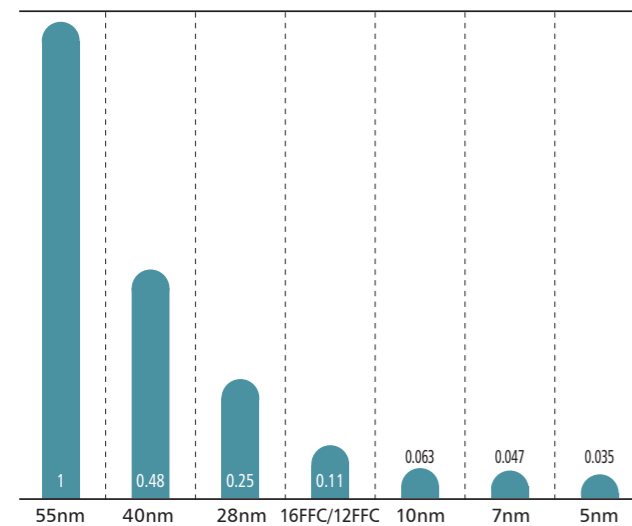
- To improve sustainability, TSMC continues to drive the development of advanced semiconductor process technologies to support customer designs that result in the most advanced, energy-saving and environmentally friendly products. In each new technology generation, circuitry line widths shrink, making transistors smaller and reducing product power consumption for completing the same tasks or achieving the same level of performance.
- As TSMC quickly ramped up its 16nm and newer generation technologies, combined wafer revenue contribution grew significantly from 4% in 2015 to 58% in 2020. TSMC's objective is to continue R&D investment and to increase wafer revenue contribution in 16nm and beyond technologies, helping the Company achieve both profitable growth and sustainability.

TSMC Wafer Revenue Contribution from 16nm and Beyond Technologies

2015	2016	2017	2018	2019	2020
4%	21%	31%	41%	50%	58%

Chip Die Size Cross-Technology Comparison

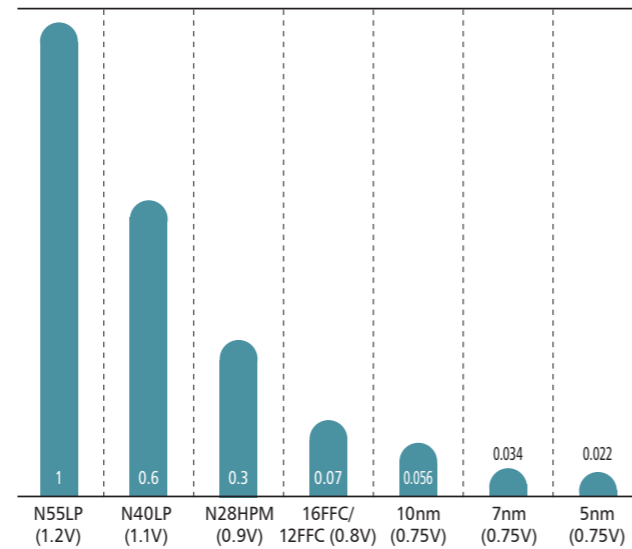
Die size reduces as line width shrinks



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

Chip Total Power Consumption Cross-Technology Comparison

More power is saved as line width shrinks



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

2. Provide Customers Leading Power Management IC 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.
- In 2020, the Company shipped more than 3.8 million 8-inch equivalent wafers using TSMC's HV/Power technologies to customers. 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.

HV/Power Technologies Shipments
Unit: 8-inch equivalent wafer

2016	2017	2018	2019	2020
>2,100K	>2,500K	>2,600K	>2,900K	>3,800K

3. Drive Industry-leading, Comprehensive Ultra-low Power (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 in smart edge devices, including smart speakers, smart cameras, wearables,

and various smart appliances. TSMC's industry-leading offerings include FinFET-based 12-nanometer technology - N12e™ featuring energy efficiency with high performance that results in more computing power and AI inferencing, 22nm ULP/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 2020 through TSMC's green manufacturing, see Environmental Accounting on page 134-135 in this annual report.

Social Contribution 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. In 2020, smartphone products represented about 48% of TSMC revenue.

TSMC Revenue Contribution from Smartphone Products

2017	2018	2019	2020
52%	45%	49%	48%

2. Unleash Customers' Innovations in CIS and 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 with either CIS or MEMS (micro-electromechanical systems) 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 NIR machine vision, etc. For MEMS, TSMC and customers have extended applications from traditional motion sensing to microphone, bio-sensing, microspeaker, 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 remarkable example is that TSMC helps our customer deliver an innovative handheld, single-probe, whole-body ultrasound system in 2020. This product is a particularly useful tool during the global COVID-19 pandemic due to its fast and sharp lung imaging capabilities, portability and ease of cleaning, as infection control has become increasingly important. 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, collection and planning of internal and external issues, expectation and demand of stakeholders, evaluation of risk inspection, communication and consultation of non-managers, application of performance indicator, and evaluation of corrective and preventive action. 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.

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. 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 completed 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.

• 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.

• 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 CO₂ concentration, illumination, noise, and hazardous chemical substances regulated by local laws. In addition, TSMC has performed exposure assessments and has used 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 for 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 execute 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 all 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 (Tainan site). Since 2018, TSMC has conducted complex accident emergency response drills, which include simultaneous scenarios for earthquake, fire and chemical spills. In 2019, the Company completed 108 scenarios 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 October 2020, 75 sessions of tabletop exercises had been completed in addition to 195 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.

● Employee Physical and Mental Health Enhancement

TSMC believes that employees' physical and mental health is not only fundamental to maintaining normal business operations but is also part of a corporation's responsibility. To protect and promote employee physical and mental health, TSMC fosters collaboration among the onsite industrial safety and environmental protection department, onsite medical personnel of the health center, and physicians of occupational medicine. TSMC strives to reduce cerebral and cardiovascular disease that might be induced or aggravated by overwork, night work or shift work. The Company conducts maternal health protection programs and prevention of cumulative trauma disorders as well. TSMC devotes significant resources to mental health awareness and related activities, which not only protect employees from hazards at work but also proactively promote employee health in general. In 2020, through planned personal health management, (1) 599 female employees participated in the maternal health program, the completion rate was 100%. 598 of them were at the first degree risk (there was no harm to the mother, infant, and baby). One employee was classified as second degree risk (possible harm to the mother, infant, and baby) at the first assessment; after proper adjustments to her works, she was reclassified as the first degree after doctor's re-assessment. (2) By analyzing historical cerebral and cardiovascular cases of our employees, TSMC modified disease assessment criteria with contracted doctors, and, combining internal annual health examination reports, as well as working hour's information, was able to identify 2,678 employees that have middle to high risk for cerebral and cardiovascular diseases. These employees were provided with health education and medical assistance. Also, along with their managers, they received suggested working hour recommendations to reduce disease risk. (3) 174 employees were identified in a high risk group for cumulative trauma disorders. Among them, one could have job-related risks. The Company has adjusted whose job conditions to avoid possible risks. (4) As obesity has been considered as a precursor of diabetes, TSMC has held health promotion programs for several consecutive years. In 2020, considering the prevention of COVID-19 and the tendency of young generation's preference on social and video media, TSMC conducted a

series of on-line interactive activities, such as (1) 2 sessions of "Health Lecture On-line", 809 attendees in total. (2) 3 health education videos about hypertension, hyperlipidemia, and diabetes, with a total of 7,266 visits. (3) 3 sessions of on-line quiz, with respect to 3 topics of hypertension, hyperlipidemia, and diabetes, with a total of 4,618 attendees. (4) 1 session of "Selection of Health Diet" of DASH diet, 1,019 participants. The feedbacks were positive to make health promotion can be continued under epidemic prevention.

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 must obtain 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 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 tantalum, tin, tungsten and gold in its products that are conflict-free.

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

In 2020, the world was hit hard by the COVID-19 pandemic. Starting in March, many venues in Taiwan were shut down and the impact of the pandemic could be felt in every sector. In times like these, it behoves the TSMC Education and Culture Foundation to be the first to donate a hundred thermographic cameras to the Ministry of Education to be deployed at national examination locations to support education and safeguard the health of students with the power of technology. Although various programs planned by the Foundation were curtailed by COVID-prevention measures, in 2020 the Foundation invested over NT\$99 million to support various educational events, art exhibitions and performances. Through continuous donations, the Foundation hopes to help reduce educational inequality and bring new ideas to the table for cultural enrichment.

Working in Tandem with Educational Partners, Closing the Resource Gap between City and Country

Apart from donating one hundred thermographic cameras to the Ministry of Education as part of the COVID-prevention measures on campus in Taiwan, the TSMC Education and Culture Foundation works with its educational partners to reduce inequality in educational resources. Together the Foundation and its partner Junyi Academy worked to develop a series of online courses of adaptive learning titled "Critical Thinking Training," which was a response to the implementation of *General Guidelines of Curriculum Guidelines of 12-Year Basic Education*. In addition, the program hosted 26 teaching workshops where teachers learned how to guide students to think logically and improve their communication skills. 518 teachers have attended the workshops and more than 120,000 people have watched them online.

As well as providing online educational resources to teachers and students, the Foundation has long been committed to narrowing the gap of educational resources between schools in urban and rural areas. In 2020, it partnered with Cheng Zhi Education Foundation to assist Emei Junior High School of Hsinchu county to transition to be a KIST-inspired school. With the injection of new educational blood, the two foundations have helped change the lives of many students from schools in rural areas. The Foundation also continuously teams up with CommonWealth Education Foundation, Teach for Taiwan, and the Boyo Social Welfare Foundation. Together the

Foundation donates quality books and brings good teachers to schools in rural areas to narrow the educational gap between urban and rural areas. Furthermore, in 2020 the Foundation offered grants to 70 students from low-income families at five universities: National Tsing Hua University, National Central University, National Cheng Kung University, National Sun Yat-sen University, and National Chung Cheng University. In doing so, the Foundation hopes to assist the students with financial aid and encourage them to concentrate on their studies.

Nurturing Young Talent, Offering a Stage for Diverse Development

To promote popular science education and nurture talents for the semiconductor industry, in 1997 TSMC subsidized the “World of Semiconductors” exhibition hall at the National Museum of Natural Science, being at the vanguard of business-supported education of popular science. For the exhibition to keep up with the times, the TSMC Education and Culture Foundation updated the content of the exhibition in 2002 and again in 2011. In 2018, the Foundation initiated a third renewal project and a brand new “World of Semiconductors” was officially launched in August 2020. With the latest upgrade the exhibition hall provides more in-depth knowledge on semiconductors, adds interactive exhibitions, and increases the exhibition space. Through a multi-dimensional experience at the exhibition, visiting students and the public can broaden their knowledge of semiconductors and the industry. In the meanwhile, in order to inspire more female students to take interest in science, in 2020 the Foundation organized for the first time a “Trip of TSMC Women Scientists,” inviting students from five girls’ high schools to visit the exhibition and be given guided tours by women engineers at TSMC. These women engineers have shared with the young students the trajectory of their learning and precious work experience, thereby hoping to encourage girls at high schools not to confine themselves to any subjects and commit themselves to fields in sciences through in-person exchange.

To motivate college students to pursue their dreams and encourage young people to commit to environmental sustainability, the TSMC Education and Culture Foundation organized the fifth “TSMC Youth Dream Building Project” in 2020. It focuses on the theme of “circular economy” as way to advocate the importance of environmental sustainability

to the public and to the younger generation. This project was open not only to the college students in Taoyuan, Hsinchu, Maoli and Tainan areas but also to those from Taichung area. In total, 102 teams of college students participated in the project. The topics of the proposals covered virtually every issue in society, ranging from creating a popular science column on semiconductors, to a wood reclaiming project, and from an anti-drug campaign to food and agriculture education. These innovative ideas greatly impressed the panel of judges. Moreover, the TSMC Education and Culture Foundation continued its support for literary, calligraphic and seal-carving by young students through funding two annual competitions, i.e. the “TSMC Youth Literature Award” and the “TSMC Youth Calligraphy and Seal-Carving Competition,” which are well into their 17th and 13th years respectively. Both competitions have become the important events in their respective fields. The Foundation has also attracted public attention and interest in literature and calligraphy via the internet. The “TSMC Youth Literature Award” social platform so far has garnered over 14,000 members and one award-winning piece has been shared over 3,000 times.

The TSMC Education and Culture Foundation wishes to offer a non-academic platform to young students, where through science and humanities competitions and events the students can be inspired to develop diverse interests and explore wherever their passion takes them.

Advocating Online Arts and Literary Events, Calming the Restless Mind

During the second half of 2020, the pandemic situation in Taiwan was relatively under control. Thus, the TSMC Education and Culture Foundation was able to sponsor a live concert in Tainan performed by the renowned cellist Yo-Yo Ma and streamed it live globally. With pandemic preventive measures in place, the Foundation invited the public to the concert hall to experience the soul-soothing power of virtuoso performance. At the same time, live streaming allowed audiences all over the world to enjoy the musical feast. The Foundation also teamed up with the National Symphony Orchestra (of Taiwan) to initiate an “Education Program for Youth” project, inviting Taiwanese-Australian violinist Ray Chen to give master classes at the National Concert Hall. The classes were streamed live and broadcasted by Taiwan Public Television Service, thereby promoting music education to a wider audience. Over 73,000 people have viewed the master classes.

The Foundation has long dedicated itself to promoting Chinese classic literature. In 2020, it collaborated with National Tsing Hua University on a general education course, “Pai Hsien-yung Literature Lectures: *Dream of the Red Chamber*”. The course hosted by Mr. Pai Hsien-yung and renowned *Honglou meng* specialists from abroad and in Taiwan to give lectures on various aspects of the classic. The course also invited students to explore the profoundness of Chinese literature, bringing a humanistic perspective to their education. Likewise, the Foundation-funded broadcasting program, “Lectures on the Classics on Air,” entered its 13th year. The program host, Professor Xin Yi Yun, has released an audio book, *Putting A Xin’s Spin on Lao Tzu*, as an approachable way for the public to experience the wisdom of Chinese philosophers from the classics. In the same vein, the 2020 “TSMC Lecture” again invited the distinguished research fellow Wang Ming-ke of the Institute of History and Philology of Academia Sinica to examine how humans have coped with fear and what measures have been taken historically to deal with pandemics. The TSMC Education and Culture Foundation has not only promoted literary talks within local communities but also posted the talks on an online channel available to the public. In doing so, the Foundation hopes to go beyond geographic borders with technology and let arts and literature comfort the restless minds during these difficult times.

7.4 TSMC Charity Foundation

Since its establishment in 2017, the TSMC Charity Foundation has focused on developing programs and projects relating to its four main pillar initiatives: disadvantaged care, solitary elderly care, filial piety promotion, and environmental protection. Under the leadership of Chairperson Sophie Chang, the Foundation takes a stand for disadvantaged persons, focusing on current and potential social issues, and striving to close the wealth gap in Taiwan society by enhancing education and providing emergency assistance in rural areas. This support gives disadvantaged families and children from rural areas more opportunities to improve their lives. The Foundation has also established a social welfare platform that magnifies voices from all corners of society to support social change, powers social change through charitable works, and uplift Taiwan society.

The Foundation continued to expand its scope of services through charitable endeavors in 2020 and initiated many new projects related to social welfare including the following:

- **Disadvantaged Care:** The Foundation focused on the two main initiatives for disadvantaged care – “rural education” and “support for the disadvantaged”. The Foundation provided volunteer services, building repairs, online educational materials, off-grade foods, and other assistance to educational institutions and children in rural areas, ensuring that disadvantaged groups received equal opportunities to obtain education. In 2020, the Foundation prioritized vocational education, collaborating with various enterprises to promote training and reach the goal of “providing livelihood/practical skills,” helping students from rural areas with vocational training. To help support the basic living needs of the underprivileged, the Foundation continued to visit and provide financial aid and daily supplies to high-risk disadvantaged families, providing valuable support to the already existing social welfare system.

In 2020, the Foundation gave support to 62 after-school care locations benefiting a total of 4,685 students. With the dedication and knowledge of its TSMC volunteers, the Foundation created science tutorial videos to promote science experiments and education. The Foundation also collaborated with National Chiao Tung University to help 30 elementary schools in Hsinchu City that were lacking information resources to align with 2019 Curriculum Guidelines, an issue affecting 18,000 students in the city. The Foundation’s “Sending Love” programs continued to be active, and Foundation staff conducted onsite visits to identify disadvantaged families in need of financial support. The living conditions of these disadvantaged families were improved through charitable donations from both inside and outside TSMC. As of 2020, the Foundation has assisted a total of 155 families.

- **Solitary Elderly Care:** The Foundation improved the health and welfare of solitary elders by collaborating with its Networking of Love partners to connect social welfare groups and medical institutions providing care to solitary elders. In 2020, the Foundation helped launch a new intelligent medical system at the Taitung County Sazasa Aborigine Health Promotion Site to enhance medical quality and efficacy. The Foundation continued to collaborate with TSMC Facility Division to provide house repair services at seven locations in Eastern Taiwan, ensuring a safe and healthy living space for solitary elders. Current Networking of Love partners include Taipei Veterans General Hospital, Miaoli General Hospital, Old Five Old Foundation, Feng Yuan Hospital,

China Medical University Hospital, Lin Tseng Lien Welfare and Charity Foundation, Taiwan Puli Care Association, Sin-Lau Hospital, Tainan Hospital, Jianan Psychiatric Center, Mennonite Christian Hospital and the Mennonite Social Welfare Foundation, and Fooyin University, Penghu Hospital and Cishan Hospital.

● **Filial Piety Promotion:** The Foundation promotes the culture value of filial piety as part of its efforts to reduce social risks and problems arising from ageing societies by raising generational awareness of filial piety. In 2020, volunteers from TSMC Fabs and Divisions helped promote filial piety awareness by teaching elementary and junior high school students to make lunchboxes and write autobiographies, thereby building a bridge for communication between generations. The Foundation continues to work with the K-12 Education Administration Ministry of Education, hosting four parent-child filial piety workshops in New Taipei City, Taichung, Yunlin, and Tainan to encourage cross-generational dialogue and plant the spirit of filial piety in the hearts of the attendees.

● **Environmental Protection:** We aim to reduce food waste through the Cherish Food Program. Through our volunteer programs, we promote environmental awareness, help schools improve energy savings inside their facilities, and also educate and provide information to these schools about environmental protection.

In 2020, the Foundation continued its “Cherish Food Program” and worked with many food companies to donate off-grade foods and 11 freezers to 92 institutes that collaborated with the Foundation to provide care for the disadvantaged, reduce food waste, and promote environmental conservation. The Foundation previously collaborated with food companies including Chi Mei Frozen Food, Hunya Foods, Laurel Corporation, Lian Hwa Foods Corporation, Hsin Tung Yang Corporation, and Dachan Great Wall Group.

TSMC ecology volunteers continued to provide ecology tours at Hsinchu Fab 12B plant, Taichung Fab 15 plant, Tainan Fab 14 plant, and the Tainan Jacana Ecology Education Park; meanwhile, TSMC professional energy-saving volunteers helped educational institutions of all levels with making energy-saving assessments and improvements, at service locations covering Taipei, Hsinchu, Taichung, Tainan and Kaohsiung.

7.5 TSMC i-Charity

Launched in 2014, the TSMC i-Charity platform is an internal interactive website that TSMC employees can use to propose care programs, share program results, provide responses and suggestions, and take advantage of timely online funding activities to give back to society.

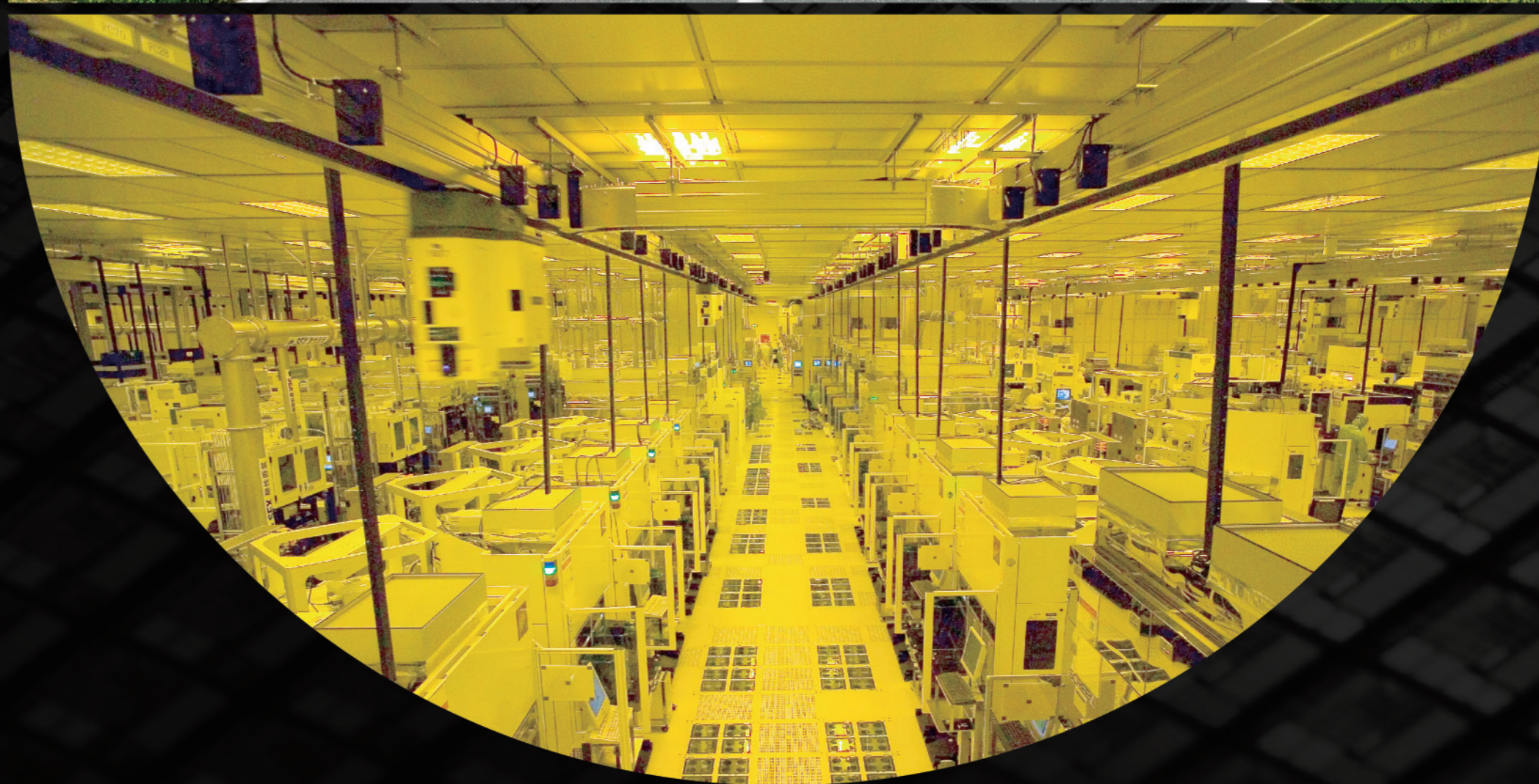
In 2020, charitable contributions surpassed NT\$32 million and a total of 22,000 people participated in the “Equal Education Platform,” “Teach for Taiwan,” “Repair Services Volunteer Group Program,” and “Pandemic Prevention Support for Firstline Workers” initiatives.

From 2014 until 2020, charitable contributions on the TSMC i-Charity platform has in aggregate, exceeded NT\$140 million. TSMC will continue its commitment to society and encourage employees to care for and give back to society in different ways.

7.6 Social Responsibility 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 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		Please refer to “7. Corporate Social Responsibility” on pages 124-145 of this annual report.	None
2. Does the Company have a dedicated (or ad-hoc) CSR organization with Board of Directors authorization for senior management, which reports to the Board of Directors?	V		Please refer to “7. Corporate Social Responsibility” on pages 124-145 of this annual report.	None
3. Environmental Topic (1) Has the Company set an environmental management system designed to industry characteristics? (2) Is the Company committed to improving resource efficiency and to the use of renewable materials with low environmental impact? (3) Does the Company evaluate current and future climate change potential risks and opportunities and take measures related to climate related topics? (4) Does the Company collect data for greenhouse gas emissions, water usage and waste quantity in the past two years, and set energy conservation, greenhouse gas emissions reduction, water usage reduction and other waste management policies?	V		Please refer to “7.2.1 Environmental Protection” on pages 131-135 of this annual report.	None
4. Social Topic (1) Does the Company set policies and procedures in compliance with regulations and internationally recognized human rights principles? (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? (3) Does the Company provide employees with a safe and healthy working environment, with regular safety and health training? (4) Has the Company established effective career development training plans? (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 polices to protect consumers’ rights and consumer appeal procedures? (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		(1) Please refer to “5.5 Human Capital” on pages 92-97 of this Annual Report. (2) Please refer to “5.5 Human Capital” on pages 92-97 of this Annual Report. (3) Please refer to “7.2.3 Safety and Health” on pages 138-140 of this Annual Report. (4) Please refer to “5.5 Human Capital” on pages 92-97 of this Annual Report. (5) Not applicable as TSMC is not an end product manufacturer. (6) Please refer to “7.2.4 Supplier Management” on page 140-141 of this annual report.	None
5. Does the Company refer to international reporting rules or guidelines to publish CSR Report to disclose non-financial information of the Company? Has the said Report acquire 3 rd certification party verification or statement of assurance?	V		TSMC has published a “Corporate Social Responsibility Report” since 2008, and acquired 3 rd certification party verification or statement of assurance, and discloses this on the Company’s website (https://www.tsmc.com/english/csr/index.htm).	None
6. If the company has established its corporate social responsibility code of practice according to “Listed Companies Corporate Social Responsibility Code of Practice,” please describe the operational status and differences. TSMC follows the Corporate Social Responsibility Policy set by the Chairman, Dr. Mark Liu. For corporate social responsibility operational status, please refer to “7. Corporate Social Responsibility” on pages 124-145 of this annual report and corporate social responsibility related information in our website: https://www.tsmc.com/english/csr/index.htm				
7. Other important information to facilitate better understanding of the company’s implementation of corporate social responsibility: Please refer to TSMC’s website for its corporate social responsibility implementation status: https://www.tsmc.com/english/csr/index.htm				

8. Subsidiary Information and Other Special Notes

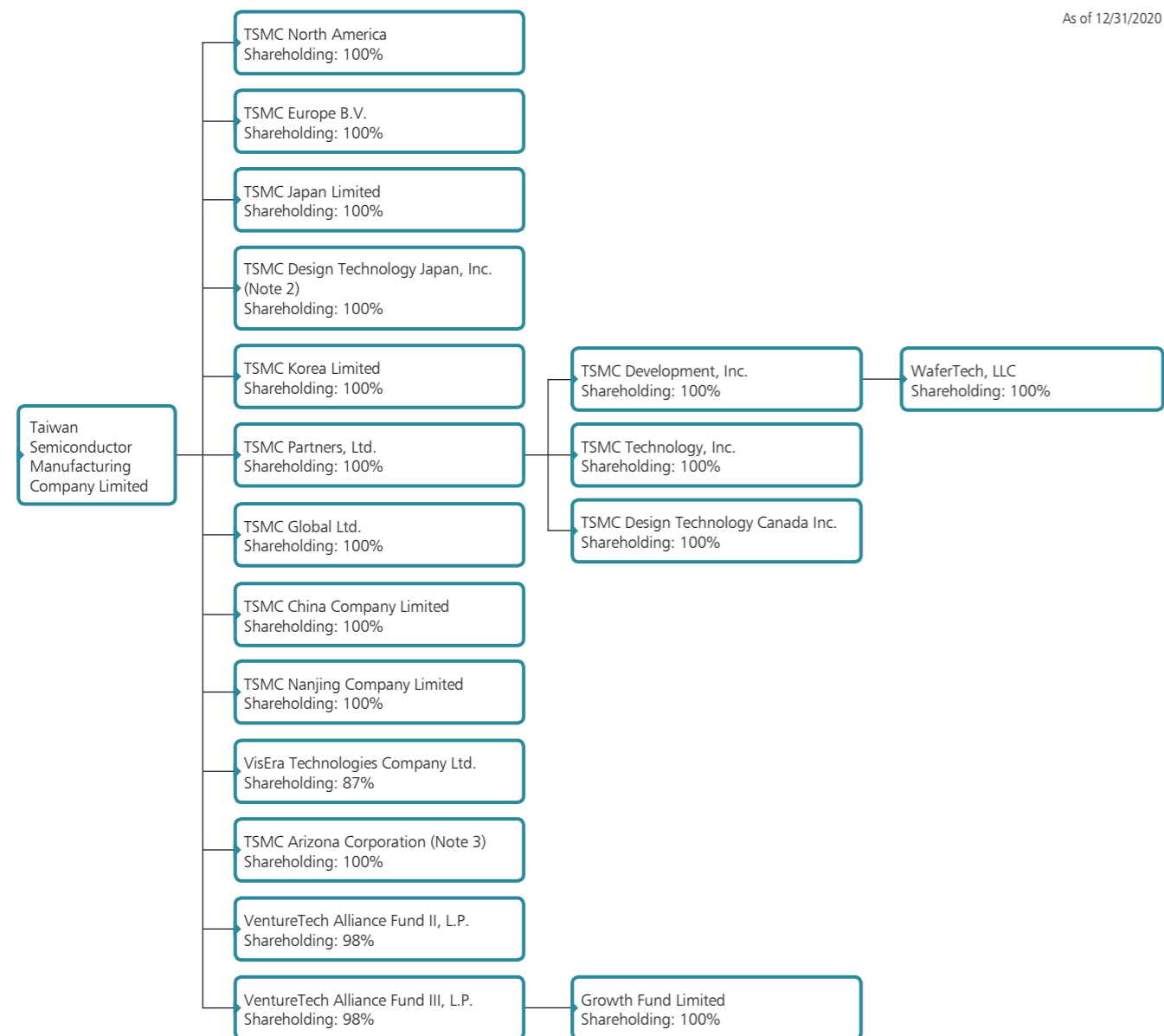


> A scenic highway stretching ahead unbending (Up)

> The majestic scale of a fab cleanroom (Down)

8.1 Subsidiaries

8.1.1 TSMC Subsidiaries Chart (Note 1)



Note 1: InveStar Semiconductor Development Fund, Inc. and InveStar Semiconductor Development Fund, Inc. (II) LDC. have completed the liquidation procedures in November 2020.
Emerging Fund, L.P., a 99.9% owned subsidiary of TSMC, was established in January 2021.
On February 9, 2021, TSMC's Board of Directors approved to establish a wholly-owned subsidiary in Japan to expand the Company's 3DIC material research.
Note 2: TSMC Design Technology Japan, Inc. was established in January 2020.
Note 3: TSMC Arizona Corporation was established in November 2020.

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 is currently scheduled to provide 12-inch wafer capacity in 2024. TSMC's subsidiaries in North America, Europe, Japan, China, and South Korea, etc. are dedicated to provide timely customer services and engineering support to the worldwide customers and also support the Company's core foundry business with related services as well as invest in start-up companies in the semiconductor industry.

8.1.3 TSMC Subsidiaries

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

As of 12/31/2020 (Note 2)

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 Design Technology Japan, Inc.	Jan. 10, 2020	Yokohama, Japan	JPY 550,000 (Note 1)	Engineering support activities
TSMC Korea Limited	May 02, 2006	Seoul, Korea	KRW 400,000	Customer service and supporting 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\$ 0.03	Manufacturing, sales, and testing 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\$ 11,284,000	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\$ 96,519	Investing in technology start-up companies
Growth Fund Limited	May 30, 2007	Cayman Islands	US\$ 2,504	Investing in technology start-up companies
VisEra Technologies Company Ltd.	Dec. 01, 2003	Hsinchu, Taiwan	NT\$ 2,911,531	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, sales, packaging and testing of color filter

Note 1: In February 2021, TSMC had a capital injection in TSMC Design Technology Japan, Inc. Capital stock increased to JPY750 million accordingly.

Note 2: On November 10, 2020, TSMC's Board of Directors approved the investment in a new venture capital fund, Emerging Fund L.P. The fund was established in January 2021. On February 9, 2021, TSMC's Board of Directors approved to establish a wholly-owned subsidiary in Japan to expand the Company's 3DIC material research.

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 12/31/2020 (Note 4)

Company	Title	Name	Shareholding	
			Shares (Investment Amount)	% (Investment Holding %)
TSMC North America	Director Director President/CEO	Sylvia Fang Rick Cassidy David Keller	- - - TSMC holds 11,000,000 shares	- - - 100%
TSMC Europe B.V	Director Director President	Wendell Huang Maria Marced Maria Marced	- - - TSMC holds 200 shares	- - - 100%
TSMC Japan Limited	Director Director President	Sylvia Fang Makoto Onodera Makoto Onodera	- - - TSMC holds 6,000 shares	- - - 100%
TSMC Design Technology Japan, Inc.	Director Director	Cliff Hou Wendell Huang	- - TSMC holds 11,000 shares (Note 1)	- - 100%
TSMC Korea Limited	Director Director Director	C.C. Pan Chih-Chun Tsai Wendell Huang	- - - TSMC holds 80,000 shares	- - - 100%
TSMC China Company Limited	Chairman Director Director Supervisor 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 YL Wang Sylvia Fang Wendell Huang Rick Cassidy	- - - - - TSMC holds 30,001 shares	- - - - - 100%
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%

(Continued)

Company	Title	Name	Shareholding	
			Shares (Investment Amount)	% (Investment Holding %)
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 11,284 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\$94,589,012)	(98.00%)
Growth Fund Limited	None	None	(VentureTech Alliance Fund III, L.P. invests US\$2,503,768)	(100%)
VisEra Technologies Company Ltd.	Chairman Director Director Director Director Supervisor Supervisor President (Note 2)	Robert Kuan C.S. Yoo George Liu Sylvia Fang Diane Kao Wendell Huang Morris Cheng S.C. Hsin	54,600 shares - - - - - - - - TSMC holds 253,120,000 shares (Note 3)	0.02% - - - - - - - 86.94% (Note 3)

Note 1: In February 2021, TSMC had a capital injection in TSMC Design Technology Japan, Inc. Total shares held by TSMC increased to 15,000 share accordingly.

Note 2: On March 4, 2021, VisEra Technologies Company Ltd. held its shareholder meeting for election of directors and replacing supervisors with Audit Committee. Newly elected directors are Robert Kuan (Chairman), George Liu and Diane Kao, all of whom are TSMC representatives, and Laura Huang, Emma Chang, and P.H. Chang, all of whom are independent directors.

Note 3: On February 9, 2021, TSMC's Board of Directors approved the sale of up to 39,501,000 common shares of VisEra Technologies Company Ltd. After such share disposal, shares owned by TSMC will decrease to 213,619,000 shares and TSMC's ownership in VisEra will be reduced to 73.37%.

Note 4: On November 10, 2020, TSMC's Board of Directors approved the investment in a new venture capital fund, Emerging Fund L.P. The fund was established in January 2021. On February 9, 2021, TSMC's Board of Directors approved to establish a wholly-owned subsidiary in Japan to expand the Company's 3DIC material research.

8.1.6 Operational Highlights of TSMC Subsidiaries

Unit: NT\$ thousands, except EPS (NT\$)

As of 12/31/2020

Company	Capital Stock	Assets	Liabilities	Net Worth	Net Revenues	Income (Loss) from Operation	Net Income (Loss)	Basic Earning (Loss) Per Share
TSMC North America	309,067	116,836,156	112,268,097	4,568,059	832,423,971	252,542	294,316	26.76
TSMC Europe B.V.	3,459	867,873	330,136	537,737	756,339	85,308	60,142	300,710.37
TSMC Japan Limited	81,870	263,087	118,303	144,784	247,277	8,853	3,361	560.13
TSMC Design Technology Japan, Inc.	150,095	530,744	238,478	292,266	106,147	(3,184)	(8,070)	(1,559.27)
TSMC Korea Limited	10,400	47,088	4,693	42,395	17,292	1,595	1,598	19.98
TSMC Development, Inc.	0.03	29,203,494	0	29,203,494	1,781,868	1,688,569	1,626,764	162,676,449.10
TSMC Partners, Ltd.	27,767,373	52,694,345	1,487	52,692,858	2,284,193	2,280,068	2,273,717	2.30
TSMC Global Ltd.	317,046,548	477,801,554	95,572,515	382,229,039	8,077,321	7,668,030	7,668,014	679,547.46
WaferTech, LLC	0	5,525,632	623,686	4,901,946	7,950,210	1,707,371	1,394,261	4.75
TSMC China Company Limited	19,342,286	67,219,561	2,726,842	64,492,719	19,894,495	6,687,777	7,200,634	NA
TSMC Nanjing Company Limited	28,570,908	58,205,344	24,617,558	33,587,786	26,853,055	12,030,053	12,143,866	NA
VisEra Technologies Company Ltd.	2,911,531	11,771,768	4,488,933	7,282,835	6,946,349	2,556,440	2,090,545	7.18
TSMC Arizona Corporation	1	908,497	65,752	842,745	0	(196)	(196)	(79.29)
TSMC Technology, Inc.	0.03	1,691,248	921,834	769,414	2,946,355	140,303	147,271	14,727,061.80
TSMC Design Technology Canada Inc.	53,715	312,543	55,766	256,777	342,213	31,101	27,379	11.90
VentureTech Alliance Fund II, L.P.	97,982	77,750	0	77,750	1,606	(1,704)	(2,066)	NA
VentureTech Alliance Fund III, L.P.	2,711,906	195,516	0	195,516	0	(14,453)	(14,453)	NA
Growth Fund Limited	70,348	123,940	0	123,940	0	(1,280)	(1,280)	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 2020 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 2020 and as of the Date of this Annual Report: None.

8.3.3 Any Events in 2020 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 Law of Taiwan: None.

8.3.4 Other Necessary Supplement: None.

Contact Information

Taiwan	
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TSMC Spokesperson

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TSMC Deputy Spokesperson

Name: Nina Kao
Title: Head of PR Department
Tel: +886-3-5636688 Fax: +886-3-5637000
Email: press@tsmc.com

Auditors

Company: Deloitte & Touche
Auditors: Mei-Yen Chiang, Yu-Feng Huang
Address: 20F, No. 100, Songren Rd., Xinyi Dist., Taipei 110-016, Taiwan, R.O.C.
Tel: +886-2-27259988 Fax: +886-2-40516888
Website: <http://www.deloitte.com.tw>

Common Share Transfer Agent and Registrar

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

ADR Depository Bank

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

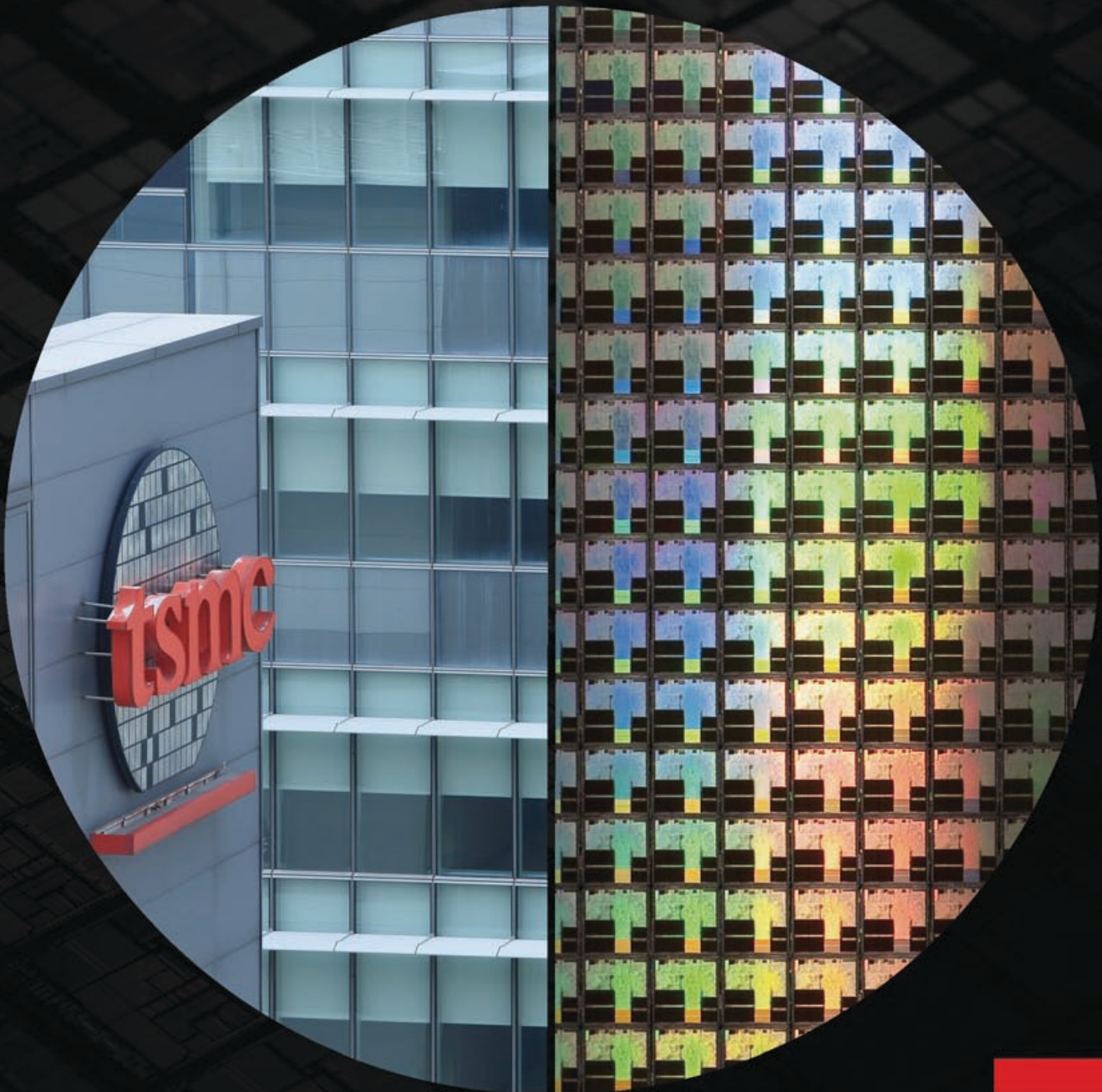
TSMC’s depository receipts of the common shares are listed on New York Stock Exchange (NYSE) under the symbol TSM. The information relating to TSM is available at <http://www.nyse.com> and <http://mops.twse.com.tw>

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

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TSMC Annual Report 2020 (II) Financial Statements



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**Taiwan Semiconductor Manufacturing
Company Limited and Subsidiaries**

**Consolidated Financial Statements for the
Years Ended December 31, 2020 and 2019 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, 2020, 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 9, 2021

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, 2020 and 2019, 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, 2020 and 2019, 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, 2020. 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 matters for the Company's consolidated financial statements for the year ended December 31, 2020 are 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 understand 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 EUI/CIP at year end 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 at year end.
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, 2020 and 2019 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.

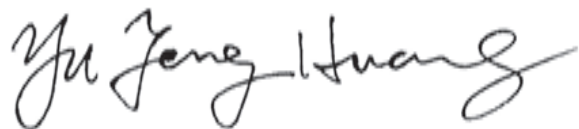
We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

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, 2020 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 Yu Feng Huang.



Deloitte & Touche
Taipei, Taiwan
Republic of China



February 9, 2021

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)

ASSETS	December 31, 2020		December 31, 2019	
	Amount	%	Amount	%
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	\$ 660,170,647	24	\$ 455,399,336	20
Financial assets at fair value through profit or loss (Note 7)	2,259,412	-	326,839	-
Financial assets at fair value through other comprehensive income (Note 8)	122,448,453	5	127,396,577	6
Financial assets at amortized cost (Note 9)	6,597,992	-	299,884	-
Hedging financial assets (Note 10)	47	-	25,884	-
Notes and accounts receivable, net (Note 11)	145,480,272	5	138,908,589	6
Receivables from related parties (Note 33)	558,131	-	862,070	-
Other receivables from related parties (Note 33)	50,645	-	51,653	-
Inventories (Notes 5 and 12)	137,353,407	5	82,981,196	4
Other financial assets (Note 34)	10,676,111	1	11,041,091	-
Other current assets	6,590,191	-	5,320,795	-
Total current assets	1,092,185,308	40	822,613,914	36
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income (Note 8)	4,514,940	-	4,124,337	-
Financial assets at amortized cost (Note 9)	4,372,207	-	7,348,914	-
Investments accounted for using equity method (Note 13)	18,841,061	1	18,698,788	1
Property, plant and equipment (Notes 5 and 14)	1,555,589,120	56	1,352,377,405	60
Right-of-use assets (Notes 5 and 15)	27,728,382	1	17,232,402	1
Intangible assets (Notes 5 and 16)	25,768,179	1	20,653,028	1
Deferred income tax assets (Notes 5 and 27)	25,958,184	1	17,928,358	1
Refundable deposits	1,343,001	-	2,084,968	-
Other noncurrent assets	4,411,023	-	1,742,918	-
Total noncurrent assets	1,668,526,097	60	1,442,191,118	64
TOTAL	\$ 2,760,711,405	100	\$ 2,264,805,032	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans (Notes 17 and 30)	\$ 88,559,026	3	\$ 118,522,290	5
Financial liabilities at fair value through profit or loss (Note 7)	94,128	-	982,349	-
Hedging financial liabilities (Note 10)	1,169	-	1,798	-
Accounts payable	38,987,284	1	38,771,066	2
Payables to related parties (Note 33)	2,107,718	-	1,434,900	-
Salary and bonus payable	20,071,241	1	16,272,353	1
Accrued profit sharing bonus to employees and compensation to directors and supervisors (Note 29)	35,681,046	1	23,648,903	1
Payables to contractors and equipment suppliers	157,804,961	6	140,810,703	6
Cash dividends payable (Note 22)	129,651,902	5	129,651,902	6
Income tax payable (Notes 5 and 27)	53,909,313	2	32,466,156	1
Long-term liabilities - current portion (Notes 18 and 30)	2,600,000	-	31,800,000	1
Accrued expenses and other current liabilities (Notes 5, 15, 21, 23 and 30)	87,683,260	3	56,373,281	3
Total current liabilities	617,151,048	22	590,735,701	26
NONCURRENT LIABILITIES				
Bonds payable (Notes 18 and 30)	254,105,084	9	25,100,000	1
Long-term bank loans (Notes 19 and 30)	1,967,611	-	-	-
Deferred income tax liabilities (Notes 5 and 27)	1,729,941	-	344,393	-
Lease liabilities (Notes 5, 15 and 30)	20,560,649	1	15,041,833	1
Net defined benefit liability (Note 20)	11,914,074	1	9,182,496	-
Guarantee deposits (Notes 21 and 30)	265,599	-	176,904	-
Others	2,395,400	-	2,128,279	-
Total noncurrent liabilities	292,938,358	11	51,973,905	2
Total liabilities	910,089,406	33	642,709,606	28
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 22)	259,303,805	9	259,303,805	11
Capital surplus (Note 22)	56,347,243	2	56,339,709	3
Retained earnings (Note 22)				
Appropriated as legal capital reserve	311,146,899	11	311,146,899	14
Appropriated as special capital reserve	42,259,146	2	10,675,106	-
Unappropriated earnings	1,235,280,036	45	1,011,512,974	45
	1,588,686,081	58	1,333,334,979	59
Others (Note 22)	(54,679,873)	(2)	(27,568,369)	(1)
Equity attributable to shareholders of the parent	1,849,657,256	67	1,621,410,124	72
NON - CONTROLLING INTERESTS	964,743	-	685,302	-
Total equity	1,850,621,999	67	1,622,095,426	72
TOTAL	\$ 2,760,711,405	100	\$ 2,264,805,032	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)

	2020		2019	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 23, 33 and 39)	\$1,339,254,811	100	\$1,069,985,448	100
COST OF REVENUE (Notes 5, 12, 29, 33 and 37)	<u>628,108,309</u>	<u>47</u>	<u>577,286,947</u>	<u>54</u>
GROSS PROFIT BEFORE REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO ASSOCIATES	711,146,502	53	492,698,501	46
REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO ASSOCIATES	<u>(16,382)</u>	<u>-</u>	<u>3,395</u>	<u>-</u>
GROSS PROFIT	<u>711,130,120</u>	<u>53</u>	<u>492,701,896</u>	<u>46</u>
OPERATING EXPENSES (Notes 5, 29 and 33)				
Research and development	109,486,089	8	91,418,746	8
General and administrative	28,457,593	2	21,737,210	2
Marketing	<u>7,112,867</u>	<u>1</u>	<u>6,348,626</u>	<u>1</u>
Total operating expenses	<u>145,056,549</u>	<u>11</u>	<u>119,504,582</u>	<u>11</u>
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 14, 15 and 29)	<u>710,127</u>	<u>-</u>	<u>(496,224)</u>	<u>-</u>
INCOME FROM OPERATIONS (Note 39)	<u>566,783,698</u>	<u>42</u>	<u>372,701,090</u>	<u>35</u>
NON-OPERATING INCOME AND EXPENSES				
Share of profits of associates	3,592,818	-	2,844,222	-
Interest income (Note 24)	9,018,400	1	16,189,374	1
Other income	660,607	-	417,295	-
Foreign exchange gain (loss), net (Note 36)	(3,303,298)	-	2,095,217	-
Finance costs (Note 25)	(2,081,455)	-	(3,250,847)	-
Other gains and losses, net (Note 26)	<u>10,106,410</u>	<u>1</u>	<u>(1,151,015)</u>	<u>-</u>
Total non-operating income and expenses	<u>17,993,482</u>	<u>2</u>	<u>17,144,246</u>	<u>1</u>
INCOME BEFORE INCOME TAX	584,777,180	44	389,845,336	36
INCOME TAX EXPENSE (Notes 5 and 27)	<u>66,619,098</u>	<u>5</u>	<u>44,501,527</u>	<u>4</u>
NET INCOME	<u>518,158,082</u>	<u>39</u>	<u>345,343,809</u>	<u>32</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2020		2019	
	Amount	%	Amount	%
OTHER COMPREHENSIVE INCOME (LOSS)				
(Notes 5, 20, 22 and 27)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	\$ (3,516,749)	(1)	\$ 253,895	-
Unrealized gain on investments in equity instruments at fair value through other comprehensive income	423,697	-	334,327	-
Gain (loss) on hedging instruments	24,085	-	(109,592)	-
Share of other comprehensive loss of associates	(11,604)	-	(18,271)	-
Income tax benefit (expense) related to items that will not be reclassified subsequently	422,663	-	(20,992)	-
	<u>(2,657,908)</u>	<u>(1)</u>	<u>439,367</u>	<u>-</u>
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	(29,847,196)	(2)	(14,689,107)	(1)
Unrealized gain on investments in debt instruments at fair value through other comprehensive income	2,466,711	-	2,566,373	-
Share of other comprehensive loss of associates	(283,409)	-	(140,195)	-
	<u>(27,663,894)</u>	<u>(2)</u>	<u>(12,262,929)</u>	<u>(1)</u>
Other comprehensive loss for the year, net of income tax	<u>(30,321,802)</u>	<u>(3)</u>	<u>(11,823,562)</u>	<u>(1)</u>
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	<u>\$ 487,836,280</u>	<u>36</u>	<u>\$ 333,520,247</u>	<u>31</u>
NET INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	\$ 517,885,387	39	\$ 345,263,668	32
Non-controlling interests	<u>272,695</u>	<u>-</u>	<u>80,141</u>	<u>-</u>
	<u>\$ 518,158,082</u>	<u>39</u>	<u>\$ 345,343,809</u>	<u>32</u>
TOTAL COMPREHENSIVE INCOME ATTRIBUTABLE TO:				
Shareholders of the parent	\$ 487,563,478	36	\$ 333,440,460	31
Non-controlling interests	<u>272,802</u>	<u>-</u>	<u>79,787</u>	<u>-</u>
	<u>\$ 487,836,280</u>	<u>36</u>	<u>\$ 333,520,247</u>	<u>31</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	<u>2020</u>	<u>2019</u>
	Income Attributable to Shareholders of the Parent	Income Attributable to Shareholders of the Parent
EARNINGS PER SHARE (NT\$, Note 28)		
Basic earnings per share	<u>\$ 19.97</u>	<u>\$ 13.32</u>
Diluted earnings per share	<u>\$ 19.97</u>	<u>\$ 13.32</u>

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		Capital Surplus		Legal Capital Reserve		Special Reserve		Retained Earnings		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		Non-controlling Interests		Total Equity			
	Shares (In Thousands)	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	Amount	
BALANCE, JANUARY 1, 2019	25,930,380	\$ 259,303,805	\$ 56,315,932	\$ 276,033,811	\$ 26,907,327	\$ 1,073,706,503	\$ 1,376,647,841	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)	\$ 1,676,817,665	\$ 678,731	\$ 1,677,496,396											
Appropriations of earnings	-	-	-	-	-	(35,113,088)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Legal capital reserve	-	-	-	35,113,088	-	16,232,421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special capital reserve	-	-	-	(16,232,421)	-	(388,955,707)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	(35,113,088)	-	(407,836,374)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	345,263,668	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net income in 2019	-	-	-	-	-	217,059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other comprehensive income (loss) in 2019, net of income tax	-	-	-	-	-	217,059	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total comprehensive income (loss) in 2019	-	-	-	-	-	345,480,727	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Basis adjustment for gain on hedging instruments	-	-	-	-	-	162,118	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adjustments to share of changes in equities of associates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
From share of changes in equities of subsidiaries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donation from shareholders	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Decrease in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BALANCE, DECEMBER 31, 2019	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	-	-	-	-	-	(31,584,040)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Special capital reserve	-	-	-	31,584,040	-	16,232,421	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cash dividends to shareholders	-	-	-	(31,584,040)	-	(290,857,545)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	517,885,387	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Net income in 2020	-	-	-	-	-	31,521,793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Other comprehensive income (loss) in 2020, net of income tax	-	-	-	-	-	31,521,793	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total comprehensive income (loss) in 2020	-	-	-	-	-	514,763,594	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Basis adjustment for loss on hedging instruments	-	-	-	-	-	(108,687)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adjustments to share of changes in equities of associates	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Donation from shareholders	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Increase in non-controlling interests	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BALANCE, DECEMBER 31, 2020	25,930,380	\$ 259,303,805	\$ 56,347,243	\$ 311,146,899	\$ 47,259,146	\$ 1,073,280,036	\$ 1,588,686,081	\$ (57,001,627)	\$ (2,321,754)	\$ (20,265)	\$ (190)	\$ (54,679,873)	\$ 1,849,657,256	\$ 964,743	\$ 1,850,621,999											

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)

	2020	2019
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	\$ 584,777,180	\$ 389,845,336
Adjustments for:		
Depreciation expense	324,538,443	281,411,832
Amortization expense	7,186,248	5,472,409
Expected credit losses recognized on investments in debt instruments	3,672	1,714
Finance costs	2,081,455	3,250,847
Share of profits of associates	(3,592,818)	(2,844,222)
Interest income	(9,018,400)	(16,189,374)
Share-based compensation	6,612	2,818
Loss (gain) on disposal or retirement of property, plant and equipment, net	(188,863)	949,965
Loss on disposal of intangible assets, net	599	2,377
Impairment loss (reversal of impairment loss) on property, plant and equipment	10,159	(301,384)
Loss (gain) on financial instruments at fair value through profit or loss, net	(3,005)	955,723
Gain on disposal of investments in debt instruments at fair value through other comprehensive income, net	(1,439,420)	(537,835)
Loss from disposal of subsidiaries	-	4,598
Unrealized (realized) gross profit on sales to associates	16,382	(3,395)
Gain on foreign exchange, net	(1,372,610)	(5,228,218)
Dividend income	(637,575)	(417,295)
Gain arising from fair value hedges, net	-	(13,091)
Gain on lease modification	(2,828)	(2,075)
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	(2,965,270)	848,750
Notes and accounts receivable, net	(8,082,708)	(18,119,552)
Receivables from related parties	303,939	(277,658)
Other receivables from related parties	7,588	13,375
Inventories	(54,372,211)	20,249,780
Other financial assets	1,389,493	3,383,500
Other current assets	(1,358,129)	(76,263)
Accounts payable	404,607	5,860,068
Payables to related parties	672,818	58,401
Salary and bonus payable	3,798,888	1,800,981
Accrued profit sharing bonus to employees and compensation to directors and supervisors	12,032,143	(332,251)
Accrued expenses and other current liabilities	20,617,359	(2,372,032)
Net defined benefit liability	(785,171)	(215,014)
Cash generated from operations	874,028,577	667,182,815
Income taxes paid	(51,362,365)	(52,044,071)
Net cash generated by operating activities	<u>822,666,212</u>	<u>615,138,744</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2020	2019
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Financial instruments at fair value through profit or loss	\$ -	\$ (124,748)
Financial assets at fair value through other comprehensive income	(262,637,496)	(257,558,240)
Financial assets at amortized cost	(4,302,770)	(313,958)
Property, plant and equipment	(507,238,722)	(460,422,150)
Intangible assets	(9,542,387)	(9,329,869)
Proceeds from disposal or redemption of:		
Financial instruments at fair value through profit or loss - debt instruments	30,049	2,418,153
Financial assets at fair value through other comprehensive income	266,931,916	230,444,486
Financial assets at amortized cost	285,210	14,349,190
Property, plant and equipment	606,732	287,318
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	51,052	1,107
Derecognition of hedging financial instruments	(308,776)	(436,606)
Interest received	9,775,120	16,874,985
Proceeds from government grants - property, plant and equipment	1,044,327	2,565,338
Proceeds from government grants - land use right and others	25,369	850,623
Other dividends received	735,081	320,242
Dividends received from investments accounted for using equity method	2,752,043	1,718,954
Increase in prepayments for leases	(4,693,416)	-
Refundable deposits paid	(726,883)	(1,465,766)
Refundable deposits refunded	<u>1,431,837</u>	<u>1,019,294</u>
Net cash used in investing activities	<u>(505,781,714)</u>	<u>(458,801,647)</u>
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase (decrease) in short-term loans	(31,571,567)	31,804,302
Proceeds from short-term bills payable	7,485,303	-
Repayments of short-term bills payable	(7,500,000)	-
Proceeds from issuance of bonds	236,725,675	-
Repayment of bonds	(31,800,000)	(34,900,000)
Proceeds from long-term bank loans	2,000,000	-
Payments for transaction costs attributable to the issuance of bonds	(390,730)	-
Repayment of the principal portion of lease liabilities	(2,615,708)	(2,930,589)
Interest paid	(1,781,097)	(3,597,145)
Guarantee deposits received	145,633	62,203
Guarantee deposits refunded	(16,060)	(701,269)
Cash dividends	(259,303,805)	(259,303,805)
Donation from shareholders	7,269	4,006
Decrease in non-controlling interests	<u>-</u>	<u>(75,869)</u>
Net cash used in financing activities	<u>(88,615,087)</u>	<u>(269,638,166)</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2020	2019
EFFECT OF EXCHANGE RATE CHANGES ON CASH AND CASH EQUIVALENTS	\$ (23,498,100)	\$ (9,114,196)
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	204,771,311	(122,415,265)
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	<u>455,399,336</u>	<u>577,814,601</u>
CASH AND CASH EQUIVALENTS, END OF YEAR	<u>\$ 660,170,647</u>	<u>\$ 455,399,336</u>

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

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

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, selling, 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 9, 2021.

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 TSMC and its subsidiaries' (collectively as the "Company") accounting policies.

- b. Amendments to the Regulations Governing the Preparation of Financial Reports by Securities Issuers for application starting from 2021 and the IFRSs issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2021

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Amendments to IFRS 9, IAS 39, IFRS 7 and IFRS 16 "Interest Rate Benchmark Reform - Phase 2"	January 1, 2021

- c. The IFRSs issued by IASB but not yet endorsed and issued into effect by the FSC

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Annual Improvements to IFRS Standards 2018–2020	January 1, 2022
Amendments to IFRS 3 “Reference to the Conceptual Framework”	January 1, 2022
Amendments to IFRS 10 and IAS 28 “Sale or Contribution of Assets between an Investor and its Associate or Joint Venture”	To be determined by IASB
Amendments to IAS 1 “Classification of Liabilities as Current or Non-current”	January 1, 2023
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

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 as a result of the initial adoption of the aforementioned standards or interpretations and related applicable period. The related impact will be disclosed when the Company completes the 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, 2020	December 31, 2019	
TSMC	TSMC North America	Selling 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%	-	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 design, manufacture, and other related business in the semiconductor industry 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, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	100%	100%	-
	TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	100%	100%	d)
	VisEra Technologies Company Ltd. (VisEra Tech)	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	Hsin-Chu, Taiwan	87%	87%	-
	TSMC Arizona Corporation (TSMC Arizona)	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	Phoenix, Arizona, U.S.A.	100%	-	a), c)
	VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	98%	98%	a)
	VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in new start-up technology companies	Cayman Islands	98%	98%	a)

(Continued)

Name of Investor	Name of Investee	Main Businesses and Products	Establishment and Operating Location	Percentage of Ownership		Note
				December 31, 2020	December 31, 2019	
TSMC Partners	TSMC Development, Inc. (TSMC Development)	Investing in companies involved in the manufacturing related business in the semiconductor industry	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)
	InveStar Semiconductor Development Fund, Inc. (ISDF)	Investing in new start-up technology companies	Cayman Islands	-	97%	a), e)
	InveStar Semiconductor Development Fund, Inc. (II) LDC. (ISDF II)	Investing in new start-up technology companies	Cayman Islands	-	97%	a), e)
TSMC Development	WaferTech, LLC (WaferTech)	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	Washington, U.S.A.	100%	100%	-
VTAF III	Growth Fund Limited (Growth Fund)	Investing in new start-up technology 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 JDC has been established in January 2020.

Note c: TSMC Arizona has been established in November 2020.

Note d: Under the investment agreement entered into with the municipal government of Nanjing, China, the Company will make an investment in Nanjing in the amount of approximately US\$3 billion to establish a subsidiary operating a 300mm wafer fab with the capacity of 20,000 12-inch wafers per month, and a design service center. The aforementioned 300mm wafer fab has reached the capacity of 20,000 12-inch wafers per month.

Note e: ISDF and ISDF II have completed the liquidation procedures in November 2020.

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 instrument 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 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 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 or acquisition of the item of property, plant and equipment.

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.

Guarantee Deposit

Guarantee deposit mainly consists of cash received under deposit agreements with customers to ensure they have access to the Company's specified capacity. Cash received from customers is recorded as guarantee deposit upon receipt. Guarantee deposits are refunded to customers when terms and conditions set forth in the deposit agreements have been satisfied.

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, 2020	December 31, 2019
Cash and deposits in banks	\$ 653,580,548	\$ 452,734,378
Government bonds	3,716,119	2,188,149
Repurchase agreements	1,750,443	-
Commercial paper	<u>1,123,537</u>	<u>476,809</u>
	<u>\$ 660,170,647</u>	<u>\$ 455,399,336</u>

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, 2020	December 31, 2019
<u>Financial assets</u>		
Mandatorily measured at FVTPL		
Forward exchange contracts	\$ 2,259,412	\$ 162,155
Convertible bonds	-	123,759
Agency mortgage-backed securities	-	<u>40,925</u>
	<u>\$ 2,259,412</u>	<u>\$ 326,839</u>
<u>Financial liabilities</u>		
Held for trading		
Forward exchange contracts	<u>\$ 94,128</u>	<u>\$ 982,349</u>

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)
<u>December 31, 2020</u>		
Sell NT\$	January 2021 to March 2021	NT\$ 144,697,981
Sell US\$	January 2021 to March 2021	US\$ 1,176,858
<u>December 31, 2019</u>		
Sell NT\$	January 2020 to June 2020	NT\$ 108,428,027
Sell JPY	January 2020 to February 2020	JPY 57,471,581
Sell US\$	January 2020 to March 2020	US\$ 529,209

8. FINANCIAL ASSETS AT FAIR VALUE THROUGH OTHER COMPREHENSIVE INCOME

	December 31, 2020	December 31, 2019
Investments in debt instruments at FVTOCI		
Corporate bonds	\$ 56,593,623	\$ 51,790,045
Agency bonds/Agency mortgage-backed securities	43,977,113	51,966,460
Government bonds	13,459,503	12,824,223
Asset-backed securities	<u>8,368,264</u>	<u>10,815,849</u>
	<u>122,398,503</u>	<u>127,396,577</u>

(Continued)

	December 31, 2020	December 31, 2019
Investments in equity instruments at FVTOCI		
Non-publicly traded equity investments	\$ 4,514,940	\$ 4,124,337
Publicly traded stocks	<u>49,950</u>	<u>-</u>
	<u>4,564,890</u>	<u>4,124,337</u>
	<u>\$ 126,963,393</u>	<u>\$ 131,520,914</u>
Current	\$ 122,448,453	\$ 127,396,577
Noncurrent	<u>4,514,940</u>	<u>4,124,337</u>
	<u>\$ 126,963,393</u>	<u>\$ 131,520,914</u>

(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 the dividends are from investments held at the end of the reporting period.

For the years ended December 31, 2020 and 2019, as the Company adjusted its investment portfolio, equity investments designated at FVTOCI were divested for NT\$8 thousand and NT\$873,470 thousand, respectively. The related other equity-unrealized gain/loss on financial assets at FVTOCI of NT\$108,996 thousand and NT\$156,770 thousand were transferred to decrease and increase retained earnings, respectively.

As of December 31, 2020 and 2019, the cumulative loss allowance for expected credit loss of NT\$32,480 thousand and NT\$35,596 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, 2020	December 31, 2019
Corporate bonds	\$ 10,977,298	\$ 7,651,727
Less: Allowance for impairment loss	<u>(7,099)</u>	<u>(2,929)</u>
	<u>\$ 10,970,199</u>	<u>\$ 7,648,798</u>
Current	\$ 6,597,992	\$ 299,884
Noncurrent	<u>4,372,207</u>	<u>7,348,914</u>
	<u>\$ 10,970,199</u>	<u>\$ 7,648,798</u>

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, 2020	December 31, 2019
<u>Financial assets- current</u>		
Fair value hedges		
Interest rate futures contracts	\$ 47	\$ 22,380
Cash flow hedges		
Forward exchange contracts	_____ -	_____ 3,504
	<u>\$ 47</u>	<u>\$ 25,884</u>
<u>Financial liabilities- current</u>		
Fair value hedges		
Interest rate futures contracts	\$ 1,169	\$ -
Cash flow hedges		
Forward exchange contracts	_____ -	_____ 1,798
	<u>\$ 1,169</u>	<u>\$ 1,798</u>

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 Company expects that the value of the interest rate futures contracts and the value of the hedged financial assets will 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.

The following tables summarize the information relating to the hedges of interest rate risk.

December 31, 2020

Hedging Instruments	Contract Amount (US\$ in Thousands)	Maturity
Interest rate futures contracts - US Treasury bonds	US\$88,700	March 2021
		Accumulated Amount of Fair Value Hedge Adjustments
Hedged Items	Asset Carrying Amount	
Financial assets at FVTOCI	\$ 6,198,683	\$ 1,122

December 31, 2019

Hedging Instruments	Contract Amount (US\$ in Thousands)	Maturity
Interest rate futures contracts - US Treasury bonds	US\$122,200	March 2020
		Accumulated Amount of Fair Value Hedge Adjustments
Hedged Items	Asset Carrying Amount	
Financial assets at FVTOCI	\$ 7,364,727	\$ (22,380)

The effect for the years ended December 31, 2020 and 2019 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness Years Ended December 31	
	2020	2019
Hedging Instruments		
Interest rate futures contracts - US Treasury bonds	\$ (353,611)	\$ (164,740)
Hedged Items		
Financial assets at FVTOCI	<u>353,611</u>	<u>177,831</u>
	<u>\$ -</u>	<u>\$ 13,091</u>

Cash flow hedge

The Company entered into forward exchange contracts to partially hedge foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%. The forward exchange contracts have maturities of 12 months or less.

On the basis of economic relationships, the Company expects that the value of forward exchange contracts and the value of hedged transactions will change in opposite directions in response to movements in foreign exchange rates.

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty's own credit risk on the fair value of forward exchange contracts. No other sources of ineffectiveness emerged from these hedging relationships. For the years ended December 31, 2020 and 2019, refer to Note 22(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 following tables summarize the information relating to the hedges for foreign currency risk.

December 31, 2019

Hedging Instruments	Contract Amount (In Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	Sell NT\$ 1,342,392	January 2020	\$ (3,820)

The effect for the years ended December 31, 2020 and 2019 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2020	2019
Hedging Instruments		
Forward exchange contracts	\$ <u>24,085</u>	\$ <u>(109,592)</u>
Hedged Items		
Forecast transaction (capital expenditures)	\$ <u>(24,085)</u>	\$ <u>109,592</u>

11. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2020	December 31, 2019
At amortized cost		
Notes and accounts receivable	\$ 142,771,597	\$ 135,978,049
Less: Loss allowance	<u>(246,626)</u>	<u>(325,325)</u>
	142,524,971	135,652,724
At FVTOCI	<u>2,955,301</u>	<u>3,255,865</u>
	<u>\$ 145,480,272</u>	<u>\$ 138,908,589</u>

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, 2020	December 31, 2019
Not past due	\$ 140,933,622	\$ 126,134,762
Past due		
Past due within 30 days	4,784,425	13,082,080
Past due 31-60 days	8,708	12,794
Past due 61-120 days	48	1,033
Past due over 121 days	95	3,245
Less: Loss allowance	<u>(246,626)</u>	<u>(325,325)</u>
	<u>\$ 145,480,272</u>	<u>\$ 138,908,589</u>

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	
	2020	2019
Balance, beginning of year	\$ 325,325	\$ 7,253
Provision (Reversal)	(78,474)	318,290
Effect of exchange rate changes	<u>(225)</u>	<u>(218)</u>
Balance, end of year	<u>\$ 246,626</u>	<u>\$ 325,325</u>

For the years ended December 31, 2020 and 2019, 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, 2020	December 31, 2019
Finished goods	\$ 21,705,625	\$ 8,924,541
Work in process	91,672,870	51,969,105
Raw materials	14,715,963	16,552,275
Supplies and spare parts	<u>9,258,949</u>	<u>5,535,275</u>
	<u>\$ 137,353,407</u>	<u>\$ 82,981,196</u>

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, as illustrated below:

	Years Ended December 31	
	2020	2019
Inventory losses (reversal of write-down of inventories)	<u>\$ 3,664,513</u>	<u>\$ (1,983,048)</u>

The aforementioned reversal of write-down of inventories for the year ended December 31, 2019 excluded wafer contamination losses. Please refer to related losses in Note 37.

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, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	\$ 9,029,890	\$ 9,027,572	28%	28%
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	5,900,245	6,502,174	39%	39%

(Continued)

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	\$ 2,554,123	\$ 1,846,145	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	1,328,620	1,284,377	35%	35%
Mutual-Pak	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	New Taipei, Taiwan	28,183	38,520	28%	28%
			<u>\$ 18,841,061</u>	<u>\$ 18,698,788</u>		

(Concluded)

As of December 31, 2020 and 2019, 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 investments accounted for using the equity method 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, 2020	December 31, 2019
VIS	<u>\$ 53,849,925</u>	<u>\$ 36,812,923</u>
Xintec	<u>\$ 20,420,233</u>	<u>\$ 8,958,195</u>
GUC	<u>\$ 15,827,184</u>	<u>\$ 11,251,774</u>

14. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2020	December 31, 2019
Assets used by the Company	\$1,554,585,938	\$1,352,313,861
Assets subject to operating leases	<u>1,003,182</u>	<u>63,544</u>
	<u>\$1,555,589,120</u>	<u>\$1,352,377,405</u>

a. Assets used by the Company

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Cost</u>						
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	<u>\$ 3,942,625</u>	<u>\$ 522,447,474</u>	<u>\$ 3,607,005,732</u>	<u>\$ 68,862,648</u>	<u>\$ 223,965,360</u>	<u>\$ 4,426,223,839</u>

(Continued)

	Land and Land Improvements	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Accumulated depreciation and impairment</u>						
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	<u>\$ 506,129</u>	<u>\$ 271,799,471</u>	<u>\$ 2,555,529,969</u>	<u>\$ 43,802,332</u>	<u>\$ -</u>	<u>\$ 2,871,637,901</u>
Carrying amounts at December 31, 2020	<u>\$ 3,436,496</u>	<u>\$ 250,648,003</u>	<u>\$ 1,051,475,763</u>	<u>\$ 25,060,316</u>	<u>\$ 223,965,360</u>	<u>\$ 1,554,585,938</u>
<u>Cost</u>						
Balance at January 1, 2019	\$ 4,011,353	\$ 418,151,675	\$ 2,728,760,127	\$ 48,382,279	\$ 172,910,989	\$ 3,372,216,423
Additions	-	21,448,528	179,798,420	7,415,036	355,621,089	564,283,073
Disposals or retirements	-	(158,970)	(17,381,538)	(1,043,398)	-	(18,583,906)
Transfers from right-of-use assets	-	-	619,779	-	-	619,779
Effect of disposal of subsidiary	-	-	-	(508)	-	(508)
Effect of exchange rate changes	(19,555)	(1,366,170)	(5,173,820)	(142,045)	(236,992)	(6,938,582)
Balance at December 31, 2019	<u>\$ 3,991,798</u>	<u>\$ 438,075,063</u>	<u>\$ 2,886,622,968</u>	<u>\$ 54,611,364</u>	<u>\$ 528,295,086</u>	<u>\$ 3,911,596,279</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2019	\$ 550,575	\$ 217,899,243	\$ 2,049,278,908	\$ 32,525,129	\$ -	\$ 2,300,253,855
Additions	1,633	26,026,642	246,724,229	6,012,497	-	278,765,001
Disposals or retirements	-	(144,402)	(12,880,817)	(1,042,131)	-	(14,067,350)
Transfers from right-of-use assets	-	-	20,659	-	-	20,659
Reversal of impairment	-	-	(301,384)	-	-	(301,384)
Effect of disposal of subsidiary	-	-	-	(508)	-	(508)
Effect of exchange rate changes	(13,518)	(722,093)	(4,575,652)	(76,592)	-	(5,387,855)
Balance at December 31, 2019	<u>\$ 538,690</u>	<u>\$ 243,059,390</u>	<u>\$ 2,278,265,943</u>	<u>\$ 37,418,395</u>	<u>\$ -</u>	<u>\$ 2,559,282,418</u>
Carrying amounts at December 31, 2019	<u>\$ 3,453,108</u>	<u>\$ 195,015,673</u>	<u>\$ 608,357,025</u>	<u>\$ 17,192,969</u>	<u>\$ 528,295,086</u>	<u>\$ 1,352,313,861</u>

(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 2019, the Company recognized a reversal of impairment loss of NT\$301,384 thousand due to redeployment of certain idle machinery and equipment. Such reversal of impairment loss was recognized in other operating income and expenses.

b. Assets subject to operating leases

	Buildings	Machinery and Equipment	Total
<u>Cost</u>			
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	<u>-</u>	<u>1,199,011</u>	<u>1,199,011</u>
Balance at December 31, 2020	<u>\$ 227,529</u>	<u>\$1,199,011</u>	<u>\$1,426,540</u>
<u>Accumulated depreciation</u>			
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	<u>-</u>	<u>202,593</u>	<u>202,593</u>
Balance at December 31, 2020	<u>\$ 201,366</u>	<u>\$ 221,992</u>	<u>\$ 423,358</u>
Carrying amounts at December 31, 2020	<u>\$ 26,163</u>	<u>\$ 977,019</u>	<u>\$1,003,182</u>
<u>Cost</u>			
Balance at January 1, 2019	<u>\$ 562,610</u>	<u>\$ -</u>	<u>\$ 562,610</u>
Balance at December 31, 2019	<u>\$ 562,610</u>	<u>\$ -</u>	<u>\$ 562,610</u>
<u>Accumulated depreciation</u>			
Balance at January 1, 2019	\$ 474,899	\$ -	\$ 474,899
Additions	<u>24,167</u>	<u>-</u>	<u>24,167</u>
Balance at December 31, 2019	<u>\$ 499,066</u>	<u>\$ -</u>	<u>\$ 499,066</u>
Carrying amounts at December 31, 2019	<u>\$ 63,544</u>	<u>\$ -</u>	<u>\$ 63,544</u>

Operating leases relate to leases of buildings and leases of machinery and equipment with lease terms approximately between 1 to 5 years. The lessees do not have purchase options to acquire the assets at the expiry of the lease periods.

The maturity analysis of operating lease payments receivable from the buildings and machinery and equipment is as follows:

	December 31, 2020	December 31, 2019
Year 1	\$ 149,120	\$ 18,450
Year 2	16,992	16,992
Year 3	<u>-</u>	<u>16,992</u>
	<u>\$ 166,112</u>	<u>\$ 52,434</u>

15. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31, 2020	December 31, 2019
<u>Carrying amounts</u>		
Land	\$ 25,141,908	\$ 14,064,036
Buildings	2,544,742	2,351,809
Machinery and equipment	-	775,809
Office equipment	<u>41,732</u>	<u>40,748</u>
	<u>\$ 27,728,382</u>	<u>\$ 17,232,402</u>
	Years Ended December 31	
	2020	2019
Additions to right-of-use assets	<u>\$ 13,481,172</u>	<u>\$ 1,032,985</u>
Depreciation of right-of-use assets		
Land	\$ 1,312,888	\$ 957,065
Buildings	569,531	458,772
Machinery and equipment	775,809	1,184,374
Office equipment	<u>23,402</u>	<u>22,453</u>
	<u>\$ 2,681,630</u>	<u>\$ 2,622,664</u>
Income from subleasing right-of-use assets (classified under other operating income and expenses, net)	<u>\$ 79,624</u>	<u>\$ 55,026</u>

b. Lease liabilities

	December 31, 2020	December 31, 2019
<u>Carrying amounts</u>		
Current portion (classified under accrued expenses and other current liabilities)	\$ 1,828,025	\$ 2,275,084
Noncurrent portion	<u>20,560,649</u>	<u>15,041,833</u>
	<u>\$ 22,388,674</u>	<u>\$ 17,316,917</u>

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2020	December 31, 2019
Land	0.48%-2.14%	0.67%-2.14%
Buildings	0.54%-3.88%	0.67%-3.88%
Machinery and equipment	-	3.24%
Office equipment	0.28%-3.88%	0.64%-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.

The Company leases machinery and equipment for use in operation with lease terms of 2 years. The Company has purchase options to acquire leasehold machinery and equipment at the end of the lease terms. As of September 30, 2020, the aforementioned lease contract has been expired.

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, 2020	December 31, 2019
Year 1	\$ 144,099	\$ 58,569
Year 2	<u>-</u>	<u>1,885</u>
	<u>\$ 144,099</u>	<u>\$ 60,454</u>

e. Other lease information

	Years Ended December 31	
	2020	2019
Expenses relating to short-term leases	<u>\$ 3,153,451</u>	<u>\$ 5,007,057</u>
Expenses relating to low-value asset leases	<u>\$ 300</u>	<u>\$ 492</u>
Expenses relating to variable lease payments not included in the measurement of lease liabilities	<u>\$ 256,996</u>	<u>\$ 195,062</u>
	Years Ended December 31	
	2020	2019
Total cash outflow for leases	<u>\$ 6,354,610</u>	<u>\$ 7,724,421</u>

16. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
<u>Cost</u>					
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	<u>(256,774)</u>	<u>(2,165)</u>	<u>(333)</u>	<u>(79)</u>	<u>(259,351)</u>
Balance at December 31, 2020	<u>\$ 5,436,602</u>	<u>\$ 22,161,712</u>	<u>\$ 36,238,967</u>	<u>\$ 11,277,701</u>	<u>\$ 75,114,982</u>

(Continued)

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
<u>Accumulated amortization and impairment</u>					
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	<u>\$ -</u>	<u>\$ 12,226,066</u>	<u>\$ 30,111,759</u>	<u>\$ 7,008,978</u>	<u>\$ 49,346,803</u>
Carrying amounts at December 31, 2020	<u>\$ 5,436,602</u>	<u>\$ 9,935,646</u>	<u>\$ 6,127,208</u>	<u>\$ 4,268,723</u>	<u>\$ 25,768,179</u>
<u>Cost</u>					
Balance at January 1, 2019	\$ 5,795,488	\$ 10,974,458	\$ 29,594,483	\$ 7,656,524	\$ 54,020,953
Additions	-	4,879,562	3,710,381	647,755	9,237,698
Disposals or retirements	-	-	(260,904)	-	(260,904)
Effect of exchange rate changes	(102,112)	931	(19,950)	(1,283)	(122,414)
Balance at December 31, 2019	<u>\$ 5,693,376</u>	<u>\$ 15,854,951</u>	<u>\$ 33,024,010</u>	<u>\$ 8,302,996</u>	<u>\$ 62,875,333</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2019	\$ -	\$ 8,756,005	\$ 23,023,498	\$ 5,239,313	\$ 37,018,816
Additions	-	1,066,834	3,747,343	658,232	5,472,409
Disposals or retirements	-	-	(258,527)	-	(258,527)
Effect of exchange rate changes	-	931	(10,247)	(1,077)	(10,393)
Balance at December 31, 2019	<u>\$ -</u>	<u>\$ 9,823,770</u>	<u>\$ 26,502,067</u>	<u>\$ 5,896,468</u>	<u>\$ 42,222,305</u>
Carrying amounts at December 31, 2019	<u>\$ 5,693,376</u>	<u>\$ 6,031,181</u>	<u>\$ 6,521,943</u>	<u>\$ 2,406,528</u>	<u>\$ 20,653,028</u>

(Concluded)

The Company's goodwill has been tested for impairment at the end of the annual reporting period and the recoverable amount is determined based on the value in use. The value in use was calculated based on the cash flow forecast from the financial budgets covering the future five-year period, and the Company used annual discount rates of 8.0% in both years in its test of impairment as of December 31, 2020 and 2019, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2020 and 2019, the Company did not recognize any impairment loss on goodwill.

17. SHORT-TERM LOANS

	December 31, 2020	December 31, 2019
Unsecured loans		
Amount	<u>\$ 88,559,026</u>	<u>\$ 118,522,290</u>
Loan content		
US\$ (in thousands)	\$ 200,000	\$ 2,370,000
EUR (in thousands)	2,398,000	1,410,000
Annual interest rate	(0.54)%-0.33%	0.01%-2.22%
Maturity date	Due by February 2021	Due by May 2020

18. BONDS PAYABLE

	December 31, 2020	December 31, 2019
Domestic unsecured bonds	\$ 173,197,000	\$ 56,900,000
Overseas unsecured bonds	84,291,000	-
Less: Discounts on bonds payable	(782,916)	-
Less: Current portion	<u>(2,600,000)</u>	<u>(31,800,000)</u>
	<u>\$ 254,105,084</u>	<u>\$ 25,100,000</u>

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
<u>NT\$ unsecured bonds</u>					
100-2	B	January 2012 to January 2019	\$ 7,000,000	1.46%	Bullet repayment; interest payable annually
101-1	B	August 2012 to August 2019	9,000,000	1.40%	The same as above
101-2	B	September 2012 to September 2019	9,000,000	1.39%	The same as above
101-3	-	October 2012 to October 2022	4,400,000	1.53%	The same as above
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
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
102-3	B	August 2013 to August 2019	8,500,000	1.52%	The same as above
102-4	C	September 2013 to March 2019	1,400,000	1.60%	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)

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
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

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
109-6 (green bond)	A	December 2020 to December 2025	\$ 1,600,000	0.40%	Two equal installments in last two years; interest payable annually
	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

(Concluded)

Issuance	Tranche	Issuance Period	Total Amount (US\$ in Thousands)	Coupon Rate	Repayment and Interest Payment
<u>US\$ unsecured bonds</u>					
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

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

19. LONG-TERM BANK LOANS

	December 31, 2020
Unsecured loans	\$ 2,000,000
Less: Discounts on government grants	<u>(32,389)</u>
	<u>\$ 1,967,611</u>
Loan content	
Annual interest rate	0.4%
Maturity date	Due by September 2025

The long-term bank loans of the Company are with preferential interest rates subsidized by the government, and the loan proceeds are used to fund qualifying capital expenditure.

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 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\$2,809,484 thousand and NT\$2,609,733 thousand for the years ended December 31, 2020 and 2019, 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	
	2020	2019
Current service cost	\$ 123,311	\$ 135,645
Net interest expense	<u>81,604</u>	<u>123,951</u>
Components of defined benefit costs recognized in profit or loss	<u>204,915</u>	<u>259,596</u>
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(139,212)	(124,344)
		(Continued)

	Years Ended December 31	
	2020	2019
Actuarial loss (gain) arising from experience adjustments	\$ 494,051	\$ (438,009)
Actuarial gain arising from changes in demographic assumptions	-	(233,239)
Actuarial loss arising from changes in financial assumptions	<u>3,161,910</u>	<u>541,697</u>
Components of defined benefit costs recognized in other comprehensive income	<u>3,516,749</u>	<u>(253,895)</u>
Total	<u>\$ 3,721,664</u>	<u>\$ 5,701</u> (Concluded)

The pension costs of the aforementioned defined benefit plans were recognized in profit or loss by the following categories:

	Years Ended December 31	
	2020	2019
Cost of revenue	\$ 126,274	\$ 157,845
Research and development expenses	57,306	72,686
General and administrative expenses	18,248	25,063
Marketing expenses	<u>3,087</u>	<u>4,002</u>
	<u>\$ 204,915</u>	<u>\$ 259,596</u>

The amounts arising from the defined benefit obligation of the Company were as follows:

	December 31, 2020	December 31, 2019
Present value of defined benefit obligation	\$ 16,980,277	\$ 13,484,090
Fair value of plan assets	<u>(5,066,203)</u>	<u>(4,301,594)</u>
Net defined benefit liability	<u>\$ 11,914,074</u>	<u>\$ 9,182,496</u>

Movements in the present value of the defined benefit obligation were as follows:

	Years Ended December 31	
	2020	2019
Balance, beginning of year	\$ 13,484,090	\$ 13,662,684
Current service cost	123,311	135,645
Interest expense	118,808	175,401
Remeasurement:		
Actuarial loss (gain) arising from experience adjustments	494,051	(438,009)
Actuarial gain arising from changes in demographic assumptions	-	(233,239)
Actuarial loss arising from changes in financial assumptions	3,161,910	541,697
Benefits paid from plan assets	(398,986)	(344,131)
Benefits paid directly by the Company	<u>(2,907)</u>	<u>(15,958)</u>
Balance, end of year	<u>\$ 16,980,277</u>	<u>\$ 13,484,090</u>

Movements in the fair value of the plan assets were as follows:

	Years Ended December 31	
	2020	2019
Balance, beginning of year	\$ 4,301,594	\$ 4,011,279
Interest income	37,204	51,450
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	139,212	124,344
Contributions from employer	987,179	458,652
Benefits paid from plan assets	<u>(398,986)</u>	<u>(344,131)</u>
Balance, end of year	<u>\$ 5,066,203</u>	<u>\$ 4,301,594</u>

The fair value of the plan assets by major categories at the end of reporting period was as follows:

	December 31, 2020	December 31, 2019
Cash	\$ 632,769	\$ 713,204
Equity instruments	2,926,745	2,313,828
Debt instruments	<u>1,506,689</u>	<u>1,274,562</u>
	<u>\$ 5,066,203</u>	<u>\$ 4,301,594</u>

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, 2020	December 31, 2019
Discount rate	0.40%	0.90%
Future salary increase rate	3.00%(Note)	3.00%

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\$694,732 thousand and NT\$724,963 thousand as of December 31, 2020 and 2019, 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\$835,964 thousand and NT\$706,502 thousand as of December 31, 2020 and 2019, 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\$229,934 thousand to the defined benefit plans in the next year starting from December 31, 2020. The weighted average duration of the defined benefit obligation is 9 years.

21. GUARANTEE DEPOSITS

	December 31, 2020	December 31, 2019
Capacity guarantee	\$ -	\$ 1,499,400
Others	<u>349,999</u>	<u>230,481</u>
	<u>\$ 349,999</u>	<u>\$ 1,729,881</u>
Current portion (classified under accrued expenses and other current liabilities)	\$ 84,400	\$ 1,552,977
Noncurrent portion	<u>265,599</u>	<u>176,904</u>
	<u>\$ 349,999</u>	<u>\$ 1,729,881</u>

Some of guarantee deposits were refunded to customers by offsetting related accounts receivable.

22. EQUITY

a. Capital stock

	December 31, 2020	December 31, 2019
Authorized shares (in thousands)	<u>28,050,000</u>	<u>28,050,000</u>
Authorized capital	<u>\$ 280,500,000</u>	<u>\$ 280,500,000</u>
Issued and paid shares (in thousands)	<u>25,930,380</u>	<u>25,930,380</u>
Issued capital	<u>\$ 259,303,805</u>	<u>\$ 259,303,805</u>

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, 2020, 1,064,364 thousand ADSs of TSMC were traded on the NYSE. The number of common shares represented by the ADSs was 5,321,819 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2020	December 31, 2019
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 share of changes in equities of subsidiaries	121,843	121,843
From share of changes in equities of associates	302,526	302,234
Donations	<u>40,578</u>	<u>33,336</u>
	<u>\$ 56,347,243</u>	<u>\$ 56,339,709</u>

Under the relevant laws, the capital surplus generated from donations and the excess of the issuance price over the par value of capital stock (including the stock issued for new capital, mergers and convertible bonds) 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; however, when generated from issuance of restricted shares for employees, such capital surplus may not be used for any purpose.

c. Retained earnings and dividend policy

The amendments to TSMC's Articles of Incorporation had been approved by TSMC's shareholders in its meeting held on June 5, 2019, which stipulate 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.

TSMC's amended Articles of Incorporation provide that, 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 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 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 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 2020 is to be presented for approval in the TSMC's shareholders' meeting to be held on June 8, 2021 (expected).

The appropriation of 2018 earnings has been approved by TSMC's shareholders in its meeting held on June 5, 2019. The appropriation and cash dividends per share were as follows:

	Appropriation of Earnings	Cash Dividends Per Share (NT\$)
Legal capital reserve	\$ 35,113,088	
Special capital reserve	\$ (11,459,458)	
Cash dividends to shareholders	\$ 207,443,044	\$ 8.0

d. Others

Changes in others were as follows:

	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

(Continued)

	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
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	<u>\$ (57,001,627)</u>	<u>\$ 2,321,754</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (54,679,873)</u> (Concluded)

	Year Ended December 31, 2019				
	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	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)
Exchange differences arising on translation of foreign operations	(14,693,561)	-	-	-	(14,693,561)
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	334,537	-	-	334,537
Debt instruments	-	3,097,329	-	-	3,097,329
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(162,118)	-	-	(162,118)
Cumulative unrealized gain (loss) of debt instruments transferred to profit or loss due to disposal	-	(537,835)	-	-	(537,835)
Loss allowance adjustments from debt instruments	-	6,879	-	-	6,879
Other comprehensive income transferred to profit or loss due to disposal of subsidiary	4,598	-	-	-	4,598
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	(109,592)	-	(109,592)
Transferred to initial carrying amount of hedged items	-	-	82,276	-	82,276
Share of other comprehensive income (loss) of associates	(140,090)	(11,903)	(105)	-	(152,098)
Share of unearned stock-based employee compensation of associates	-	-	-	1,653	1,653
Income tax effect	-	9,476	-	-	9,476
Balance, end of year	<u>\$ (26,871,400)</u>	<u>\$ (692,959)</u>	<u>\$ (3,820)</u>	<u>\$ (190)</u>	<u>\$ (27,568,369)</u>

The aforementioned other equity includes the changes in other equities of TSMC and TSMC's share of its subsidiaries and associates.

23. NET REVENUE

a. Disaggregation of revenue from contracts with customers

Product	Years Ended December 31	
	2020	2019
Wafer	\$1,178,456,273	\$ 927,317,351
Others	<u>160,798,538</u>	<u>142,668,097</u>
	<u>\$1,339,254,811</u>	<u>\$1,069,985,448</u>

Geography	Years Ended December 31	
	2020	2019
Taiwan	\$ 129,082,884	\$ 84,255,256
United States	817,910,976	634,713,043
China	233,783,358	208,101,401
Europe, the Middle East and Africa	70,213,432	67,568,157
Japan	63,299,176	57,468,605
Others	<u>24,964,985</u>	<u>17,878,986</u>
	<u>\$1,339,254,811</u>	<u>\$1,069,985,448</u>

The Company categorized the net revenue mainly based on the countries where the customers are headquartered.

Platform	Years Ended December 31	
	2020	2019
Smartphone	\$ 645,303,613	\$ 523,612,863
High Performance Computing	439,809,984	315,822,311
Internet of Things	110,355,188	86,342,707
Automotive	44,367,562	47,914,518
Digital Consumer Electronics	54,555,665	53,733,395
Others	<u>44,862,799</u>	<u>42,559,654</u>
	<u>\$1,339,254,811</u>	<u>\$1,069,985,448</u>

Resolution	Years Ended December 31	
	2020	2019
5-nanometer	\$ 90,934,485	\$ -
7-nanometer	394,836,964	249,548,139
10-nanometer	3,403,151	23,266,355
16-nanometer	197,959,003	186,700,858
20-nanometer	8,450,865	9,535,831
28-nanometer	149,367,729	149,578,719
40/45-nanometer	103,176,542	93,366,285
65-nanometer	61,226,671	69,250,008
90-nanometer	29,380,358	25,624,251
0.11/0.13 micron	33,197,137	22,947,287
0.15/0.18 micron	86,008,475	77,564,492
0.25 micron and above	<u>20,514,893</u>	<u>19,935,126</u>
Wafer revenue	<u>\$1,178,456,273</u>	<u>\$ 927,317,351</u>

b. Contract balances

	December 31, 2020	December 31, 2019	January 1, 2019
Contract liabilities (classified under accrued expenses and other current liabilities)	<u>\$ 13,775,088</u>	<u>\$ 6,784,323</u>	<u>\$ 4,684,024</u>

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\$4,737,915 thousand and NT\$3,876,603 thousand for the years ended December 31, 2020 and 2019, respectively.

c. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms, which amounted to NT\$40,453,153 thousand and NT\$36,211,421 thousand for the years ended December 31, 2020 and 2019, respectively. As of December 31, 2020 and 2019, the aforementioned refund liabilities amounted to NT\$33,194,765 thousand and NT\$19,620,159 thousand (classified under accrued expenses and other current liabilities), respectively.

24. INTEREST INCOME

	Years Ended December 31	
	2020	2019
Interest income		
Bank deposits	\$ 5,139,149	\$ 11,454,032
Financial assets at FVTPL	2,522	339,480
Financial assets at FVTOCI	3,121,856	3,476,192
Financial assets at amortized cost	<u>754,873</u>	<u>919,670</u>
	<u>\$ 9,018,400</u>	<u>\$ 16,189,374</u>

25. FINANCE COSTS

	Years Ended December 31	
	2020	2019
Interest expense		
Corporate bonds	\$ 1,337,347	\$ 1,139,935
Bank loans	500,875	1,869,335
Lease liabilities	227,752	240,927
Others	<u>15,481</u>	<u>650</u>
	<u>\$ 2,081,455</u>	<u>\$ 3,250,847</u>

26. OTHER GAINS AND LOSSES, NET

	<u>Years Ended December 31</u>	
	2020	2019
Gain on disposal of financial assets, net		
Investments in debt instruments at FVTOCI	\$ 1,439,420	\$ 537,835
Loss on disposal of subsidiaries	-	(4,598)
Gain (loss) on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	8,244,491	(2,360,699)
Gain arising from fair value hedges, net	-	13,091
The reversal (accrual) of expected credit loss of financial assets		
Investments in debt instruments at FVTOCI	891	(6,879)
Financial assets at amortized cost	(4,563)	5,165
Other gains, net	<u>426,171</u>	<u>665,070</u>
	<u>\$ 10,106,410</u>	<u>\$ (1,151,015)</u>

27. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	<u>Years Ended December 31</u>	
	2020	2019
Current income tax expense		
Current tax expense recognized in the current year	\$ 72,705,385	\$ 45,411,178
Income tax adjustments on prior years	38,701	196,882
Other income tax adjustments	<u>150,204</u>	<u>(41,465)</u>
	72,894,290	45,566,595
Deferred income tax benefit		
The origination and reversal of temporary differences	<u>(6,275,192)</u>	<u>(1,065,068)</u>
Income tax expense recognized in profit or loss	<u>\$ 66,619,098</u>	<u>\$ 44,501,527</u>

A reconciliation of income before income tax and income tax expense recognized in profit or loss was as follows:

	<u>Years Ended December 31</u>	
	2020	2019
Income before tax	<u>\$ 584,777,180</u>	<u>\$ 389,845,336</u>
Income tax expense at the statutory rate	\$ 118,837,423	\$ 79,053,188
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	1,009,758	(4,180,168)
Tax-exempt income	(65,988,096)	(39,808,121)
Additional income tax under the Alternative Minimum Tax Act	18,872,837	10,367,916
Additional income tax on unappropriated earnings	-	5,903,794
		(Continued)

	Years Ended December 31	
	2020	2019
The origination and reversal of temporary differences	\$ (6,275,192)	\$ (1,065,068)
Income tax credits	<u>(26,537)</u>	<u>(5,925,431)</u>
	66,430,193	44,346,110
Income tax adjustments on prior years	38,701	196,882
Other income tax adjustments	<u>150,204</u>	<u>(41,465)</u>
Income tax expense recognized in profit or loss	<u>\$ 66,619,098</u>	<u>\$ 44,501,527</u> (Concluded)

Under the amendment to the R.O.C Statute of Industrial Innovation in 2019, the amounts of unappropriated earnings in 2018 and thereafter used for building or purchasing specific assets or technologies can qualify for deduction when computing the income tax on unappropriated earnings.

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	
	2020	2019
Deferred income tax benefit (expense)		
Related to remeasurement of defined benefit obligation	\$ 422,010	\$ (30,468)
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	<u>653</u>	<u>9,476</u>
	<u>\$ 422,663</u>	<u>\$ (20,992)</u>

c. Deferred income tax balance

The analysis of deferred income tax assets and liabilities was as follows:

	December 31, 2020	December 31, 2019
<u>Deferred income tax assets</u>		
Temporary differences		
Depreciation	\$ 19,354,383	\$ 13,547,220
Refund liability	3,755,131	2,150,352
Net defined benefit liability	1,341,960	1,016,248
Unrealized loss on inventories	858,463	469,430
Deferred compensation cost	330,340	323,093
Investments in equity instruments at FVTOCI	66,393	65,740
Others	<u>251,514</u>	<u>356,275</u>
	<u>\$ 25,958,184</u>	<u>\$ 17,928,358</u> (Continued)

**December 31,
2020** **December 31,
2019**

Deferred income tax liabilities

Temporary differences

Unrealized exchange gains	\$ (866,495)	\$ (333,606)
Others	<u>(863,446)</u>	<u>(10,787)</u>
	<u>\$ (1,729,941)</u>	<u>\$ (344,393)</u>

(Concluded)

Year Ended December 31, 2020

	Balance, Beginning of Year	Recognized in			Balance, End of Year
		Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	
<u>Deferred income tax assets</u>					
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	<u>356,275</u>	<u>(91,590)</u>	<u>-</u>	<u>(13,171)</u>	<u>251,514</u>
	<u>\$ 17,928,358</u>	<u>\$ 7,660,740</u>	<u>\$ 422,663</u>	<u>\$ (53,577)</u>	<u>\$ 25,958,184</u>

Deferred income tax liabilities

Temporary differences

Unrealized exchange gains	\$ (333,606)	\$ (532,889)	\$ -	\$ -	\$ (866,495)
Others	<u>(10,787)</u>	<u>(852,659)</u>	<u>-</u>	<u>-</u>	<u>(863,446)</u>
	<u>\$ (344,393)</u>	<u>\$ (1,385,548)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (1,729,941)</u>

Year Ended December 31, 2019

	Balance, Beginning of Year	Recognized in			Balance, End of Year
		Profit or Loss	Other Comprehensive Income	Effect of Exchange Rate Changes	
<u>Deferred income tax assets</u>					
Temporary differences					
Depreciation	\$ 11,839,221	\$ 1,727,762	\$ -	\$ (19,763)	\$ 13,547,220
Refund liability	2,594,003	(443,194)	-	(457)	2,150,352
Net defined benefit liability	1,084,874	(38,158)	(30,468)	-	1,016,248
Unrealized loss on inventories	750,995	(280,734)	-	(831)	469,430
Deferred compensation cost	271,711	59,365	-	(7,983)	323,093
Investments in equity instruments at FVTOCI	56,191	73	9,476	-	65,740
Others	<u>209,392</u>	<u>151,063</u>	<u>-</u>	<u>(4,180)</u>	<u>356,275</u>
	<u>\$ 16,806,387</u>	<u>\$ 1,176,177</u>	<u>\$ (20,992)</u>	<u>\$ (33,214)</u>	<u>\$ 17,928,358</u>

Deferred income tax liabilities

Temporary differences

Unrealized exchange gains	\$ (61,677)	\$ (271,929)	\$ -	\$ -	\$ (333,606)
Others	<u>(171,607)</u>	<u>160,820</u>	<u>-</u>	<u>-</u>	<u>(10,787)</u>
	<u>\$ (233,284)</u>	<u>\$ (111,109)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (344,393)</u>

- d. The deductible temporary differences for which no deferred income tax assets have been recognized

As of December 31, 2020 and 2019, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$55,521,034 thousand and NT\$33,445,504 thousand, respectively.

- e. Unused tax-exemption information

As of December 31, 2020, the profits generated from the following projects 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
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- f. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2020 and 2019, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT\$152,827,360 thousand and NT\$131,085,673 thousand, respectively.

- g. Income tax examination

The tax authorities have examined income tax returns of TSMC through 2018. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

28. EARNINGS PER SHARE

	Years Ended December 31	
	2020	2019
Basic EPS	<u>\$ 19.97</u>	<u>\$ 13.32</u>
Diluted EPS	<u>\$ 19.97</u>	<u>\$ 13.32</u>

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT\$)
<u>Year Ended December 31, 2020</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 517,885,387</u>	<u>25,930,380</u>	<u>\$ 19.97</u>
<u>Year Ended December 31, 2019</u>			
Basic/Diluted EPS			
Net income available to common shareholders of the parent	<u>\$ 345,263,668</u>	<u>25,930,380</u>	<u>\$ 13.32</u>

29. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	<u>Years Ended December 31</u>	
	<u>2020</u>	<u>2019</u>
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	\$ 299,311,405	\$ 256,530,964
Recognized in operating expenses	25,191,358	24,856,701
Recognized in other operating income and expenses	<u>35,680</u>	<u>24,167</u>
	<u>\$ 324,538,443</u>	<u>\$ 281,411,832</u>
b. Amortization of intangible assets		
Recognized in cost of revenue	\$ 4,837,728	\$ 3,069,901
Recognized in operating expenses	<u>2,348,520</u>	<u>2,402,508</u>
	<u>\$ 7,186,248</u>	<u>\$ 5,472,409</u>
c. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	\$ 2,809,484	\$ 2,609,733
Defined benefit plans	<u>204,915</u>	<u>259,596</u>
	3,014,399	2,869,329
Other employee benefits	<u>137,803,038</u>	<u>107,115,281</u>
	<u>\$ 140,817,437</u>	<u>\$ 109,984,610</u>
Employee benefits expense summarized by function		
Recognized in cost of revenue	\$ 83,098,994	\$ 64,701,955
Recognized in operating expenses	<u>57,718,443</u>	<u>45,282,655</u>
	<u>\$ 140,817,437</u>	<u>\$ 109,984,610</u>

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:

	<u>Years Ended December 31</u>	
	<u>2020</u>	<u>2019</u>
Profit sharing bonus to employees	<u>\$ 34,753,184</u>	<u>\$ 23,165,745</u>

TSMC's profit sharing bonus to employees and compensation to directors for 2020, 2019 and 2018 had been approved by the Board of Directors of TSMC, as illustrated below:

Resolution Date of TSMC's Board of Directors in its meeting	Years Ended December 31		
	2020 February 9, 2021	2019 February 11, 2020	2018 February 19, 2019
Profit sharing bonus to employees	\$ 34,753,184	\$ 23,165,745	\$ 23,570,040
Compensation to directors	\$ 509,753	\$ 360,404	\$ 349,272

There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2020, 2019 and 2018, 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	
	2020	2019
Additions of financial assets at FVTOCI	\$ 268,653,527	\$ 257,824,493
Conversion of convertible bonds into equity securities	(120,548)	-
Changes in accrued expenses and other current liabilities	<u>(5,895,483)</u>	<u>(266,253)</u>
Payments for acquisition of financial assets at FVTOCI	<u>\$ 262,637,496</u>	<u>\$ 257,558,240</u>
Disposal of financial assets at FVTOCI	\$ 269,011,852	\$ 229,525,134
Changes in other financial assets	<u>(2,079,936)</u>	<u>919,352</u>
Proceeds from disposal of financial assets at FVTOCI	<u>\$ 266,931,916</u>	<u>\$ 230,444,486</u>
Additions of property, plant and equipment	\$ 525,720,748	\$ 564,283,073
Changes in other financial assets	584,782	472,504
Exchange of assets	(1,148)	(3,287,138)
Changes in payables to contractors and equipment suppliers	(19,085,925)	(100,964,013)
Transferred to initial carrying amount of hedged items	<u>20,265</u>	<u>(82,276)</u>
Payments for acquisition of property, plant and equipment	<u>\$ 507,238,722</u>	<u>\$ 460,422,150</u>
Additions of intangible assets	\$ 12,559,467	\$ 9,237,698
Changes in other financial assets	10,457	22,236
Changes in account payable	191,429	69,935
Changes in accrued expenses and other current liabilities	<u>(3,218,966)</u>	<u>-</u>
Payments for acquisition of intangible assets	<u>\$ 9,542,387</u>	<u>\$ 9,329,869</u>

b. Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2020	Financing Cash Flow	Non-cash changes			Balance as of December 31, 2020
			Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	
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
Guarantee deposits	<u>1,729,881</u>	<u>129,573</u>	<u>1,795</u>	<u>-</u>	<u>(1,511,250)</u>	<u>349,999</u>
Total	<u>\$ 194,469,088</u>	<u>\$ 172,273,218</u>	<u>\$ (3,226,945)</u>	<u>\$ 7,742,231</u>	<u>\$ (1,287,198)</u>	<u>\$ 369,970,394</u>

	Balance as of January 1, 2019	Financing Cash Flow	Non-cash changes			Balance as of December 31, 2019
			Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	
Short-term loans	\$ 88,754,640	\$ 31,804,302	\$ (2,036,652)	\$ -	\$ -	\$ 118,522,290
Bonds payable	91,800,000	(34,900,000)	-	-	-	56,900,000
Lease liabilities	19,903,615	(3,174,032)	(73,290)	419,697	240,927	17,316,917
Guarantee deposits	<u>10,189,045</u>	<u>(639,066)</u>	<u>4,474</u>	<u>-</u>	<u>(7,824,572)</u>	<u>1,729,881</u>
Total	<u>\$ 210,647,300</u>	<u>\$ (6,908,796)</u>	<u>\$ (2,105,468)</u>	<u>\$ 419,697</u>	<u>\$ (7,583,645)</u>	<u>\$ 194,469,088</u>

Note: Other changes include amortization of bonds payable, amortization of long-term bank loan interest subsidy, financial cost of lease liabilities and guarantee deposits refunded to customers by offsetting related accounts receivable.

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, 2020	December 31, 2019
Financial assets		
FVTPL (Note 1)	\$ 2,259,412	\$ 326,839
FVTOCI (Note 2)	129,918,694	134,776,779
Hedging financial assets	47	25,884
Amortized cost (Note 3)	<u>826,293,705</u>	<u>612,740,640</u>
	<u>\$ 958,471,858</u>	<u>\$ 747,870,142</u>
Financial liabilities		
FVTPL (Note 4)	\$ 94,128	\$ 982,349
Hedging financial liabilities	1,169	1,798
Amortized cost (Note 5)	<u>748,129,332</u>	<u>533,581,640</u>
	<u>\$ 748,224,629</u>	<u>\$ 534,565,787</u>

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 and guarantee deposits.

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 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

The majority of the Company's revenue is denominated in U.S. dollar and over one-half of its capital expenditures are denominated in currencies other than NT dollar, primarily in U.S. dollar, Japanese yen and Euro. As a result, any significant fluctuations to its disadvantage in 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 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, 2020 and 2019, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT\$897,722 thousand and NT\$2,137,338 thousand, respectively, and decreased its other comprehensive income NT\$107,690 thousand for the year ended December 31, 2019, 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 rate 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 fair value by NT\$3,143,569 thousand and NT\$3,517,424 thousand for the years ended December 31, 2020 and 2019, respectively. The decreases were composed of NT\$3,143,569 thousand decrease and NT\$3,516,604 thousand decrease in other comprehensive income for the years ended December 31, 2020 and 2019, respectively, and NT\$820 thousand decrease in net income for the year ended December 31, 2019.

The majority of the Company's short-term debt is floating-rate, hence a rise in interest rates may result in higher interest expense than predicted. 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, 2020 and 2019, the other comprehensive income would have decreased by NT\$446,470 thousand and NT\$401,879 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, 2020 and 2019, 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, 2020 and 2019, the expected credit loss increases NT\$1,054 thousand and NT\$655 thousand, respectively. The changes are mainly due to investment portfolio adjustment and changes in credit rating of investment securities.

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, fixed income investments at FVTPL, 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
<u>December 31, 2020</u>					
<u>Non-derivative financial liabilities</u>					
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
					(Continued)

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
Lease liabilities (including those classified under accrued expenses and other current liabilities)	\$ 2,024,212	\$ 3,566,719	\$ 3,198,845	\$ 15,067,857	\$ 23,857,633
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	84,400	113,520	151,746	333	349,999
	<u>366,897,819</u>	<u>32,159,217</u>	<u>64,508,347</u>	<u>222,220,325</u>	<u>685,785,708</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	177,764,155	-	-	-	177,764,155
Inflows	(181,457,960)	-	-	-	(181,457,960)
	<u>(3,693,805)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(3,693,805)</u>
	<u>\$ 363,204,014</u>	<u>\$ 32,159,217</u>	<u>\$ 64,508,347</u>	<u>\$ 222,220,325</u>	<u>\$ 682,091,903</u>
<u>December 31, 2019</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 118,562,641	\$ -	\$ -	\$ -	\$ 118,562,641
Accounts payable (including related parties)	40,205,966	-	-	-	40,205,966
Payables to contractors and equipment suppliers	140,810,703	-	-	-	140,810,703
Accrued expenses and other current liabilities	45,760,898	-	-	-	45,760,898
Bonds payable	32,338,853	7,777,715	18,203,601	-	58,320,169
Lease liabilities (including those classified under accrued expenses and other current liabilities)	2,475,177	2,782,860	2,484,478	10,947,730	18,690,245
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	1,552,977	121,047	55,501	356	1,729,881
	<u>381,707,215</u>	<u>10,681,622</u>	<u>20,743,580</u>	<u>10,948,086</u>	<u>424,080,503</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	141,450,762	-	-	-	141,450,762
Inflows	(141,128,914)	-	-	-	(141,128,914)
	<u>321,848</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>321,848</u>
	<u>\$ 382,029,063</u>	<u>\$ 10,681,622</u>	<u>\$ 20,743,580</u>	<u>\$ 10,948,086</u>	<u>\$ 424,402,351</u> (Concluded)

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
<u>December 31, 2020</u>					
Lease liabilities	<u>\$ 7,401,969</u>	<u>\$ 5,253,877</u>	<u>\$ 2,255,185</u>	<u>\$ 156,826</u>	<u>\$ 15,067,857</u>
<u>December 31, 2019</u>					
Lease liabilities	<u>\$ 5,581,116</u>	<u>\$ 3,691,272</u>	<u>\$ 1,600,962</u>	<u>\$ 74,380</u>	<u>\$ 10,947,730</u>

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, 2020			
	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>				
Mandatorily measured at FVTPL				
Forward exchange contracts	\$ <u> -</u>	\$ <u> 2,259,412</u>	\$ <u> -</u>	\$ <u> 2,259,412</u>
<u>Financial assets at FVTOCI</u>				
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	<u> -</u>	<u> 2,955,301</u>	<u> -</u>	<u> 2,955,301</u>
	<u>\$ 13,329,104</u>	<u>\$ 112,074,650</u>	<u>\$ 4,514,940</u>	<u>\$ 129,918,694</u>
<u>Hedging financial assets</u>				
Fair value hedges				
Interest rate futures contracts	\$ <u> 47</u>	\$ <u> -</u>	\$ <u> -</u>	\$ <u> 47</u>

(Continued)

	December 31, 2020			
	Level 1	Level 2	Level 3	Total
<u>Financial liabilities at FVTPL</u>				
Held for trading				
Forward exchange contracts	\$ -	\$ 94,128	\$ -	\$ 94,128
<u>Hedging financial liabilities</u>				
Fair value hedges				
Interest rate futures contracts	\$ 1,169	\$ -	\$ -	\$ 1,169
				(Concluded)

The transfer from Level 2 to Level 1 is because quoted prices (unadjusted) in active markets became available for such equity investment.

	December 31, 2019			
	Level 1	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>				
Mandatorily measured at FVTPL				
Forward exchange contracts	\$ -	\$ 162,155	\$ -	\$ 162,155
Convertible bonds	-	-	123,759	123,759
Agency mortgage-backed securities	-	40,925	-	40,925
	<u>\$ -</u>	<u>\$ 203,080</u>	<u>\$ 123,759</u>	<u>\$ 326,839</u>
<u>Financial assets at FVTOCI</u>				
Investments in debt instruments				
Agency bonds/Agency mortgage-backed securities	\$ -	\$ 51,966,460	\$ -	\$ 51,966,460
Corporate bonds	-	51,790,045	-	51,790,045
Government bonds	12,678,086	146,137	-	12,824,223
Asset-backed securities	-	10,815,849	-	10,815,849
Investments in equity instruments				
Non-publicly traded equity investments	-	39,196	4,085,141	4,124,337
Notes and accounts receivable, net	-	3,255,865	-	3,255,865
	<u>\$ 12,678,086</u>	<u>\$ 118,013,552</u>	<u>\$ 4,085,141</u>	<u>\$ 134,776,779</u>
<u>Hedging financial assets</u>				
Fair value hedges				
Interest rate futures contracts	\$ 22,380	\$ -	\$ -	\$ 22,380
Cash flow hedges				
Forward exchange contracts	-	3,504	-	3,504
	<u>\$ 22,380</u>	<u>\$ 3,504</u>	<u>\$ -</u>	<u>\$ 25,884</u>
<u>Financial liabilities at FVTPL</u>				
Held for trading				
Forward exchange contracts	\$ -	\$ 982,349	\$ -	\$ 982,349
<u>Hedging financial liabilities</u>				
Cash flow hedges				
Forward exchange contracts	\$ -	\$ 1,798	\$ -	\$ 1,798

Reconciliation of Level 3 fair value measurements of financial assets

The financial assets measured at Level 3 fair value were financial assets at FVTPL and equity investments classified as financial assets at FVTOCI. Reconciliations for the years ended December 31, 2020 and 2019 were as follows:

	Years Ended December 31	
	2020	2019
Balance, beginning of year	\$ 4,208,900	\$ 3,910,681
Additions	175,202	372,315
Recognized in profit or loss	(3,821)	-
Recognized in other comprehensive income	409,014	129,497
Disposals and proceeds from return of capital of investments	(51,060)	(76,532)
Transfers out of level 3 (Note)	-	(43,610)
Effect of exchange rate changes	<u>(223,295)</u>	<u>(83,451)</u>
Balance, end of year	<u>\$ 4,514,940</u>	<u>\$ 4,208,900</u>

Note: The transfer from Level 3 to Level 2 is because observable market data became available for such equity investment.

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, government bonds and non-publicly traded equity investments - equity investments trading on the Emerging Stock Board are determined by quoted market prices provided by third party pricing services.
- 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 (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, 2020 and 2019, the Company uses unobservable inputs derived from discount for lack of marketability by 10%. When other inputs remain equal, the fair value will decrease by NT\$39,006 thousand and NT\$34,843 thousand if discounts for lack of marketability increase by 1%.

For the remaining few investments, the market approach is used to arrive at their fair values, for which the recent financing activities of investees, the market transaction prices of the similar companies and market conditions are considered.

In addition, the fair values of convertible bonds are determined by the present value of future cash flow based on a discount rate reflecting issuer's credit spread and market conditions, combined with the fair value of conversion option estimated by the option pricing model considering recent financing activities of the investee and market transaction prices of the similar companies.

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 measure at fair value:

	December 31, 2020	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Corporate bonds	<u>\$ 10,970,199</u>	<u>\$ 11,053,550</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 256,705,084</u>	<u>\$ 257,551,196</u>
	December 31, 2019	
	Carrying Amount	Level 2 Fair Value
<u>Financial assets</u>		
Financial assets at amortized costs		
Corporate bonds	<u>\$ 7,648,798</u>	<u>\$ 7,718,731</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 56,900,000</u>	<u>\$ 57,739,115</u>

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

<u>Related Party Name</u>	<u>Related Party Categories</u>
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

		<u>Years Ended December 31</u>	
		<u>2020</u>	<u>2019</u>
<u>Item</u>	<u>Related Party Categories</u>		
Net revenue from sale of goods	Associates	\$ 8,129,764	\$ 6,253,895
Net revenue from royalties	Associates	\$ 195,111	\$ 183,583

c. Purchases

		<u>Years Ended December 31</u>	
		<u>2020</u>	<u>2019</u>
<u>Related Party Categories</u>			
Associates		\$ 7,606,421	\$ 6,301,417

d. Receivables from related parties

		<u>December 31,</u>	<u>December 31,</u>
		<u>2020</u>	<u>2019</u>
<u>Item</u>	<u>Related Party Name/Categories</u>		
Receivables from related parties	GUC	\$ 370,643	\$ 741,898
	Xintec	<u>187,488</u>	<u>120,172</u>
		<u>\$ 558,131</u>	<u>\$ 862,070</u>
Other receivables from related parties	SSMC	\$ 45,291	\$ 46,506
	VIS	4,311	3,920
	Other associates	<u>1,043</u>	<u>1,227</u>
		<u>\$ 50,645</u>	<u>\$ 51,653</u>

e. Payables to related parties

		December 31, 2020	December 31, 2019
<u>Item</u>	<u>Related Party Name/Categories</u>		
Payables to related parties	Xintec	\$ 1,358,624	\$ 736,860
	SSMC	400,819	487,944
	VIS	311,406	153,977
	Other associates	<u>36,869</u>	<u>56,119</u>
		<u>\$ 2,107,718</u>	<u>\$ 1,434,900</u>

f. Others

		Years Ended December 31	
		2020	2019
<u>Item</u>	<u>Related Party Categories</u>		
Manufacturing expenses	Associates	<u>\$ 5,439,978</u>	<u>\$ 2,822,989</u>
Research and development expenses	Associates	<u>\$ 256,496</u>	<u>\$ 163,425</u>
General and administrative expenses	Other related parties	<u>\$ 120,000</u>	<u>\$ 120,000</u>

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.

g. Compensation of key management personnel

The compensation to directors and other key management personnel were as follows:

	Years Ended December 31	
	2020	2019
Short-term employee benefits	\$ 2,666,696	\$ 1,922,191
Post-employment benefits	<u>2,334</u>	<u>2,686</u>
	<u>\$ 2,669,030</u>	<u>\$ 1,924,877</u>

The compensation to directors and other key management personnel were determined by the Compensation Committee of TSMC in accordance with the individual performance and the market trends.

34. PLEDGED ASSETS

The Company provided certificate of deposits recorded in other financial assets as collateral mainly for building lease agreements. As of December 31, 2020 and 2019, the aforementioned other financial assets amounted to NT\$135,375 thousand and NT\$114,467 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, 2020, 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, 2020.
- c. On September 28, 2017, TSMC was contacted by the European Commission (the "Commission"), which asked us for information and documents concerning alleged anti-competitive practices in relation to semiconductor sales. We cooperated continuously with the Commission to provide the requested information and documents. The Commission subsequently decided to close the investigation in May 2020.
- d. TSMC entered into long-term purchase agreements of materials and supplies with multiple suppliers. The relative minimum purchase quantity and price are specified in the agreements.
- e. TSMC entered into a long-term purchase agreement of equipment. The relative purchase quantity and price are specified in the agreement.
- f. TSMC entered into long-term energy purchase agreements with multiple suppliers. The relative purchase period, quantity and price are specified in the agreements.
- g. Amounts available under unused letters of credit as of December 31, 2020 and 2019 were NT\$56,194 thousand and NT\$59,976 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)
<u>December 31, 2020</u>			
<u>Financial assets</u>			
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
<u>Financial liabilities</u>			
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
<u>December 31, 2019</u>			
<u>Financial assets</u>			
Monetary items			
USD	\$ 4,725,056	29.988	\$ 141,694,967
USD	455,984	6.966(Note 2)	13,674,047
EUR	3,638	33.653	122,418
JPY	72,369,239	0.2751	19,908,778
<u>Financial liabilities</u>			
Monetary items			
USD	6,018,287	29.988	180,476,401
EUR	2,551,824	33.653	85,876,547
JPY	101,455,514	0.2751	27,910,412

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.

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, 2020 and 2019, 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. SIGNIFICANT OPERATION LOSSES

On January 19, 2019, the Company discovered a wafer contamination issue in a fab in Taiwan caused by a batch of unqualified photoresist materials. After investigation, the Company immediately stopped using the unqualified materials. An estimated loss of NT\$3,400,000 thousand related to this event was recognized in cost of revenue for the three months ended March 31, 2019.

38. 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 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 11 attached.

39. 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, selling, 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, 2020	December 31, 2019
Taiwan	\$1,569,080,378	\$1,344,352,664
United States	9,455,505	8,850,099
China	34,456,406	38,586,614
Europe, the Middle East and Africa	174,169	186,238
Japan	327,250	27,074
Others	<u>2,996</u>	<u>3,064</u>
	<u>\$1,613,496,704</u>	<u>\$1,392,005,753</u>

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			
	2020		2019	
	Amount	%	Amount	%
Customer A	\$ 336,775,511	25	\$ 247,213,291	23
Customer B	167,390,758	12	152,876,885	14

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

FINANCINGS PROVIDED
FOR THE YEAR ENDED DECEMBER 31, 2020
(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	\$ 38,028,092 (RMB 6,000,000) & (US\$ 456,000)	\$ 34,752,490 (RMB 5,800,000) & (US\$ 350,000)	\$ 20,622,240 (RMB 4,800,000)	1.50%	The need for long-term financing	\$ -	Operating capital	\$ -	\$ -	\$ 64,492,719	\$ 64,492,719	
2	TSMC Global	TSMC	Other receivables from related parties	Yes	\$ 87,100,700 (US\$ 3,100,000)	\$ 87,100,700 (US\$ 3,100,000)	\$ 87,100,700 (US\$ 3,100,000)	0.00%	The need for short-term financing	\$ -	Operating capital	\$ -	\$ -	\$ 382,229,039	\$ 382,229,039	

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 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, 2020

(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Endorsement/ Guarantee Provider	Guaranteed Party		Limits on Endorsement/ Guarantee Amount Provided to Each Party (Notes 1 and 2)	Maximum Balance for the Period for Foreign Currencies in Thousands (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (US\$ in Thousands)	Amount of Endorsement/ Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Note 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 TSMC Global	Subsidiary Subsidiary	\$ 462,414,314 462,414,314	\$ 2,338,044 (US\$ 83,213) 84,291,000 (US\$ 3,000,000)	\$ 2,338,044 (US\$ 83,213) 84,291,000 (US\$ 3,000,000)	\$ 2,338,044 (US\$ 83,213) 84,291,000 (US\$ 3,000,000)	\$ - - -	0.13% 4.56% 0.02%	\$ 462,414,314 462,414,314 184,965,726	Yes Yes No	No No No	No No No
1	TSMC Japan	TSMC JDC	The same parent company	184,965,726	360,228 (JPY 1,320,000)	360,228 (JPY 1,320,000)	360,228 (JPY 1,320,000)	-	-	184,965,726	No	No	No

Note 1: The total amount of the endorsement/guarantee provided by TSMC to TSMC North America and TSMC Global 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 ten percent (10%) of TSMC's net worth.

Note 3: The maximum balance for the period and ending balance represent the amounts approved by the Board of Directors.

TABLE 3

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

MARKETABLE SECURITIES HELD

DECEMBER 31, 2020

(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, 2020			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	-	Financial assets at fair value through other comprehensive income	21,230	\$ 427,665	10	\$ 427,665	
	United Industrial Gases Co., Ltd.	-	"	10,500	313,992	7	313,992	
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	"	10,442	87,059	6	87,059	
	Global Investment Holding Co., Ltd.	-	"	806	5,944	2	5,944	
	W.K. Technology Fund IV	-	"	-	170	12	170	
	Horizon Ventures Fund	-	"	-	-	1	-	
	Crimson Asia Capital	-	"	-	-	-	-	
	TSMC Partners	Non-publicly traded equity investments	-	Financial assets at fair value through other comprehensive income	-	US\$ 22,944	6	US\$ 22,944
		Shanghai Walden Venture Capital Enterprise	-	"	-	US\$ 12,551	9	US\$ 12,551
		China Walden Venture Investments II, L.P.	-	"	-	US\$ 4,978	4	US\$ 4,978
China Walden Venture Investments III, L.P.		-	"	1,778	US\$ 3,600	4	US\$ 3,600	
TSMC Global	Inpria Corporation	-	"	10,440	-	25	-	
	Telia Innovations	-	"	6,333	-	10	-	
	Mcube Inc.	-	"	-	-	-	-	
	Corporate bond	-	Financial assets at fair value through other comprehensive income	-	US\$ 59,845	N/A	US\$ 59,845	
	Bank of America Corp	-	"	-	US\$ 44,484	N/A	US\$ 44,484	
	Citigroup Inc	-	"	-	US\$ 43,256	N/A	US\$ 43,256	
	Morgan Stanley	-	"	-	US\$ 40,089	N/A	US\$ 40,089	
	Goldman Sachs Group Inc/The	-	"	-	US\$ 36,031	N/A	US\$ 36,031	
	Wells Fargo & Co	-	"	-	US\$ 34,946	N/A	US\$ 34,946	
	Mitsubishi UFJ Financial Group Inc	-	"	-	US\$ 33,739	N/A	US\$ 33,739	
JPMorgan Chase & Co	-	"	-	US\$ 33,716	N/A	US\$ 33,716		
TSMC Global	AbbVie Inc	-	"	-	US\$ 27,424	N/A	US\$ 27,424	
	Sumitomo Mitsui Financial Group Inc	-	"	-	US\$ 21,597	N/A	US\$ 21,597	
	Metropolitan Life Global Funding I	-	"	-	US\$ 21,490	N/A	US\$ 21,490	
	Lloyds Banking Group PLC	-	"	-	US\$ 21,090	N/A	US\$ 21,090	
	Bristol-Myers Squibb Co	-	"	-	US\$ 20,795	N/A	US\$ 20,795	
	Mizuho Financial Group Inc	-	"	-	US\$ 20,448	N/A	US\$ 20,448	
	Toyota Motor Credit Corp	-	"	-	US\$ 19,179	N/A	US\$ 19,179	
	NatWest Markets PLC	-	"	-	US\$ 18,421	N/A	US\$ 18,421	
	Athene Global Funding	-	"	-	US\$ 17,442	N/A	US\$ 17,442	
	Credit Suisse AG/New York NY	-	"	-	US\$ 16,267	N/A	US\$ 16,267	
	Royal Bank of Canada	-	"	-	US\$ 16,113	N/A	US\$ 16,113	
	HSBC Holdings PLC	-	"	-	US\$ 15,983	N/A	US\$ 15,983	
	Hyundai Capital America	-	"	-	US\$ 15,912	N/A	US\$ 15,912	
	Macquarie Bank Ltd	-	"	-	US\$ 15,907	N/A	US\$ 15,907	
	Nordea Bank Abp	-	"	-	US\$ 15,762	N/A	US\$ 15,762	
	Apple Inc	-	"	-	US\$ 15,704	N/A	US\$ 15,704	
	Santander UK PLC	-	"	-	US\$ 15,621	N/A	US\$ 15,621	
	BP Capital Markets America Inc	-	"	-	-	-	-	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Toronto-Dominion Bank/The	-	Financial assets at fair value through other comprehensive income	-	US\$ 15,527	N/A	US\$ 15,527
	Volkswagen Group of America Finance LLC	-	"	-	US\$ 15,417	N/A	US\$ 15,417
	Comcast Corp	-	"	-	US\$ 14,947	N/A	US\$ 14,947
	BNP Paribas SA	-	"	-	US\$ 14,590	N/A	US\$ 14,590
	National Securities Cleaning Corp	-	"	-	US\$ 14,129	N/A	US\$ 14,129
	Principal Life Global Funding II	-	"	-	US\$ 13,580	N/A	US\$ 13,580
	Roper Technologies Inc	-	"	-	US\$ 13,249	N/A	US\$ 13,249
	AT&T Inc	-	"	-	US\$ 13,180	N/A	US\$ 13,180
	Banco Santander SA	-	"	-	US\$ 13,146	N/A	US\$ 13,146
	Banque Federative du Credit Mutuel SA	-	"	-	US\$ 13,019	N/A	US\$ 13,019
	Nationwide Building Society	-	"	-	US\$ 12,913	N/A	US\$ 12,913
	Chevron Corp	-	"	-	US\$ 12,771	N/A	US\$ 12,771
	Guardian Life Global Funding	-	"	-	US\$ 12,187	N/A	US\$ 12,187
	Bank of Nova Scotia/The	-	"	-	US\$ 12,144	N/A	US\$ 12,144
	Equifax Inc	-	"	-	US\$ 12,015	N/A	US\$ 12,015
	BPCE SA	-	"	-	US\$ 11,978	N/A	US\$ 11,978
	UBS Group Funding Switzerland AG	-	"	-	US\$ 11,758	N/A	US\$ 11,758
	US Bancorp	-	"	-	US\$ 11,651	N/A	US\$ 11,651
	Societe Generale SA	-	"	-	US\$ 11,567	N/A	US\$ 11,567
	American Honda Finance Corp	-	"	-	US\$ 11,354	N/A	US\$ 11,354
	American International Group Inc	-	"	-	US\$ 11,011	N/A	US\$ 11,011
	Amazon.com Inc	-	"	-	US\$ 10,846	N/A	US\$ 10,846
	TJX Cos Inc/The	-	"	-	US\$ 10,563	N/A	US\$ 10,563
	Verizon Communications Inc	-	"	-	US\$ 10,558	N/A	US\$ 10,558
	Jackson National Life Global Funding	-	"	-	US\$ 10,434	N/A	US\$ 10,434
	Equinor ASA	-	"	-	US\$ 10,372	N/A	US\$ 10,372
	Canadian Imperial Bank of Commerce	-	"	-	US\$ 10,297	N/A	US\$ 10,297
	DTE Energy Co	-	"	-	US\$ 10,173	N/A	US\$ 10,173
	BMW US Capital LLC	-	"	-	US\$ 10,125	N/A	US\$ 10,125
	Shire Acquisitions Investments Ireland DAC	-	"	-	US\$ 9,893	N/A	US\$ 9,893
	NextEra Energy Capital Holdings Inc	-	"	-	US\$ 9,527	N/A	US\$ 9,527
	Cox Communications Inc	-	"	-	US\$ 9,526	N/A	US\$ 9,526
	Sunittomo Mitsui Trust Bank Ltd	-	"	-	US\$ 9,446	N/A	US\$ 9,446
	Credit Agricole SA/London	-	"	-	US\$ 9,250	N/A	US\$ 9,250
	NIKE Inc	-	"	-	US\$ 9,232	N/A	US\$ 9,232
	Protective Life Global Funding	-	"	-	US\$ 9,137	N/A	US\$ 9,137
	New York Life Global Funding	-	"	-	US\$ 9,057	N/A	US\$ 9,057
	Bank of Montreal	-	"	-	US\$ 9,002	N/A	US\$ 9,002
	Svenska Handelsbanken AB	-	"	-	US\$ 8,963	N/A	US\$ 8,963
	Truist Bank	-	"	-	US\$ 8,775	N/A	US\$ 8,775
	Intuit Inc	-	"	-	US\$ 8,524	N/A	US\$ 8,524
	Barclays PLC	-	"	-	US\$ 8,492	N/A	US\$ 8,492
	Inter-American Development Bank	-	"	-	US\$ 8,211	N/A	US\$ 8,211
	Suncorp-Metway Ltd	-	"	-	US\$ 8,134	N/A	US\$ 8,134
	AIG Global Funding	-	"	-	US\$ 8,098	N/A	US\$ 8,098
	Fiserv Inc	-	"	-	US\$ 8,079	N/A	US\$ 8,079
	Oracle Corp	-	"	-	US\$ 7,822	N/A	US\$ 7,822
	Credit Suisse Group AG	-	"	-	US\$ 7,804	N/A	US\$ 7,804
	Exxon Mobil Corp	-	"	-	US\$ 7,576	N/A	US\$ 7,576
	Great-West Lifeco US Finance 2020 LP	-	"	-	US\$ 7,455	N/A	US\$ 7,455
	Skandinaviska Enskilda Banken AB	-	"	-	US\$ 7,409	N/A	US\$ 7,409
	AstraZeneca PLC	-	"	-	US\$ 7,333	N/A	US\$ 7,333

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Prudential Funding LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 7,322	N/A	US\$ 7,322	
	Huntington Bancshares Inc/OH	-	"	-	US\$ 7,249	N/A	US\$ 7,249	
	Tencent Holdings Ltd	-	"	-	US\$ 7,024	N/A	US\$ 7,024	
	Daimler Finance North America LLC	-	"	-	US\$ 6,772	N/A	US\$ 6,772	
	Scentre Group Trust 1 / Scentre Group Trust 2	-	"	-	US\$ 6,611	N/A	US\$ 6,611	
	Capital One Financial Corp	-	"	-	US\$ 6,498	N/A	US\$ 6,498	
	ING Groep NV	-	"	-	US\$ 6,484	N/A	US\$ 6,484	
	Cigna Corp	-	"	-	US\$ 6,445	N/A	US\$ 6,445	
	General Electric Co	-	"	-	US\$ 6,267	N/A	US\$ 6,267	
	UnitedHealth Group Inc	-	"	-	US\$ 6,255	N/A	US\$ 6,255	
	Bank of New York Mellon Corp/The	-	"	-	US\$ 6,241	N/A	US\$ 6,241	
	WPP Finance 2010	-	"	-	US\$ 6,236	N/A	US\$ 6,236	
	Standard Chartered PLC	-	"	-	US\$ 6,231	N/A	US\$ 6,231	
	Macquarie Group Ltd	-	"	-	US\$ 6,193	N/A	US\$ 6,193	
	Cargill Inc	-	"	-	US\$ 6,175	N/A	US\$ 6,175	
	UBS Group AG	-	"	-	US\$ 6,171	N/A	US\$ 6,171	
	CVS Health Corp	-	"	-	US\$ 5,981	N/A	US\$ 5,981	
	Analog Devices Inc	-	"	-	US\$ 5,975	N/A	US\$ 5,975	
	Alabama Power Co	-	"	-	US\$ 5,920	N/A	US\$ 5,920	
	Capital One NA	-	"	-	US\$ 5,919	N/A	US\$ 5,919	
	Intercontinental Exchange Inc	-	"	-	US\$ 5,873	N/A	US\$ 5,873	
	Shell International Finance BV	-	"	-	US\$ 5,824	N/A	US\$ 5,824	
	John Deere Capital Corp	-	"	-	US\$ 5,794	N/A	US\$ 5,794	
	American Express Co	-	"	-	US\$ 5,761	N/A	US\$ 5,761	
	BAT Capital Corp	-	"	-	US\$ 5,574	N/A	US\$ 5,574	
	Intel Corp	-	"	-	US\$ 5,547	N/A	US\$ 5,547	
	Thermo Fisher Scientific Inc	-	"	-	US\$ 5,516	N/A	US\$ 5,516	
	Microsoft Corp	-	"	-	US\$ 5,489	N/A	US\$ 5,489	
	Fox Corp	-	"	-	US\$ 5,483	N/A	US\$ 5,483	
	Charles Schwab Corp/The	-	"	-	US\$ 5,465	N/A	US\$ 5,465	
	Georgia-Pacific LLC	-	"	-	US\$ 5,422	N/A	US\$ 5,422	
	Dominion Energy Gas Holdings LLC	-	"	-	US\$ 5,403	N/A	US\$ 5,403	
	SMBC Aviation Capital Finance DAC	-	"	-	US\$ 5,399	N/A	US\$ 5,399	
	Fifth Third Bancorp	-	"	-	US\$ 5,399	N/A	US\$ 5,399	
	BB&T Corp	-	"	-	US\$ 5,381	N/A	US\$ 5,381	
	Sompo International Holdings Ltd	-	"	-	US\$ 5,344	N/A	US\$ 5,344	
	Merck & Co Inc	-	"	-	US\$ 5,302	N/A	US\$ 5,302	
	Sempra Energy	-	"	-	US\$ 5,257	N/A	US\$ 5,257	
	Federation des Caisses Desjardins du Quebec	-	"	-	US\$ 5,246	N/A	US\$ 5,246	
	National Bank of Canada	-	"	-	US\$ 5,214	N/A	US\$ 5,214	
	Tyson Foods Inc	-	"	-	US\$ 5,073	N/A	US\$ 5,073	
	Five Corners Funding Trust	-	"	-	US\$ 4,991	N/A	US\$ 4,991	
	Etel Finance International NV	-	"	-	US\$ 4,988	N/A	US\$ 4,988	
	Pacific Life Global Funding II	-	"	-	US\$ 4,961	N/A	US\$ 4,961	
	Danske Bank A/S	-	"	-	US\$ 4,897	N/A	US\$ 4,897	
	Nomura Holdings Inc	-	"	-	US\$ 4,875	N/A	US\$ 4,875	
	Sprint Spectrum Co LLC / Sprint Spectrum Co II LLC / Sprint Spectrum Co III LLC	-	"	-	US\$ 4,856	N/A	US\$ 4,856	
	Johnson & Johnson	-	"	-	US\$ 4,802	N/A	US\$ 4,802	
	Keurig Dr Pepper Inc	-	"	-	US\$ 4,796	N/A	US\$ 4,796	
	DNB Bank ASA	-	"	-	US\$ 4,726	N/A	US\$ 4,726	
	Moody's Corp	-	"	-	US\$ 4,695	N/A	US\$ 4,695	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note	
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)		Fair Value (Foreign Currencies in Thousands)
TSMC Global	Eversource Energy	-	Financial assets at fair value through other comprehensive income	-	US\$ 4,665	N/A	US\$ 4,665	
	Entergy Corp	"	"	-	US\$ 4,665	N/A	US\$ 4,665	
	Florida Power & Light Co	-	"	-	US\$ 4,569	N/A	US\$ 4,569	
	Gilead Sciences Inc	-	"	-	US\$ 4,496	N/A	US\$ 4,496	
	Barclays Bank PLC	-	"	-	US\$ 4,481	N/A	US\$ 4,481	
	Altria Group Inc	-	"	-	US\$ 4,450	N/A	US\$ 4,450	
	NiSource Inc	-	"	-	US\$ 4,440	N/A	US\$ 4,440	
	MPLX LP	-	"	-	US\$ 4,412	N/A	US\$ 4,412	
	PNC Bank NA	-	"	-	US\$ 4,335	N/A	US\$ 4,335	
	ERAC USA Finance LLC	-	"	-	US\$ 4,298	N/A	US\$ 4,298	
	Alimentation Couche-Tard Inc	-	"	-	US\$ 4,295	N/A	US\$ 4,295	
	Exelon Corp	-	"	-	US\$ 4,291	N/A	US\$ 4,291	
	Reliance Standard Life Global Funding II	-	"	-	US\$ 4,232	N/A	US\$ 4,232	
	National Australia Bank Ltd/New York	-	"	-	US\$ 4,208	N/A	US\$ 4,208	
	European Bank for Reconstruction & Development	-	"	-	US\$ 4,192	N/A	US\$ 4,192	
	Ameriprise Financial Inc	-	"	-	US\$ 4,147	N/A	US\$ 4,147	
	Bayer US Finance II LLC	-	"	-	US\$ 4,137	N/A	US\$ 4,137	
	Pricoa Global Funding I	-	"	-	US\$ 4,122	N/A	US\$ 4,122	
	American Express Credit Corp	-	"	-	US\$ 4,103	N/A	US\$ 4,103	
	BorgWarner Inc	-	"	-	US\$ 4,053	N/A	US\$ 4,053	
	Phillips 66	-	"	-	US\$ 4,044	N/A	US\$ 4,044	
	Banco Bilbao Vizcaya Argentaria SA	-	"	-	US\$ 4,027	N/A	US\$ 4,027	
	Welltower Inc	-	"	-	US\$ 3,986	N/A	US\$ 3,986	
	BOC Aviation Ltd	-	"	-	US\$ 3,976	N/A	US\$ 3,976	
	VF Corp	-	"	-	US\$ 3,972	N/A	US\$ 3,972	
	Compass Bank	-	"	-	US\$ 3,950	N/A	US\$ 3,950	
	KeyBank NA/Cleveland OH	-	"	-	US\$ 3,920	N/A	US\$ 3,920	
	Vodafone Group PLC	-	"	-	US\$ 3,916	N/A	US\$ 3,916	
	Laboratory Corp of America Holdings	-	"	-	US\$ 3,888	N/A	US\$ 3,888	
	BG Energy Capital PLC	-	"	-	US\$ 3,853	N/A	US\$ 3,853	
	Reckitt Benckiser Treasury Services PLC	-	"	-	US\$ 3,805	N/A	US\$ 3,805	
	GE Capital Funding LLC	-	"	-	US\$ 3,761	N/A	US\$ 3,761	
	Monongahela Power Co	-	"	-	US\$ 3,737	N/A	US\$ 3,737	
	Cooperative Rabobank UA	-	"	-	US\$ 3,698	N/A	US\$ 3,698	
	Verisk Analytics Inc	-	"	-	US\$ 3,677	N/A	US\$ 3,677	
	Diageo Capital PLC	-	"	-	US\$ 3,667	N/A	US\$ 3,667	
	Ameren Corp	-	"	-	US\$ 3,658	N/A	US\$ 3,658	
	UBS AG/London	-	"	-	US\$ 3,588	N/A	US\$ 3,588	
	Dominion Energy Inc	-	"	-	US\$ 3,586	N/A	US\$ 3,586	
	Pfizer Inc	-	"	-	US\$ 3,521	N/A	US\$ 3,521	
	AutoZone Inc	-	"	-	US\$ 3,456	N/A	US\$ 3,456	
	HSBC Bank Canada	-	"	-	US\$ 3,440	N/A	US\$ 3,440	
	Hewlett Packard Enterprise Co	-	"	-	US\$ 3,439	N/A	US\$ 3,439	
	Unilever Capital Corp	-	"	-	US\$ 3,394	N/A	US\$ 3,394	
	Swedbank AB	-	"	-	US\$ 3,388	N/A	US\$ 3,388	
	MassMutual Global Funding II	-	"	-	US\$ 3,369	N/A	US\$ 3,369	
	CNA Financial Corp	-	"	-	US\$ 3,316	N/A	US\$ 3,316	
	ONE Gas Inc	-	"	-	US\$ 3,310	N/A	US\$ 3,310	
	Texas Instruments Inc	-	"	-	US\$ 3,292	N/A	US\$ 3,292	
	Avangrid Inc	-	"	-	US\$ 3,262	N/A	US\$ 3,262	
	Ralph Lauren Corp	-	"	-	US\$ 3,207	N/A	US\$ 3,207	
	Oncor Electric Delivery Co LLC	-	"	-	US\$ 3,201	N/A	US\$ 3,201	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Royal Bank of Scotland Group PLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 3,199	N/A	US\$ 3,199	
	Novartis Capital Corp	-	"	-	US\$ 3,199	N/A	US\$ 3,199	
	Baidu Inc	-	"	-	US\$ 3,184	N/A	US\$ 3,184	
	Raytheon Technologies Corp	-	"	-	US\$ 3,130	N/A	US\$ 3,130	
	Valero Energy Corp	-	"	-	US\$ 3,109	N/A	US\$ 3,109	
	Stryker Corp	-	"	-	US\$ 3,081	N/A	US\$ 3,081	
	Walt Disney Co/The	-	"	-	US\$ 3,058	N/A	US\$ 3,058	
	Zions Bancorp NA	-	"	-	US\$ 3,057	N/A	US\$ 3,057	
	HCP Inc	-	"	-	US\$ 2,978	N/A	US\$ 2,978	
	Penske Truck Leasing Co Lp / PTL Finance Corp	-	"	-	US\$ 2,967	N/A	US\$ 2,967	
	American Electric Power Co Inc	-	"	-	US\$ 2,948	N/A	US\$ 2,948	
	Xcel Energy Inc	-	"	-	US\$ 2,948	N/A	US\$ 2,948	
	Ventas Realty LP	-	"	-	US\$ 2,942	N/A	US\$ 2,942	
	Philip Morris International Inc	-	"	-	US\$ 2,933	N/A	US\$ 2,933	
	Air Products and Chemicals Inc	-	"	-	US\$ 2,909	N/A	US\$ 2,909	
	Berkshire Hathaway Energy Co	-	"	-	US\$ 2,877	N/A	US\$ 2,877	
	Credit Suisse Group Funding Guernsey Ltd	-	"	-	US\$ 2,867	N/A	US\$ 2,867	
	Equitable Financial Life Global Funding	-	"	-	US\$ 2,849	N/A	US\$ 2,849	
	Ross Stores Inc	-	"	-	US\$ 2,837	N/A	US\$ 2,837	
	Nuveen Finance LLC	-	"	-	US\$ 2,817	N/A	US\$ 2,817	
	Ryder System Inc	-	"	-	US\$ 2,800	N/A	US\$ 2,800	
	AvatonBay Communities Inc	-	"	-	US\$ 2,798	N/A	US\$ 2,798	
	Quest Diagnostics Inc	-	"	-	US\$ 2,798	N/A	US\$ 2,798	
	Kimco Realty Corp	-	"	-	US\$ 2,726	N/A	US\$ 2,726	
	CMS Energy Corp	-	"	-	US\$ 2,717	N/A	US\$ 2,717	
	Roche Holdings Inc	-	"	-	US\$ 2,702	N/A	US\$ 2,702	
	Magellan Midstream Partners LP	-	"	-	US\$ 2,700	N/A	US\$ 2,700	
	Nutrien Ltd	-	"	-	US\$ 2,687	N/A	US\$ 2,687	
	PNC Financial Services Group Inc/The	-	"	-	US\$ 2,683	N/A	US\$ 2,683	
	Pinnacle West Capital Corp	-	"	-	US\$ 2,669	N/A	US\$ 2,669	
	Aetna Inc	-	"	-	US\$ 2,592	N/A	US\$ 2,592	
	Empower Finance 2020 LP	-	"	-	US\$ 2,562	N/A	US\$ 2,562	
	Nestle Holdings Inc	-	"	-	US\$ 2,533	N/A	US\$ 2,533	
	Reynolds American Inc	-	"	-	US\$ 2,530	N/A	US\$ 2,530	
	Berkshire Hathaway Inc	-	"	-	US\$ 2,513	N/A	US\$ 2,513	
	Chevron USA Inc	-	"	-	US\$ 2,511	N/A	US\$ 2,511	
	Georgia Power Co	-	"	-	US\$ 2,497	N/A	US\$ 2,497	
	Northrop Grumman Corp	-	"	-	US\$ 2,491	N/A	US\$ 2,491	
	Slate Street Corp	-	"	-	US\$ 2,487	N/A	US\$ 2,487	
	SunTrust Bank/Atlanta GA	-	"	-	US\$ 2,486	N/A	US\$ 2,486	
	Honeywell International Inc	-	"	-	US\$ 2,480	N/A	US\$ 2,480	
	Enterprise Products Operating LLC	-	"	-	US\$ 2,470	N/A	US\$ 2,470	
	Duke Energy Corp	-	"	-	US\$ 2,428	N/A	US\$ 2,428	
	DuPont de Nemours Inc	-	"	-	US\$ 2,427	N/A	US\$ 2,427	
	Suncor Energy Inc	-	"	-	US\$ 2,416	N/A	US\$ 2,416	
	Union Pacific Corp	-	"	-	US\$ 2,398	N/A	US\$ 2,398	
	O'Reilly Automotive Inc	-	"	-	US\$ 2,394	N/A	US\$ 2,394	
	Public Service Electric and Gas Co	-	"	-	US\$ 2,321	N/A	US\$ 2,321	
	Health Care Service Corp A Mutual Legal Reserve Co	-	"	-	US\$ 2,303	N/A	US\$ 2,303	
	Magna International Inc	-	"	-	US\$ 2,291	N/A	US\$ 2,291	
	BAT International Finance PLC	-	"	-	US\$ 2,287	N/A	US\$ 2,287	
	Caterpillar Financial Services Corp	-	"	-	US\$ 2,284	N/A	US\$ 2,284	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	ITC Holdings Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 2,263	N/A	US\$ 2,263
	East Ohio Gas Co/The	-	"	-	US\$ 2,261	N/A	US\$ 2,261
	QUALCOMM Inc	-	"	-	US\$ 2,253	N/A	US\$ 2,253
	Citizens Bank N/A/Providence RI	-	"	-	US\$ 2,212	N/A	US\$ 2,212
	Amphenol Corp	-	"	-	US\$ 2,201	N/A	US\$ 2,201
	Bank of New Zealand	-	"	-	US\$ 2,196	N/A	US\$ 2,196
	ASB Bank Ltd	-	"	-	US\$ 2,184	N/A	US\$ 2,184
	Tucson Electric Power Co	-	"	-	US\$ 2,177	N/A	US\$ 2,177
	Otis Worldwide Corp	-	"	-	US\$ 2,159	N/A	US\$ 2,159
	WP Carey Inc	-	"	-	US\$ 2,103	N/A	US\$ 2,103
	CNOOC Finance 2012 Ltd	-	"	-	US\$ 2,072	N/A	US\$ 2,072
	PayPal Holdings Inc	-	"	-	US\$ 2,068	N/A	US\$ 2,068
	Shinhan Financial Group Co Ltd	-	"	-	US\$ 2,024	N/A	US\$ 2,024
	CK Hutchison International 16 Ltd	-	"	-	US\$ 2,016	N/A	US\$ 2,016
	Regions Financial Corp	-	"	-	US\$ 2,007	N/A	US\$ 2,007
	Kentucky Utilities Co	-	"	-	US\$ 1,994	N/A	US\$ 1,994
	NetApp Inc	-	"	-	US\$ 1,982	N/A	US\$ 1,982
	Sydney Airport Finance Co Pty Ltd	-	"	-	US\$ 1,968	N/A	US\$ 1,968
	CRH America Inc	-	"	-	US\$ 1,965	N/A	US\$ 1,965
	Evergy Kansas Central Inc	-	"	-	US\$ 1,937	N/A	US\$ 1,937
	Burlington Northern Santa Fe LLC	-	"	-	US\$ 1,935	N/A	US\$ 1,935
	ANZ New Zealand Int'l Ltd/London	-	"	-	US\$ 1,927	N/A	US\$ 1,927
	Appalachian Power Co	-	"	-	US\$ 1,924	N/A	US\$ 1,924
	Gulfstream Natural Gas System LLC	-	"	-	US\$ 1,913	N/A	US\$ 1,913
	Public Service Enterprise Group Inc	-	"	-	US\$ 1,908	N/A	US\$ 1,908
	Air Lease Corp	-	"	-	US\$ 1,882	N/A	US\$ 1,882
	Discover Bank	-	"	-	US\$ 1,873	N/A	US\$ 1,873
	Boston Properties LP	-	"	-	US\$ 1,840	N/A	US\$ 1,840
	McCormick & Co Inc/MD	-	"	-	US\$ 1,837	N/A	US\$ 1,837
	Infor Inc	-	"	-	US\$ 1,810	N/A	US\$ 1,810
	International Business Machines Corp	-	"	-	US\$ 1,761	N/A	US\$ 1,761
	Anheuser-Busch InBev Worldwide Inc	-	"	-	US\$ 1,759	N/A	US\$ 1,759
	Emerson Electric Co	-	"	-	US\$ 1,750	N/A	US\$ 1,750
	MetLife Inc	-	"	-	US\$ 1,681	N/A	US\$ 1,681
	Duke Energy Florida LLC	-	"	-	US\$ 1,677	N/A	US\$ 1,677
	Toyota Industries Corp	-	"	-	US\$ 1,672	N/A	US\$ 1,672
	Exelon Generation Co LLC	-	"	-	US\$ 1,652	N/A	US\$ 1,652
	Essex Portfolio LP	-	"	-	US\$ 1,650	N/A	US\$ 1,650
	Midwest Connector Capital Co LLC	-	"	-	US\$ 1,641	N/A	US\$ 1,641
	Brookfield Finance Inc	-	"	-	US\$ 1,641	N/A	US\$ 1,641
	Suntory Holdings Ltd	-	"	-	US\$ 1,637	N/A	US\$ 1,637
	Panasonic Corp	-	"	-	US\$ 1,619	N/A	US\$ 1,619
	CK Hutchison International 19 Ltd	-	"	-	US\$ 1,603	N/A	US\$ 1,603
	Marathon Petroleum Corp	-	"	-	US\$ 1,592	N/A	US\$ 1,592
	Marsh & McLennan Cos Inc	-	"	-	US\$ 1,576	N/A	US\$ 1,576
	Marathon Petroleum Corp	-	"	-	US\$ 1,562	N/A	US\$ 1,562
	Public Service Electric & Gas Co	-	"	-	US\$ 1,560	N/A	US\$ 1,560
	AIA Group Ltd	-	"	-	US\$ 1,540	N/A	US\$ 1,540
	NTT Finance Corp	-	"	-	US\$ 1,527	N/A	US\$ 1,527
	ABN AMRO Bank NV	-	"	-	US\$ 1,526	N/A	US\$ 1,526
	Alliant Energy Finance LLC	-	"	-	US\$ 1,504	N/A	US\$ 1,504
	KEB Hana Bank	-	"	-	US\$ 1,501	N/A	US\$ 1,501
	Virginia Electric & Power Co	-	"	-	US\$ 1,501	N/A	US\$ 1,501

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Entergy Louisiana LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,472	N/A	US\$ 1,472	
	Daiwa Securities Group Inc	-	"	-	US\$ 1,430	N/A	US\$ 1,430	
	Citizens Financial Group Inc	-	"	-	US\$ 1,418	N/A	US\$ 1,418	
	Andrew W Mellon Foundation/The	-	"	-	US\$ 1,418	N/A	US\$ 1,418	
	Wells Fargo Bank NA	-	"	-	US\$ 1,416	N/A	US\$ 1,416	
	CNOOC Curtis Funding No 1 Pty Ltd	-	"	-	US\$ 1,410	N/A	US\$ 1,410	
	Siemens Financieringsmaatschappij NV	-	"	-	US\$ 1,410	N/A	US\$ 1,410	
	Kilroy Realty LP	-	"	-	US\$ 1,402	N/A	US\$ 1,402	
	Entergy Arkansas LLC	-	"	-	US\$ 1,349	N/A	US\$ 1,349	
	Ontario Teachers' Cadillac Fairview Properties Trust	-	"	-	US\$ 1,339	N/A	US\$ 1,339	
	Federal Realty Investment Trust	-	"	-	US\$ 1,306	N/A	US\$ 1,306	
	General Dynamics Corp	-	"	-	US\$ 1,238	N/A	US\$ 1,238	
	Santander UK Group Holdings PLC	-	"	-	US\$ 1,237	N/A	US\$ 1,237	
	Lincoln National Corp	-	"	-	US\$ 1,227	N/A	US\$ 1,227	
	PSEG Power LLC	-	"	-	US\$ 1,208	N/A	US\$ 1,208	
	Schlumberger Finance Canada Ltd	-	"	-	US\$ 1,189	N/A	US\$ 1,189	
	eBay Inc	-	"	-	US\$ 1,154	N/A	US\$ 1,154	
	Cleveland Electric Illuminating Co/The	-	"	-	US\$ 1,149	N/A	US\$ 1,149	
	APT Pipelines Ltd	-	"	-	US\$ 1,148	N/A	US\$ 1,148	
	Alexandria Real Estate Equities Inc	-	"	-	US\$ 1,112	N/A	US\$ 1,112	
	Southern California Edison Co	-	"	-	US\$ 1,105	N/A	US\$ 1,105	
	Coöperatieve Rabobank UA/NY	-	"	-	US\$ 1,102	N/A	US\$ 1,102	
	Baltimore Gas & Electric Co	-	"	-	US\$ 1,066	N/A	US\$ 1,066	
	Entergy Mississippi LLC	-	"	-	US\$ 1,063	N/A	US\$ 1,063	
	BBVA USA	-	"	-	US\$ 1,062	N/A	US\$ 1,062	
	DH Europe Finance II Sarl	-	"	-	US\$ 1,056	N/A	US\$ 1,056	
	Loews Corp	-	"	-	US\$ 1,047	N/A	US\$ 1,047	
	USAA Capital Corp	-	"	-	US\$ 1,046	N/A	US\$ 1,046	
	Kinder Morgan Inc/DE	-	"	-	US\$ 1,046	N/A	US\$ 1,046	
	Kaiser Foundation Hospitals	-	"	-	US\$ 1,039	N/A	US\$ 1,039	
	Texas Eastern Transmission LP	-	"	-	US\$ 1,034	N/A	US\$ 1,034	
	Simon Property Group LP	-	"	-	US\$ 1,030	N/A	US\$ 1,030	
	Mondelez International Holdings Netherlands BV	-	"	-	US\$ 1,024	N/A	US\$ 1,024	
	Toyota Motor Finance Netherlands BV	-	"	-	US\$ 1,008	N/A	US\$ 1,008	
	MUFG Union Bank NA	-	"	-	US\$ 1,006	N/A	US\$ 1,006	
	BHP Billiton Finance USA Ltd	-	"	-	US\$ 964	N/A	US\$ 964	
	Southern California Gas Co	-	"	-	US\$ 959	N/A	US\$ 959	
	QNB Finance Ltd	-	"	-	US\$ 954	N/A	US\$ 954	
	Prudential Financial Inc	-	"	-	US\$ 933	N/A	US\$ 933	
	Mitsubishi UFJ Lease & Finance Co Ltd	-	"	-	US\$ 927	N/A	US\$ 927	
	Westpac Banking Corp	-	"	-	US\$ 879	N/A	US\$ 879	
	Woolworths Group Ltd	-	"	-	US\$ 867	N/A	US\$ 867	
	Niagara Mohawk Power Corp	-	"	-	US\$ 851	N/A	US\$ 851	
	CenterPoint Energy Inc	-	"	-	US\$ 851	N/A	US\$ 851	
	Visa Inc	-	"	-	US\$ 845	N/A	US\$ 845	
	Sinopec Capital 2013 Ltd	-	"	-	US\$ 835	N/A	US\$ 835	
	Natwest Group PLC	-	"	-	US\$ 815	N/A	US\$ 815	
	Sky Ltd	-	"	-	US\$ 779	N/A	US\$ 779	
	Xylem Inc/NY	-	"	-	US\$ 774	N/A	US\$ 774	
	DR Horton Inc	-	"	-	US\$ 772	N/A	US\$ 772	
	Nationwide Financial Services Inc	-	"	-	US\$ 758	N/A	US\$ 758	
	Canadian Natural Resources Ltd	-	"	-	US\$ 758	N/A	US\$ 758	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Warner Media LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 752	N/A	US\$ 752
	BNZ International Funding Ltd/London	-	"	-	US\$ 743	N/A	US\$ 743
	Sinopec Group Overseas Development 2017 Ltd	-	"	-	US\$ 717	N/A	US\$ 717
	Abbott Laboratories	-	"	-	US\$ 705	N/A	US\$ 705
	Digital Realty Trust LP	-	"	-	US\$ 679	N/A	US\$ 679
	Cummins Inc	-	"	-	US\$ 664	N/A	US\$ 664
	Carlisle Cos Inc	-	"	-	US\$ 658	N/A	US\$ 658
	Glencore Funding LLC	-	"	-	US\$ 645	N/A	US\$ 645
	Western Union Co/The	-	"	-	US\$ 644	N/A	US\$ 644
	Republic Services Inc	-	"	-	US\$ 644	N/A	US\$ 644
	American Water Capital Corp	-	"	-	US\$ 637	N/A	US\$ 637
	OneBeacon US Holdings Inc	-	"	-	US\$ 633	N/A	US\$ 633
	Sinopec Group Overseas Development 2012 Ltd	-	"	-	US\$ 623	N/A	US\$ 623
	Ohio Power Co	-	"	-	US\$ 622	N/A	US\$ 622
	Arizona Public Service Co	-	"	-	US\$ 604	N/A	US\$ 604
	Duke Energy Progress LLC	-	"	-	US\$ 592	N/A	US\$ 592
	ViacomCBS Inc	-	"	-	US\$ 590	N/A	US\$ 590
	Evegy Inc	-	"	-	US\$ 579	N/A	US\$ 579
	Fifth Third Bank/Cincinnati OH	-	"	-	US\$ 566	N/A	US\$ 566
	United Parcel Service Inc	-	"	-	US\$ 565	N/A	US\$ 565
	Aflac Inc	-	"	-	US\$ 552	N/A	US\$ 552
	PACCAR Financial Corp	-	"	-	US\$ 552	N/A	US\$ 552
	ABC Inc	-	"	-	US\$ 525	N/A	US\$ 525
	TTX Co	-	"	-	US\$ 524	N/A	US\$ 524
	Baker Hughes a GE Co LLC / Baker Hughes Co-Obligor Inc	-	"	-	US\$ 522	N/A	US\$ 522
	Realty Income Corp	-	"	-	US\$ 521	N/A	US\$ 521
	Hanwha Energy USA Holdings Corp	-	"	-	US\$ 514	N/A	US\$ 514
	Danone SA	-	"	-	US\$ 506	N/A	US\$ 506
	United Overseas Bank Ltd	-	"	-	US\$ 459	N/A	US\$ 459
	Target Corp	-	"	-	US\$ 455	N/A	US\$ 455
	Starbucks Corp	-	"	-	US\$ 430	N/A	US\$ 430
	GlaxoSmithKline Capital PLC	-	"	-	US\$ 426	N/A	US\$ 426
	Comerica Bank	-	"	-	US\$ 425	N/A	US\$ 425
	Banco del Estado de Chile	-	"	-	US\$ 423	N/A	US\$ 423
	CBS Corp	-	"	-	US\$ 413	N/A	US\$ 413
	Fidelity National Information Services Inc	-	"	-	US\$ 413	N/A	US\$ 413
	Komatsu Finance America Inc	-	"	-	US\$ 413	N/A	US\$ 413
	Truist Financial Corp	-	"	-	US\$ 410	N/A	US\$ 410
	Newmont Goldcorp Corp	-	"	-	US\$ 404	N/A	US\$ 404
	AXA Equitable Holdings Inc	-	"	-	US\$ 403	N/A	US\$ 403
	PepsiCo Inc	-	"	-	US\$ 400	N/A	US\$ 400
	StantCorp Financial Group Inc	-	"	-	US\$ 388	N/A	US\$ 388
	Canadian Pacific Railway Co	-	"	-	US\$ 378	N/A	US\$ 378
	Enbridge Inc	-	"	-	US\$ 378	N/A	US\$ 378
	Principal Financial Group Inc	-	"	-	US\$ 372	N/A	US\$ 372
	Pernod Ricard SA	-	"	-	US\$ 364	N/A	US\$ 364
	First Republic Bank/CA	-	"	-	US\$ 360	N/A	US\$ 360
	Archer-Daniels-Midland Co	-	"	-	US\$ 353	N/A	US\$ 353
	WEC Energy Group Inc	-	"	-	US\$ 351	N/A	US\$ 351
	Ventas Realty LP / Ventas Capital Corp	-	"	-	US\$ 349	N/A	US\$ 349
	Amgen Inc	-	"	-	US\$ 347	N/A	US\$ 347
	Allstate Corp/The	-	"	-	US\$ 332	N/A	US\$ 332

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	BP Capital Markets PLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 329	N/A	US\$ 329	
	CommonSpirit Health	-	"	-	US\$ 322	N/A	US\$ 322	
	Total Capital International SA	-	"	-	US\$ 320	N/A	US\$ 320	
	Southern Co/The	-	"	-	US\$ 318	N/A	US\$ 318	
	Anthem Inc	-	"	-	US\$ 314	N/A	US\$ 314	
	Chubb INA Holdings Inc	-	"	-	US\$ 313	N/A	US\$ 313	
	America Movil SAB de CV	-	"	-	US\$ 311	N/A	US\$ 311	
	Alibaba Group Holding Ltd	-	"	-	US\$ 306	N/A	US\$ 306	
	Aon Corp	-	"	-	US\$ 300	N/A	US\$ 300	
	Johnson Controls International plc	-	"	-	US\$ 298	N/A	US\$ 298	
	Mondelez International Inc	-	"	-	US\$ 284	N/A	US\$ 284	
	Southern Natural Gas Co LLC / Southern Natural Issuing Corp	-	"	-	US\$ 277	N/A	US\$ 277	
	Coca-Cola Co/The	-	"	-	US\$ 275	N/A	US\$ 275	
	Huntington National Bank/The	-	"	-	US\$ 257	N/A	US\$ 257	
	EI du Pont de Nemours and Co	-	"	-	US\$ 255	N/A	US\$ 255	
	Capital One Bank USA NA	-	"	-	US\$ 254	N/A	US\$ 254	
	Waste Management Inc	-	"	-	US\$ 251	N/A	US\$ 251	
	Aon PLC	-	"	-	US\$ 246	N/A	US\$ 246	
	Nasdaq Inc	-	"	-	US\$ 220	N/A	US\$ 220	
	Deere & Co	-	"	-	US\$ 217	N/A	US\$ 217	
	Saudi Arabian Oil Co	-	"	-	US\$ 202	N/A	US\$ 202	
	Nucor Corp	-	"	-	US\$ 189	N/A	US\$ 189	
	Dow Chemical Co/The	-	"	-	US\$ 135	N/A	US\$ 135	
	Columbia Property Trust Operating Partnership LP	-	"	-	US\$ 105	N/A	US\$ 105	
	Wells Fargo & Company	-	Financial assets at amortized cost	-	US\$ 180,487	N/A	US\$ 182,212	
	Citigroup Global Market Inc.	-	"	-	US\$ 99,965	N/A	US\$ 100,488	
	JPMorgan Chase & Co.	-	"	-	US\$ 95,058	N/A	US\$ 95,567	
	Goldman Sachs Group Inc/The	-	"	-	US\$ 14,930	N/A	US\$ 15,140	
	Government bond	-	Financial assets at fair value through other comprehensive income	-	US\$ 472,618	N/A	US\$ 472,618	
	United States Treasury Note/Bond	-	"	-	US\$ 5,023	N/A	US\$ 5,023	
	Abu Dhabi Government International Bond	-	"	-	US\$ 1,396	N/A	US\$ 1,396	
	Qatar Government International Bond	-	"	-				
	Agency bonds/Agency mortgage-backed securities	-	Financial assets at fair value through other comprehensive income	-	US\$ 518,729	N/A	US\$ 518,729	
	Fannie Mae Pool	-	"	-	US\$ 297,578	N/A	US\$ 297,578	
	Ginnie Mae II Pool	-	"	-	US\$ 134,588	N/A	US\$ 134,588	
	Fannie Mae REMICS	-	"	-	US\$ 128,111	N/A	US\$ 128,111	
	Freddie Mac REMICS	-	"	-	US\$ 121,514	N/A	US\$ 121,514	
	Freddie Mac Pool	-	"	-	US\$ 110,508	N/A	US\$ 110,508	
	Fannie Mae or Freddie Mac	-	"	-	US\$ 99,267	N/A	US\$ 99,267	
	Ginnie Mae	-	"	-	US\$ 80,113	N/A	US\$ 80,113	
	Freddie Mac Gold Pool	-	"	-	US\$ 35,743	N/A	US\$ 35,743	
	Government National Mortgage Association	-	"	-	US\$ 19,416	N/A	US\$ 19,416	
	Fannie Mae-Aces	-	"	-	US\$ 3,760	N/A	US\$ 3,760	
	Freddie Mac Strips	-	"	-	US\$ 3,605	N/A	US\$ 3,605	
	State Board of Administration Finance Corp	-	"	-	US\$ 1,947	N/A	US\$ 1,947	
	University of California	-	"	-	US\$ 1,942	N/A	US\$ 1,942	
	Korea Hydro & Nuclear Power Co Ltd	-	"	-	US\$ 1,159	N/A	US\$ 1,159	
	Federal National Mortgage Association	-	"	-	US\$ 1,029	N/A	US\$ 1,029	
	Denver City & County Housing Authority	-	"	-				

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Ginnie Mae I Pool	-	Financial assets at fair value through other comprehensive income	-	US\$ 976	N/A	US\$ 976
	Oregon Health & Science University	-	"	-	US\$ 826	N/A	US\$ 826
	FRESB 2019-SB61 Mortgage Trust	-	"	-	US\$ 623	N/A	US\$ 623
	Freddie Mac Multifamily Structured Pass Through Certificates	-	"	-	US\$ 596	N/A	US\$ 596
	State of Hawaii	-	"	-	US\$ 556	N/A	US\$ 556
	FHLMC-GNMA	-	"	-	US\$ 535	N/A	US\$ 535
	State of Wisconsin	-	"	-	US\$ 526	N/A	US\$ 526
	Brazos Higher Education Authority Inc	-	"	-	US\$ 480	N/A	US\$ 480
	FRESB 2019-SB60 Mortgage Trust	-	"	-	US\$ 412	N/A	US\$ 412
	Freddie Mac Non Gold Pool	-	"	-	US\$ 300	N/A	US\$ 300
	Sales Tax Securitization Corp	-	"	-	US\$ 252	N/A	US\$ 252
	Fannie Mae Benchmark REMIC	-	"	-	US\$ 97	N/A	US\$ 97
	Asset-backed securities	-	-	-	-	-	-
	JPMBB Commercial Mortgage Securities Trust 2014-C24	-	Financial assets at fair value through other comprehensive income	-	US\$ 8,013	N/A	US\$ 8,013
	Wells Fargo Commercial Mortgage Trust 2016-BNK1	-	"	-	US\$ 7,881	N/A	US\$ 7,881
	BANK 2020-BNK26	-	"	-	US\$ 7,325	N/A	US\$ 7,325
	Citigroup Commercial Mortgage Trust 2014-GC21	-	"	-	US\$ 6,888	N/A	US\$ 6,888
	CGDDB Commercial Mortgage Trust 2017-BIOC	-	"	-	US\$ 6,854	N/A	US\$ 6,854
	Hyundai Auto Receivables Trust 2017-A	-	"	-	US\$ 6,742	N/A	US\$ 6,742
	Benchmark 2019-B11 Mortgage Trust	-	"	-	US\$ 6,533	N/A	US\$ 6,533
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	"	-	US\$ 6,388	N/A	US\$ 6,388
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C29	-	"	-	US\$ 6,074	N/A	US\$ 6,074
	UBS-Barclays Commercial Mortgage Trust 2012-C2	-	"	-	US\$ 5,743	N/A	US\$ 5,743
	WFRBS Commercial Mortgage Trust 2013-C13	-	"	-	US\$ 5,663	N/A	US\$ 5,663
	BBCMS 2018-TALL Mortgage Trust	-	"	-	US\$ 5,403	N/A	US\$ 5,403
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C30	-	"	-	US\$ 5,372	N/A	US\$ 5,372
	COMM 2015-CCRE24 Mortgage Trust	-	"	-	US\$ 5,333	N/A	US\$ 5,333
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C10	-	"	-	US\$ 5,071	N/A	US\$ 5,071
	MRCO 2019-MARK Mortgage Trust	-	"	-	US\$ 4,917	N/A	US\$ 4,917
	BANK 2019-BNK22	-	"	-	US\$ 4,583	N/A	US\$ 4,583
	Mercedes-Benz Auto Lease Trust 2019-B	-	"	-	US\$ 4,333	N/A	US\$ 4,333
	BANK 2017-BNK5	-	"	-	US\$ 4,272	N/A	US\$ 4,272
	JPMCC Commercial Mortgage Securities Trust 2017-JP7	-	"	-	US\$ 4,261	N/A	US\$ 4,261
	BANK 2017-BNK6	-	"	-	US\$ 4,254	N/A	US\$ 4,254
	UBS Commercial Mortgage Trust 2018-C10	-	"	-	US\$ 4,248	N/A	US\$ 4,248
	BANK 2019-BNK17	-	"	-	US\$ 4,234	N/A	US\$ 4,234
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C7	-	"	-	US\$ 4,024	N/A	US\$ 4,024
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	-	"	-	US\$ 4,020	N/A	US\$ 4,020
	Enterprise Fleet Financing 2020-1 LLC	-	"	-	US\$ 3,870	N/A	US\$ 3,870
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	"	-	US\$ 3,620	N/A	US\$ 3,620
	Benchmark 2018-B2 Mortgage Trust	-	"	-	US\$ 3,482	N/A	US\$ 3,482
	UBS-Barclays Commercial Mortgage Trust 2013-C6	-	"	-	US\$ 3,321	N/A	US\$ 3,321
	GS Mortgage Securities Trust 2012-GC6	-	"	-	US\$ 3,188	N/A	US\$ 3,188
	Ford Credit Auto Lease Trust 2019-B	-	"	-	US\$ 3,139	N/A	US\$ 3,139
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	"	-	US\$ 3,063	N/A	US\$ 3,063
	Morgan Stanley Capital I Trust 2017-H1	-	"	-	US\$ 3,051	N/A	US\$ 3,051
	Citigroup Commercial Mortgage Trust 2016-P5	-	"	-	US\$ 3,017	N/A	US\$ 3,017
	Hyundai Auto Receivables Trust 2018-A	-	"	-	US\$ 2,942	N/A	US\$ 2,942
	Nissan Auto Lease Trust 2019-B	-	"	-	US\$ 2,899	N/A	US\$ 2,899

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	GS Mortgage Securities Corp Trust 2018-R1VR	-	Financial assets at fair value through other comprehensive income	-	US\$ 2,873	N/A	US\$ 2,873	
	Ford Credit Auto Lease Trust 2020-B	-	"	-	US\$ 2,869	N/A	US\$ 2,869	
	UBS-Barclays Commercial Mortgage Trust 2012-C3	-	"	-	US\$ 2,865	N/A	US\$ 2,865	
	BANK 2019-BNK24	-	"	-	US\$ 2,829	N/A	US\$ 2,829	
	Citigroup Commercial Mortgage Trust 2016-C3	-	"	-	US\$ 2,781	N/A	US\$ 2,781	
	Enterprise Fleet Financing 2019-2 LLC	-	"	-	US\$ 2,770	N/A	US\$ 2,770	
	BX Commercial Mortgage Trust 2018-IND	-	"	-	US\$ 2,760	N/A	US\$ 2,760	
	GS Mortgage Securities Trust 2013-GC112	-	"	-	US\$ 2,717	N/A	US\$ 2,717	
	Wells Fargo Commercial Mortgage Trust 2020-C55	-	"	-	US\$ 2,638	N/A	US\$ 2,638	
	Ford Credit Auto Owner Trust 2020-REV1	-	"	-	US\$ 2,635	N/A	US\$ 2,635	
	GM Financial Consumer Automobile Receivables Trust 2017-2	-	"	-	US\$ 2,524	N/A	US\$ 2,524	
	American Express Credit Account Master Trust	-	"	-	US\$ 2,519	N/A	US\$ 2,519	
	BBCMS Mortgage Trust 2020-C8	-	"	-	US\$ 2,478	N/A	US\$ 2,478	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	-	"	-	US\$ 2,470	N/A	US\$ 2,470	
	Citibank Credit Card Issuance Trust	-	"	-	US\$ 2,304	N/A	US\$ 2,304	
	UBS Commercial Mortgage Trust 2018-C11	-	"	-	US\$ 2,243	N/A	US\$ 2,243	
	Morgan Stanley Capital I Trust 2018-H3	-	"	-	US\$ 2,240	N/A	US\$ 2,240	
	COMM 2013-CCRE12 Mortgage Trust	-	"	-	US\$ 2,165	N/A	US\$ 2,165	
	BENCHMARK 2018-B4	-	"	-	US\$ 2,163	N/A	US\$ 2,163	
	JPMDDB Commercial Mortgage Securities Trust 2017-C7	-	"	-	US\$ 2,126	N/A	US\$ 2,126	
	Citigroup Commercial Mortgage Trust 2017-P8	-	"	-	US\$ 2,103	N/A	US\$ 2,103	
	Ford Credit Auto Owner Trust 2019-A	-	"	-	US\$ 2,096	N/A	US\$ 2,096	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C31	-	"	-	US\$ 2,068	N/A	US\$ 2,068	
	JPMBB Commercial Mortgage Securities Trust 2014-C19	-	"	-	US\$ 2,015	N/A	US\$ 2,015	
	Hyundai Auto Receivables Trust 2016-B	-	"	-	US\$ 1,913	N/A	US\$ 1,913	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	-	"	-	US\$ 1,866	N/A	US\$ 1,866	
	Wells Fargo Commercial Mortgage Trust 2012-LC5	-	"	-	US\$ 1,716	N/A	US\$ 1,716	
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	"	-	US\$ 1,586	N/A	US\$ 1,586	
	WFRBS Commercial Mortgage Trust 2013-C17	-	"	-	US\$ 1,578	N/A	US\$ 1,578	
	COMM 2014-CCRE17 Mortgage Trust	-	"	-	US\$ 1,568	N/A	US\$ 1,568	
	JPMBB Commercial Mortgage Securities Trust 2013-C12	-	"	-	US\$ 1,563	N/A	US\$ 1,563	
	COMM 2020-CBM Mortgage Trust	-	"	-	US\$ 1,535	N/A	US\$ 1,535	
	ARI Fleet Lease Trust 2019-A	-	"	-	US\$ 1,497	N/A	US\$ 1,497	
	GS Mortgage Securities Trust 2014-GC22	-	"	-	US\$ 1,476	N/A	US\$ 1,476	
	Wells Fargo Commercial Mortgage Trust 2016-C36	-	"	-	US\$ 1,411	N/A	US\$ 1,411	
	Honda Auto Receivables 2017-3 Owner Trust	-	"	-	US\$ 1,385	N/A	US\$ 1,385	
	Toyota Auto Receivables 2018-D Owner Trust	-	"	-	US\$ 1,341	N/A	US\$ 1,341	
	DBGS 2018-BIOD Mortgage Trust	-	"	-	US\$ 1,299	N/A	US\$ 1,299	
	Nissan Auto Lease Trust 2019-A	-	"	-	US\$ 1,243	N/A	US\$ 1,243	
	Chase Issuance Trust	-	"	-	US\$ 1,231	N/A	US\$ 1,231	
	GM Financial Automobile Leasing Trust 2019-4	-	"	-	US\$ 1,218	N/A	US\$ 1,218	
	Morgan Stanley Capital I Trust 2019-H6	-	"	-	US\$ 1,188	N/A	US\$ 1,188	
	Benchmark 2019-B14 Mortgage Trust	-	"	-	US\$ 1,178	N/A	US\$ 1,178	
	GS Mortgage Securities Trust 2014-GC24	-	"	-	US\$ 1,168	N/A	US\$ 1,168	
	Hyundai Auto Receivables Trust 2019-B	-	"	-	US\$ 1,165	N/A	US\$ 1,165	
	GM Financial Consumer Automobile Receivables Trust 2018-1	-	"	-	US\$ 1,138	N/A	US\$ 1,138	
	GS Mortgage Securities Trust 2019-GSA1	-	"	-	US\$ 1,072	N/A	US\$ 1,072	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C12	-	"	-	US\$ 1,047	N/A	US\$ 1,047	
	Ford Credit Auto Owner Trust 2017-REV1	-	"	-	US\$ 1,025	N/A	US\$ 1,025	
	COMM 2013-LC6 Mortgage Trust	-	"	-	US\$ 1,013	N/A	US\$ 1,013	
	Ford Credit Auto Lease Trust 2019-A	-	"	-	US\$ 1,013	N/A	US\$ 1,013	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	WFRBS Commercial Mortgage Trust 2011-C4	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,006	N/A	US\$ 1,006
	Benchmark 2019-B9 Mortgage Trust	-	"	-	US\$ 980	N/A	US\$ 980
	Citigroup Commercial Mortgage Trust 2013-GC11	-	"	-	US\$ 977	N/A	US\$ 977
	Citigroup Commercial Mortgage Trust 2015-GC27	-	"	-	US\$ 970	N/A	US\$ 970
	Hyundai Auto Lease Securitization Trust 2019-A	-	"	-	US\$ 964	N/A	US\$ 964
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C13	-	"	-	US\$ 952	N/A	US\$ 952
	COMM 2012-CCRE5 Mortgage Trust	-	"	-	US\$ 934	N/A	US\$ 934
	Toyota Auto Receivables 2020-A Owner Trust	-	"	-	US\$ 928	N/A	US\$ 928
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	"	-	US\$ 919	N/A	US\$ 919
	BBCMS MORTGAGE TRUST 2017-C1	-	"	-	US\$ 895	N/A	US\$ 895
	Benchmark 2019-B15 Mortgage Trust	-	"	-	US\$ 841	N/A	US\$ 841
	280 Park Avenue 2017-280P Mortgage Trust	-	"	-	US\$ 830	N/A	US\$ 830
	GM Financial Automobile Leasing Trust 2019-2	-	"	-	US\$ 826	N/A	US\$ 826
	BANK 2017-BNK7	-	"	-	US\$ 818	N/A	US\$ 818
	Cantor Commercial Real Estate Lending 2019-CF1	-	"	-	US\$ 797	N/A	US\$ 797
	Ford Credit Auto Lease Trust	-	"	-	US\$ 790	N/A	US\$ 790
	Citigroup Commercial Mortgage Trust 2014-GC23	-	"	-	US\$ 778	N/A	US\$ 778
	Citigroup Commercial Mortgage Trust 2015-GC35	-	"	-	US\$ 773	N/A	US\$ 773
	Toyota Auto Receivables 2017-A Owner Trust	-	"	-	US\$ 764	N/A	US\$ 764
	BANK 2019-BNK23	-	"	-	US\$ 741	N/A	US\$ 741
	Morgan Stanley Capital I Trust 2019-H7	-	"	-	US\$ 733	N/A	US\$ 733
	COMM 2013-CCRE8 Mortgage Trust	-	"	-	US\$ 716	N/A	US\$ 716
	Wells Fargo Commercial Mortgage Trust 2015-NXS3	-	"	-	US\$ 696	N/A	US\$ 696
	GM Financial Automobile Leasing Trust 2019-1	-	"	-	US\$ 672	N/A	US\$ 672
	GM Financial Automobile Leasing Trust 2019-3	-	"	-	US\$ 655	N/A	US\$ 655
	COMM 2015-CCRE2 Mortgage Trust	-	"	-	US\$ 627	N/A	US\$ 627
	Mercedes-Benz Auto Lease Trust 2019-A	-	"	-	US\$ 617	N/A	US\$ 617
	GS Mortgage Securities Corp Trust 2020-UPTN	-	"	-	US\$ 602	N/A	US\$ 602
	CD 2016-CD2 Mortgage Trust	-	"	-	US\$ 503	N/A	US\$ 503
	JPMDB Commercial Mortgage Securities Trust 2019-COR6	-	"	-	US\$ 500	N/A	US\$ 500
	JP Morgan Chase Commercial Mortgage Securities Trust 2015-JP1	-	"	-	US\$ 492	N/A	US\$ 492
	Citigroup Commercial Mortgage Trust 2014-GC19	-	"	-	US\$ 444	N/A	US\$ 444
	Chesapeake Funding II LLC	-	"	-	US\$ 403	N/A	US\$ 403
	DBUBS 2011-LC2 Mortgage Trust	-	"	-	US\$ 392	N/A	US\$ 392
	WFRBS Commercial Mortgage Trust 2014-C25	-	"	-	US\$ 385	N/A	US\$ 385
	GS Mortgage Securities Trust 2014-GC26	-	"	-	US\$ 383	N/A	US\$ 383
	UBS-Barclays Commercial Mortgage Trust 2013-C5	-	"	-	US\$ 370	N/A	US\$ 370
	Mercedes-Benz Auto Lease Trust 2018-B	-	"	-	US\$ 368	N/A	US\$ 368
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C5	-	"	-	US\$ 197	N/A	US\$ 197
	Honda Auto Receivables 2020-2 Owner Trust	-	"	-	US\$ 166	N/A	US\$ 166
	COMM 2015-DC1 Mortgage Trust	-	"	-	US\$ 165	N/A	US\$ 165
	BANK 2020-BNK28	-	"	-	US\$ 156	N/A	US\$ 156
	Toyota Auto Receivables 2018-B Owner Trust	-	"	-	US\$ 132	N/A	US\$ 132
	BBCMS Mortgage Trust 2020-C7	-	"	-	US\$ 110	N/A	US\$ 110
	CFCRE Commercial Mortgage Trust 2011-C1	-	"	-	US\$ 73	N/A	US\$ 73
	COMM 2014-CCRE15 Mortgage Trust	-	"	-	US\$ 46	N/A	US\$ 46
	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\$ 81,161	4	US\$ 81,161

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
VTAF II	<u>Non-publicly traded equity investments</u> Aether Systems, Inc.	-	Financial assets at fair value through other comprehensive income	1,085	US\$ 386	20	US\$ 386	
	5V Technologies, Inc.	-	"	4	-	-	-	
VTAF III	<u>Publicly traded stocks</u> Sentelic Corporation	-	Financial assets at fair value through other comprehensive income	1,019	US\$ 1,778	3	US\$ 1,778	
	<u>Non-publicly traded equity investments</u> LiquidLeds Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US\$ 800	14	US\$ 800	
Growth Fund	Neocomix, Inc.	-	"	4,147	US\$ 174	-	US\$ 174	
	<u>Non-publicly traded equity investments</u> Innovium, Inc.	-	Financial assets at fair value through other comprehensive income	230	US\$ 1,863	-	US\$ 1,863	
	Innovium, Inc.	-	"	221	US\$ 1,793	-	US\$ 1,793	
	CNEX Labs, Inc.	-	"	237	US\$ 479	-	US\$ 479	
	Astera Labs, Inc.	-	"	127	US\$ 250	-	US\$ 250	

(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, 2020

(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		Gain/Loss on Disposal	Ending Balance (Note) Shares/Units (In Thousands)	Amount
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount			
TSMC Global	Corporate bond Bank of America Corp	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 46,084	-	US\$ 35,954	US\$ 25,078	US\$ 23,852	US\$ 1,226	-	US\$ 58,724
	Mitsubishi UFJ Financial Group Inc	"	-	-	-	US\$ 21,332	-	US\$ 16,408	US\$ 3,583	US\$ 3,565	US\$ 18	-	US\$ 34,946
	Abbvie Inc	"	-	-	-	US\$ 31,425	-	US\$ 30,755	US\$ 30,437	US\$ 30,223	US\$ 214	-	US\$ 33,716
	Goldman Sachs Group Inc/The	"	-	-	-	US\$ 25,789	-	US\$ 18,529	US\$ 15,109	US\$ 14,762	US\$ 347	-	US\$ 29,809
	JPMorgan Chase & Co	"	-	-	-	US\$ 20,825	-	US\$ 11,988	US\$ 4,033	US\$ 4,000	US\$ 33	-	US\$ 29,759
	Wells Fargo & Co	"	-	-	-	US\$ 11,864	-	US\$ 17,277	US\$ 4,109	US\$ 3,956	US\$ 153	-	US\$ 26,074
	Metropolitan Life Global Funding I	"	-	-	-	US\$ 8,222	-	US\$ 22,410	US\$ 9,691	US\$ 9,427	US\$ 264	-	US\$ 21,597
	Bristol-Myers Squibb Co	"	-	-	-	US\$ 21,666	-	US\$ 26,225	US\$ 27,630	US\$ 27,393	US\$ 237	-	US\$ 21,090
	Mizuho Financial Group Inc	"	-	-	-	US\$ 10,307	-	US\$ 14,034	US\$ 3,862	US\$ 3,774	US\$ 88	-	US\$ 20,795
	Toyota Motor Credit Corp	"	-	-	-	US\$ -	-	US\$ 18,775	US\$ -	US\$ -	US\$ -	-	US\$ 19,401
	HSBC Holdings PLC	"	-	-	-	US\$ 20,102	-	US\$ 9,739	US\$ 14,126	US\$ 13,853	US\$ 273	-	US\$ 16,113
	Hyundai Capital America	"	-	-	-	US\$ 3,187	-	US\$ 12,872	US\$ 406	US\$ 400	US\$ 6	-	US\$ 15,983
	Santander UK PLC	"	-	-	-	US\$ 8,272	-	US\$ 11,560	US\$ 4,480	US\$ 4,322	US\$ 158	-	US\$ 15,704
	Volkswagen Group of America Finance LLC	"	-	-	-	US\$ 3,896	-	US\$ 13,134	US\$ 1,777	US\$ 1,754	US\$ 23	-	US\$ 15,417
	National Securities Clearing Corp	"	-	-	-	US\$ -	-	US\$ 15,211	US\$ 1,473	US\$ 1,449	US\$ 24	-	US\$ 14,129
	Lloyds Banking Group PLC	"	-	-	-	US\$ 2,359	-	US\$ 10,734	US\$ -	US\$ -	US\$ -	-	US\$ 13,428
	AT&T Inc	"	-	-	-	US\$ 26,140	-	US\$ 15,881	US\$ 30,123	US\$ 28,835	US\$ 1,288	-	US\$ 13,180
	Chevron Corp	"	-	-	-	US\$ -	-	US\$ 13,770	US\$ 1,574	US\$ 1,530	US\$ 44	-	US\$ 12,771
	Royal Bank of Canada	"	-	-	-	US\$ 1,004	-	US\$ 15,844	US\$ 5,082	US\$ 4,983	US\$ 99	-	US\$ 12,771
	Guardian Life Global Funding	"	-	-	-	US\$ 1,502	-	US\$ 10,601	US\$ -	US\$ -	US\$ -	-	US\$ 12,187
	US Bancorp	"	-	-	-	US\$ 2,028	-	US\$ 11,094	US\$ 2,000	US\$ 1,953	US\$ 47	-	US\$ 11,651
	American Honda Finance Corp	"	-	-	-	US\$ -	-	US\$ 11,210	US\$ -	US\$ -	US\$ -	-	US\$ 11,354
	Amazon.com Inc	"	-	-	-	US\$ 1,018	-	US\$ 10,687	US\$ 1,054	US\$ 976	US\$ 78	-	US\$ 10,846
	TIJX Cos Inc/The	"	-	-	-	US\$ -	-	US\$ 12,500	US\$ 3,429	US\$ 3,150	US\$ 279	-	US\$ 10,563
	Verizon Communications Inc	"	-	-	-	US\$ 14,058	-	US\$ 9,489	US\$ 13,490	US\$ 12,509	US\$ 981	-	US\$ 10,558
	Equinor ASA	"	-	-	-	US\$ -	-	US\$ 11,811	US\$ 3,052	US\$ 2,889	US\$ 163	-	US\$ 9,635
	Exxon Mobil Corp	"	-	-	-	US\$ -	-	US\$ 17,331	US\$ 10,272	US\$ 10,025	US\$ 247	-	US\$ 7,576
	CVS Health Corp	"	-	-	-	US\$ 22,242	-	US\$ 4,205	US\$ 21,034	US\$ 20,205	US\$ 829	-	US\$ 5,981
	Fox Corp	"	-	-	-	US\$ 7,331	-	US\$ 10,171	US\$ 12,216	US\$ 12,059	US\$ 157	-	US\$ 5,483
	ERAC USA Finance LLC	"	-	-	-	US\$ 11,904	-	US\$ 3,659	US\$ 11,312	US\$ 11,159	US\$ 153	-	US\$ 4,298
	JPMorgan Chase & Co	"	-	-	-	US\$ 7,849	-	US\$ 7,837	US\$ 11,950	US\$ 11,819	US\$ 131	-	US\$ 3,981
	Hewlett Packard Enterprise Co	"	-	-	-	US\$ 10,661	-	US\$ 3,863	US\$ 11,564	US\$ 11,142	US\$ 422	-	US\$ 3,439
	Walt Disney Co/The	"	-	-	-	US\$ 3,246	-	US\$ 23,391	US\$ 25,026	US\$ 23,723	US\$ 1,303	-	US\$ 3,058
	General Dynamics Corp	"	-	-	-	US\$ 6,297	-	US\$ 9,418	US\$ 15,546	US\$ 14,412	US\$ 1,134	-	US\$ 1,238
	Wells Fargo & Co	Financial assets at amortized cost	-	-	-	US\$ 160,098	-	US\$ 20,630	US\$ -	US\$ -	US\$ -	-	US\$ 180,487
	Citigroup Global Market Inc.	"	-	-	-	US\$ 84,967	-	US\$ 100,000	US\$ -	US\$ -	US\$ -	-	US\$ 99,965
	JPMorgan Chase & Co.	"	-	-	-	US\$ -	-	US\$ 10,111	US\$ -	US\$ -	US\$ -	-	US\$ 95,058
	Goldman Sachs Group Inc/The	"	-	-	-	US\$ -	-	US\$ 14,930	US\$ -	US\$ -	US\$ -	-	US\$ 14,930

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal		Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal
TSMC Global	Government bond United States Treasury Note/Bond	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 419,942	-	US\$ 683,985	-	US\$ 836,067	-	US\$ 287,012
	United States Treasury Note/Bond	"	-	-	-	US\$ -	-	US\$ 243,371	-	US\$ 60,688	-	US\$ 182,533
	Agency bonds/Agency mortgage-backed securities Fannie Mae or Freddie Mac	Financial assets at fair value through other comprehensive income	-	-	-	US\$ -	-	US\$ 671,704	-	US\$ 630,072	-	US\$ 42,872
	Ginnie Mae	"	-	-	-	US\$ -	-	US\$ 371,076	-	US\$ 329,867	-	US\$ 41,775
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 31,529	-	US\$ 77	-	US\$ 31,812
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 31,618	-	US\$ -	-	US\$ 31,787
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 31,658	-	US\$ -	-	US\$ 31,756
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 31,057	-	US\$ 5	-	US\$ 31,174
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 30,824	-	US\$ 2,420	-	US\$ 28,723
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 28,376	-	US\$ -	-	US\$ 28,537
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 28,251	-	US\$ 243	-	US\$ 28,188
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 28,496	-	US\$ 3,626	-	US\$ 24,963
	FNMA TBA 30 Yr-4	"	-	-	-	US\$ 17,372	-	US\$ 413,102	-	US\$ 409,695	-	US\$ 21,036
	Freddie Mac Pool	"	-	-	-	US\$ -	-	US\$ 26,913	-	US\$ 6,834	-	US\$ 20,247
	FNMA TBA 30 Yr-3.5	"	-	-	-	US\$ 9,259	-	US\$ 538,814	-	US\$ 528,608	-	US\$ 19,673
	GNMA II TBA 30 Yr-3.5	"	-	-	-	US\$ 10,517	-	US\$ 405,941	-	US\$ 397,904	-	US\$ 18,900
	Ginnie Mae	"	-	-	-	US\$ -	-	US\$ 150,623	-	US\$ 132,937	-	US\$ 17,896
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 18,793	-	US\$ 1,872	-	US\$ 17,503
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 17,435	-	US\$ -	-	US\$ 17,474
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 16,176	-	US\$ 209	-	US\$ 15,890
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 15,207	-	US\$ 917	-	US\$ 14,294
	GNMA II TBA 30 Yr-3	"	-	-	-	US\$ 15,095	-	US\$ 546,063	-	US\$ 547,550	-	US\$ 14,249
	Freddie Mac	"	-	-	-	US\$ 696	-	US\$ 15,872	-	US\$ 2,926	-	US\$ 13,631
	Freddie Mac Gold Pool	"	-	-	-	US\$ -	-	US\$ 12,610	-	US\$ 2,904	-	US\$ 9,723
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 17,468	-	US\$ 8,915	-	US\$ 8,515
	FNMA TBA 30 Yr-4.5	"	-	-	-	US\$ 20,165	-	US\$ 369,946	-	US\$ 382,027	-	US\$ 8,394
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ 987	-	US\$ 207,006	-	US\$ 202,126	-	US\$ 6,155
	GNMA II TBA 30 Yr-4.5	"	-	-	-	US\$ 7,496	-	US\$ 56,467	-	US\$ 58,653	-	US\$ 5,381
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 13,115	-	US\$ 8,732	-	US\$ 4,377
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 28,040	-	US\$ 24,518	-	US\$ 3,592
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 720,211	-	US\$ 718,892	-	US\$ 3,253
	GNMA II TBA 30 Yr-4	"	-	-	-	US\$ -	-	US\$ 36,042	-	US\$ 35,090	-	US\$ 1,067
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 25,440	-	US\$ 24,718	-	US\$ 782
	Fannie Mae Pool	"	-	-	-	US\$ 16,230	-	US\$ -	-	US\$ 16,413	-	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 11,962	-	US\$ -	-	US\$ 12,079	-	US\$ -
	Freddie Mac Gold Pool	"	-	-	-	US\$ 19,392	-	US\$ -	-	US\$ 19,677	-	US\$ -
	Freddie Mac Pool	"	-	-	-	US\$ -	-	US\$ 30,881	-	US\$ 30,624	-	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 29,463	-	US\$ 11,441	-	US\$ 11,441	-	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 13,261	-	US\$ -	-	US\$ 12,741	-	US\$ -
	Ginnie Mae II Pool	"	-	-	-	US\$ 40,438	-	US\$ 29,498	-	US\$ 40,787	-	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 42,143	-	US\$ 42,162	-	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 22,677	-	US\$ 23,181	-	US\$ 23,181	-	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 12,810	-	US\$ 12,807	-	US\$ -
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 19,016	-	US\$ 18,664	-	US\$ -

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal			Ending Balance (Note)			
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)	Amount	
TSMC Global	Fannie Mae Pool	Financial assets at fair value through other comprehensive income	-	-	US\$	27,694	-	US\$	27,598	US\$	27,659	US\$	(61)	US\$	-
	Fannie Mae Pool	"	-	-	US\$	26,299	-	US\$	27,107	US\$	26,265	US\$	842	US\$	-
	Fannie Mae Pool	"	-	-	US\$	43,455	-	US\$	43,789	US\$	43,333	US\$	456	US\$	-
	Fannie Mae Pool	"	-	-	US\$	6,072	-	US\$	10,551	US\$	10,512	US\$	39	US\$	-
	Fannie Mae Pool	"	-	-	US\$	16,122	-	US\$	16,194	US\$	16,095	US\$	99	US\$	-
	Fannie Mae Pool	"	-	-	US\$	28,876	-	US\$	28,743	US\$	28,875	US\$	(132)	US\$	-
	Fannie Mae Pool	"	-	-	US\$	25,431	-	US\$	26,008	US\$	25,393	US\$	615	US\$	-
	Freddie Mac Pool	"	-	-	US\$	30,971	-	US\$	31,136	US\$	30,964	US\$	172	US\$	-
	Fannie Mae Pool	"	-	-	US\$	11,248	-	US\$	11,350	US\$	11,003	US\$	347	US\$	-
	Fannie Mae Pool	"	-	-	US\$	19,901	-	US\$	20,081	US\$	19,418	US\$	663	US\$	-
	Fannie Mae Pool	"	-	-	US\$	40,590	-	US\$	41,110	US\$	40,555	US\$	555	US\$	-
	Freddie Mac Pool	"	-	-	US\$	13,065	-	US\$	13,073	US\$	13,044	US\$	29	US\$	-
	Freddie Mac Pool	"	-	-	US\$	-	-	US\$	12,146	US\$	12,080	US\$	66	US\$	-
	Freddie Mac Pool	"	-	-	US\$	12,628	-	US\$	12,111	US\$	11,994	US\$	117	US\$	-
	FNMA TBA 30 Yr 5	"	-	-	US\$	3,603	-	US\$	65,896	US\$	65,813	US\$	83	US\$	-
	Ginnie Mae	"	-	-	US\$	17,223	-	US\$	17,315	US\$	17,223	US\$	92	US\$	-
	FNMA TBA 30 Yr 3	"	-	-	US\$	2,028	-	US\$	723,739	US\$	722,965	US\$	774	US\$	-
	FNMA TBA 15 Yr 3	"	-	-	US\$	3,073	-	US\$	12,739	US\$	12,724	US\$	15	US\$	-
	Freddie Mac Gold Pool	"	-	-	US\$	12,480	-	US\$	19,456	US\$	19,002	US\$	454	US\$	-
	Ginnie Mae II Pool	"	-	-	US\$	513	-	US\$	12,551	US\$	12,132	US\$	419	US\$	-
	Fannie Mae Pool	"	-	-	US\$	-	-	US\$	13,853	US\$	13,849	US\$	4	US\$	-
	Ginnie Mae II Pool	"	-	-	US\$	35,024	-	US\$	35,439	US\$	34,994	US\$	445	US\$	-
	Fannie Mae Pool	"	-	-	US\$	12,270	-	US\$	12,345	US\$	12,262	US\$	83	US\$	-
	Fannie Mae Pool	"	-	-	US\$	12,751	-	US\$	12,782	US\$	12,731	US\$	51	US\$	-
	Fannie Mae Pool	"	-	-	US\$	31,593	-	US\$	31,900	US\$	31,554	US\$	346	US\$	-
	Fannie Mae Pool	"	-	-	US\$	16,331	-	US\$	16,375	US\$	16,327	US\$	48	US\$	-
	Fannie Mae Pool	"	-	-	US\$	49,131	-	US\$	48,934	US\$	49,083	US\$	(149)	US\$	-
	Fannie Mae Pool	"	-	-	US\$	6,284	-	US\$	14,163	US\$	14,070	US\$	93	US\$	-
	GNMA II Pool MA6090	"	-	-	US\$	30,870	-	US\$	30,603	US\$	30,863	US\$	(260)	US\$	-
	GNMA II Pool MA6155	"	-	-	US\$	16,840	-	US\$	17,140	US\$	16,943	US\$	197	US\$	-
	Ginnie Mae II Pool	"	-	-	US\$	23,932	-	US\$	23,946	US\$	24,029	US\$	(83)	US\$	-
	Ginnie Mae II Pool	"	-	-	US\$	5,285	-	US\$	21,492	US\$	21,683	US\$	(191)	US\$	-
	Fannie Mae Pool	"	-	-	US\$	19,011	-	US\$	19,004	US\$	19,004	US\$	-	US\$	-

Note: The ending balance includes the amortization of premium/discount on bonds investments and other related adjustment.

(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, 2020

(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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities	February 11, 2020 (Note 1)	\$ 47,500,000 (Note 1)	Based on the terms in the purchase order	80 counterparties (Note 1), 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. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation EDS International Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric Co., Ltd.	-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms	
							Owner	Relationships	Transfer Date	Amount				
TSMC	Fab construction & installation of fab facilities				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 Mandartech Interiors Inc. Marketch International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd.									

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms	
							Owner	Relationships	Transfer Date	Amount				
TSMC	Fab construction & installation of fab facilities				<p>Tung Kang Steel Structure Corp.</p> <p>Uangyih-Tech Industrial Co., Ltd.</p> <p>Unelectra International Corp.</p> <p>United Integrated Services Co., Ltd.</p> <p>Versum Materials Taiwan Co., Ltd.</p> <p>Weltall Technology Corporation</p> <p>Wholtech System Hitech Limited</p> <p>Yang Lung-Shih Architect & Associates</p> <p>Yangtech Engineering Co., Ltd.</p> <p>Yankey Engineering Co., Ltd.</p> <p>Ying Pao Technology Inc.</p> <p>Zhao-Cheng Corp.</p> <p>84 counterparties (Note 1), including :</p> <p>ABB Ltd.</p> <p>Accudevice Co., Ltd.</p> <p>Air Liquide Far Eastern Ltd.</p> <p>Allis Electric Co., Ltd.</p> <p>Am-Power Machine International Enterprise Co., Ltd.</p> <p>Atlas Copco Taiwan Ltd.</p> <p>Atlas Technology Corp.</p> <p>Capital Machinery Limited</p> <p>Chen Yuan International Co., Ltd.</p> <p>Chenfull International Co., Ltd.</p> <p>Cheng Deh Fire Protection Industrial Corp.</p> <p>Chien Kuo Construction Co., Ltd.</p> <p>China Steel Structure Co., Ltd.</p> <p>Chun Yuan Steel Industry Co., Ltd.</p> <p>Chung-Lin General Contractors, Ltd.</p>									
	Fab construction & installation of fab facilities	May 12, 2020 (Note 1)	\$ 66,600,000 (Note 1)	Based on the terms in the purchase order		-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms		
							Owner	Relationships	Transfer Date	Amount					
TSMC	Fab construction & installation of fab facilities				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. 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. Marktech International Corp. Mega Union Technology Incorporated Obayashi Corporation Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd.										

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities				<p>Pan Asia (Engineers & Constructors) Corporation San Fu Chemical Co., Ltd. San Min Construction Development Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. 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 Wholtech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp. 102 counterparties (Note 2), including : ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd.</p>								
TSMC	Fab construction & installation of fab facilities	August 11, 2020 (Note 2)	\$ 57,700,000 (Note 2)	Based on the terms in the purchase order		-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms		
							Owner	Relationships	Transfer Date	Amount					
TSMC	Fab construction & installation of fab facilities				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. 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. Huang 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. JImr-Clean-Air Solution Tech.Services Co., Ltd.										

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms		
							Owner	Relationships	Transfer Date	Amount					
TSMC	Fab construction & installation of fab facilities				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. Marketch International Corp. Mega Union Technology Incorporated Obayashi Corporation Optimax Technology Corporation Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation San Fu Chemical Co., Ltd. San Min Construction Development Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. 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.										

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities				Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholtech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp. E-Ton Solar Tech Co., LTD	-	N/A	N/A	N/A				
TSMC	Buildings and facilities	August 20, 2020	\$ 860,000	Based on the terms in the purchase order	99 counterparties (Note2), including : ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Arizona State Land Department Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Central Taiwan Science Park Bureau, Ministry of Science and Technology 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.	-	N/A	N/A	N/A	Price comparison and price negotiation Price comparison and price negotiation	Manufacturing purpose Manufacturing purpose	None None	

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				<p>Cica-Huntek Chemical Technology Taiwan Co., Ltd.</p> <p>Confederate Technology Co., Ltd.</p> <p>Da-Cin Construction Co., Ltd.</p> <p>Desiccant Technology Corporation</p> <p>Evergreen Steel Corporation</p> <p>Exyte Taiwan Co., Ltd.</p> <p>Fortune Electric Co., Ltd.</p> <p>Fu Tsu Construction Co., Ltd.</p> <p>Haitech Engineering Co., Ltd.</p> <p>Hsieh Kun Co., Ltd.</p> <p>Hueng Luei Process Industry Co., Ltd.</p> <p>Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore)</p> <p>J.C. Yang Architect and Associates</p> <p>JG Environmental Technology Co., Ltd.</p> <p>Jjmr-Clean-Air Solution Tech.Services Co., Ltd.</p> <p>Jusun Instruments Co., Ltd.</p> <p>Kedge Construction Co., Ltd.</p> <p>Kinetics Technology Corporation</p> <p>L&K Engineering Co., Ltd.</p> <p>Lead-Fu Industrials Corporation</p> <p>Lee Ming Construction Co., Ltd.</p> <p>Li Jin Engineering Co., Ltd.</p> <p>Mandartech Interiors Inc.</p> <p>Markertech International Corp.</p> <p>Mega Union Technology Incorporated</p> <p>Organo Technology Co., Ltd.</p> <p>Ovivo Taiwan Co., Ltd.</p> <p>Pan Asia (Engineers & Constructors) Corporation</p> <p>San Fu Chemical Co., Ltd.</p>	-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Southern Taiwan Science Park Bureau, Ministry of Science and Technology 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 Wholtech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp. Li Jin Engineering Co., Ltd.								
VisEra	Fab construction & installation of fab facilities	July 17, 2020	\$1,680,000	Based on the terms in the purchase order		-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
VisEra	Fab construction & installation of fab facilities	December 7, 2020	\$1,930,000	Based on the terms in the purchase order	Acter Group Corporation Limited	-	N/A	N/A	N/A	Price comparison and price	Manufacturing purpose	None	

Note 1: The disclosures are expected information based on the capital appropriation approved by the Board of Directors. The actual information shall be subject to the final purchase order of TSMC.

Note 2: 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, 2020

(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)	
TSMC	TSMC North America	Subsidiary	Sales	\$ 824,139,751	61	Net 30 days from invoice date (Note)	-	(Note)	\$ 101,467,381	74
	GUC	Associate	Sales	5,607,239	-	Net 30 days from the end of the month of when invoice is issued	-	-	313,064	-
	TSMC China	Subsidiary	Purchases	19,971,901	19	Net 30 days from the end of the month of when invoice is issued	-	-	(1,643,070)	4
	TSMC Nanjing	Subsidiary	Purchases	16,933,672	16	Net 30 days from the end of the month of when invoice is issued	-	-	(1,889,906)	4
	WaferTech	Indirect subsidiary	Purchases	8,015,129	7	Net 30 days from the end of the month of when invoice is issued	-	-	(697,756)	2
	SSMC	Associate	Purchases	4,110,449	4	Net 30 days from the end of the month of when invoice is issued	-	-	(400,765)	1
	VIS	Associate	Purchases	3,494,631	3	Net 30 days from the end of the month of when invoice is issued	-	-	(311,406)	1
TSMC North America	GUC	Associate of TSMC	Sales	1,572,476 (US\$ 53,406)	-	Net 30 days from invoice date	-	-	57,354 (US\$ 2,041)	-
VisEra Tech	Xintec	Associate of TSMC	Sales	898,091	13	Net 30 days from the end of the month of when invoice is issued	-	-	187,488	20

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, 2020
(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)	Amount	Overdue		Allowance for Bad Debts
						Action Taken	Amounts Received in Subsequent Period	
TSMC	TSMC North America TSMC Nanjing GUC	Subsidiary Subsidiary Associate	\$ 102,858,283 203,209 313,064	41 Note 2 25	- - -	- - -	\$ - - -	- - -
TSMC China	TSMC Nanjing TSMC	The same parent company Parent company	20,710,244 (RMB 4,820,484) 1,643,070 (RMB 382,438)	Note 2 28	- -	- -	- -	- -
TSMC Nanjing	TSMC	Parent company	1,889,906 (RMB 439,891)	34	-	-	-	-
VisEra Tech	Xintec	Associate of TSMC	187,488	31	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	444,021 (US\$ 15,803)	Note 2	-	-	-	-
WaferTech	TSMC TSMC Development	The ultimate parent of the Company Parent company	697,756 (US\$ 24,834) 103,033 (US\$ 3,667)	41 Note 2	- -	- -	- -	- -

Note 1: The calculation of turnover days excludes other receivables from related parties.

Note 2: The ending balance is primarily consisted of other receivables, which is not applicable for the calculation of turnover days.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INTERCOMPANY RELATIONSHIPS AND SIGNIFICANT INTERCOMPANY TRANSACTIONS
FOR THE YEAR ENDED DECEMBER 31, 2020
(Amounts in Thousands of New Taiwan Dollars)

No.	Company Name	Counterparty	Nature of Relationship (Note 1)	Intercompany Transactions			Percentage of Consolidated Net Revenue or Total Assets
				Financial Statements Item	Amount	Terms (Note 2)	
0	TSMC	TSMC North America	1	Net revenue from sale of goods	\$ 824,139,751	-	62%
				Receivables from related parties	101,467,381	-	4%
				Other receivables from related parties	1,390,902	-	-
		TSMC Japan	1	Marketing expenses - commission	247,235	-	-
				Research and development expenses	106,086	-	-
		TSMC IDC	1	Marketing expenses - commission	735,295	-	-
				Purchases	19,971,901	-	1%
		TSMC Europe TSMC China	1	Marketing expenses - commission	209,573	-	-
				Proceeds from acquisition of property, plant and equipment	126,162	-	-
				Payables to related parties	1,643,070	-	-
Net revenue from royalties	214,210			-	1%		
TSMC Nanjing	1	Purchases	16,933,672	-	-		
		Proceeds from disposal of property, plant and equipment	527,134	-	-		
		Other receivables from related parties	203,209	-	-		
		Payables to related parties	1,889,906	-	-		
		Research and development expenses	341,816	-	-		
		Research and development expenses	2,931,005	-	-		
TSMC Canada TSMC Technology WaferTech	1	Payables to related parties	444,021	-	-		
		Purchases	8,015,129	-	1%		
		Payables to related parties	697,756	-	-		
1 2	TSMC China TSMC Development	TSMC Nanjing WaferTech	3 3	Other receivables from related parties	20,710,244	-	1%
				Other payables from related parties	103,033	-	-

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 INVESTEE OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA)
FOR THE YEAR ENDED DECEMBER 31, 2020
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investor Company	Investee Company	Location	Main Businesses and Products	Original Investment Amount	December 31, 2020 (Foreign Currencies in Thousands)	December 31, 2019 (Foreign Currencies in Thousands)	Shares (In Thousands)	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)	Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Note 1) (Foreign Currencies in Thousands)	Note
TSMC	TSMC Global TSMC Partners	Tortola, British Virgin Islands Tortola, British Virgin Islands	Investment activities Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	\$ 355,162,309 31,456,130	\$ 355,162,309 31,456,130	\$ 382,229,039 52,649,936	11 988,268	100 100		\$ 7,668,014 2,273,717	\$ 7,668,014 2,273,717	Subsidiary Subsidiary
	VIS	Hsin-Chu, Taiwan	Manufacturing, selling, 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	9,029,890	464,223	28		6,305,519	1,780,829	Associate
	VisEra Tech	Hsin-Chu, Taiwan	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	5,005,171	5,005,171	6,363,099	253,120	87		2,090,545	1,817,520	Subsidiary
	SSMC	Singapore	Manufacturing and selling of integrated circuits and other semiconductor devices	5,120,028	5,120,028	5,900,245	314	39		2,106,093	816,954	Associate
	TSMC North America	San Jose, California, U.S.A	Selling and marketing of integrated circuits and other semiconductor devices	333,718	333,718	4,568,059	11,000	100		294,316	294,316	Subsidiary
	Ximec	Taoyuan, Taiwan	Water level chip size packaging and wafer level post passivation interconnection service	1,988,317	1,988,317	2,554,123	111,282	41		1,727,445	709,125	Associate
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	386,568	1,328,620	46,688	35		850,007	296,142	Associate
	TSMC Arizona	Phoenix, Arizona, U.S.A.	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	855,599	-	842,745	30	100		(196)	(196)	Subsidiary
	TSMC Europe TSMC JDC VTAF III	Amsterdam, the Netherlands Yokohama, Japan Cayman Islands	Customer service and supporting activities Engineering support activities Investing in new start-up technology companies	15,749 302,560 1,318,846	15,749 - 1,318,846	537,737 292,266 214,881	- 11 -	100 100 98		60,142 (8,070) (14,453)	60,142 (8,070) (14,163)	Subsidiary Subsidiary Subsidiary
	TSMC Japan VTAF II	Yokohama, Japan Cayman Islands	Customer service and supporting activities Investing in new start-up technology companies	83,760 260,300	83,760 260,300	144,784 82,441	6 -	100 98		3,361 (2,066)	3,361 (2,024)	Subsidiary Subsidiary
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	42,395	80	100		1,598	1,598	Subsidiary
TSMC Partners	TSMC Development	Delaware, U.S.A	Investing in companies involved in the manufacturing related business in the semiconductor industry	16,491,220 (US\$ 586,939)	16,491,220 (US\$ 586,939)	29,493,929 (US\$ 1,049,718)	-	100		1,626,764 (US\$ 55,150)	Note 2	Subsidiary
	TSMC Technology	Delaware, U.S.A	Engineering support activities	401,282 (US\$ 14,282)	401,282 (US\$ 14,282)	769,414 (US\$ 27,384)	-	100		147,271 (US\$ 5,024)	Note 2	Subsidiary
	TSMC Canada	Ontario, Canada	Engineering support activities	64,623 (US\$ 2,300)	64,623 (US\$ 2,300)	256,777 (US\$ 9,139)	2,300	100		27,379 (US\$ 923)	Note 2	Subsidiary
VTAF III	Growth Fund	Cayman Islands	Investing in new start-up technology companies	70,348 (US\$ 2,504)	70,348 (US\$ 2,504)	123,940 (US\$ 4,411)	-	100		(1,280) (US\$ (43))	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	44,768 (US\$ 1,593)	44,768 (US\$ 1,593)	28,183 (US\$ 1,003)	4,693	28		(36,461) (US\$ (1,209))	Note 2	Associate
TSMC Development	WaterTech	Washington, U.S.A	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	-	-	4,610,909 (US\$ 164,107)	293,637	100		1,394,261 (US\$ 47,293)	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.

Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR YEAR ENDED DECEMBER 31, 2020

(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, 2020 (US\$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2020 (US\$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of December 31, 2020	Accumulated Inward Remittances of Earnings as of December 31, 2020
					Outflow (US\$ in Thousands)	Inflow						
TSMC China	Manufacturing, selling, 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)	\$ 7,200,634	100%	\$ 6,999,772 (Note 2)	\$ 64,243,766	\$ -
TSMC Nanjing	Manufacturing, selling, 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)	12,143,866	100%	12,205,157 (Note 2)	33,573,482	-

Accumulated Investment in Mainland China as of December 31, 2020 (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)	\$ 1,110,373,199 (Note 3)

Note 1: TSMC directly invested US\$596,000 thousand in TSMC China and US\$1,000,000 thousands in TSMC Nanjing.

Note 2: Amount was recognized based on the audited financial statements.

Note 3: The upper limit on investment in mainland China is determined by sixty percent (60%) of the Company's consolidated net worth.

TABLE 11

Taiwan Semiconductor Manufacturing Company Limited

**INFORMATION ON MAJOR SHAREHOLDERS
DECEMBER 31, 2020**

Shareholders (Note)	Shares	
	Total Shares Owned	Ownership Percentage
ADR-Taiwan Semiconductor Manufacturing Company, Ltd.	5,321,819,398	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, 2020 and 2019 and
Independent Auditors' Report**

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, 2020 and 2019, 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, 2020 and 2019, 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, 2020. 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 matters for the Company's parent company only financial statements for the year ended December 31, 2020 are 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 understand 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 EUI/CIP at year end 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 at year end.
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, 2020 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 Yu Feng Huang.



Deloitte & Touche
Taipei, Taiwan
Republic of China

February 9, 2021



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)

ASSETS	December 31, 2020		December 31, 2019	
	Amount	%	Amount	%
CURRENT ASSETS				
Cash and cash equivalents (Note 6)	\$ 303,165,717	11	\$ 141,450,698	6
Financial assets at fair value through profit or loss (Note 7)	2,125,825	-	27,481	-
Hedging financial assets (Note 8)	-	-	3,504	-
Notes and accounts receivable, net (Note 9)	34,611,115	1	49,124,933	2
Receivables from related parties (Note 30)	101,781,174	4	82,194,501	4
Other receivables from related parties (Note 30)	1,714,334	-	968,123	-
Inventories (Notes 5 and 10)	130,298,036	5	76,263,851	4
Other financial assets	1,425,594	-	358,245	-
Other current assets	5,827,453	-	4,726,789	-
Total current assets	580,949,248	21	355,118,125	16
NONCURRENT ASSETS				
Financial assets at fair value through other comprehensive income	834,830	-	877,110	-
Investments accounted for using equity method (Note 11)	564,597,508	21	558,503,889	24
Property, plant and equipment (Notes 5 and 12)	1,511,784,556	55	1,310,900,634	57
Right-of-use assets (Notes 5 and 13)	25,184,827	1	15,030,020	1
Intangible assets (Notes 5 and 14)	21,733,597	1	16,271,444	1
Deferred income tax assets (Notes 5 and 24)	24,678,225	1	16,728,622	1
Refundable deposits	1,249,552	-	2,046,228	-
Other noncurrent assets	2,492,770	-	-	-
Total noncurrent assets	2,152,555,865	79	1,920,357,947	84
TOTAL	\$ 2,733,505,113	100	\$ 2,275,476,072	100
LIABILITIES AND EQUITY				
CURRENT LIABILITIES				
Short-term loans (Notes 15 and 27)	\$ 175,659,726	7	\$ 148,510,290	7
Financial liabilities at fair value through profit or loss (Note 7)	93,153	-	982,302	-
Hedging financial liabilities (Note 8)	-	-	1,798	-
Accounts payable	36,238,637	1	36,029,135	2
Payables to related parties (Note 30)	7,017,623	-	5,716,635	-
Salary and bonus payable	17,478,038	1	14,215,161	1
Accrued profit sharing bonus to employees and compensation to directors (Note 26)	35,262,937	1	23,526,149	1
Payables to contractors and equipment suppliers	156,342,457	6	139,754,491	6
Cash dividends payable (Note 19)	129,651,902	5	129,651,902	6
Income tax payable (Notes 5 and 24)	53,297,025	2	32,241,052	1
Long-term liabilities - current portion (Notes 16 and 27)	2,600,000	-	31,800,000	1
Accrued expenses and other current liabilities (Notes 5, 13, 18, 20, 27 and 30)	66,888,237	2	43,111,632	2
Total current liabilities	680,529,735	25	605,540,547	27
NONCURRENT LIABILITIES				
Bonds payable (Notes 16 and 27)	170,450,745	6	25,100,000	1
Deferred income tax liabilities (Notes 5 and 24)	1,716,367	-	333,606	-
Lease liabilities (Notes 5, 13 and 27)	18,480,111	1	13,300,263	1
Net defined benefit liability (Note 17)	11,914,074	1	9,182,496	-
Guarantee deposits (Notes 18 and 27)	259,073	-	170,446	-
Others	497,752	-	438,590	-
Total noncurrent liabilities	203,318,122	8	48,525,401	2
Total liabilities	883,847,857	33	654,065,948	29
EQUITY ATTRIBUTABLE TO SHAREHOLDERS OF THE PARENT				
Capital stock (Note 19)	259,303,805	9	259,303,805	11
Capital surplus (Note 19)	56,347,243	2	56,339,709	2
Retained earnings (Note 19)				
Appropriated as legal capital reserve	311,146,899	11	311,146,899	14
Appropriated as special capital reserve	42,259,146	2	10,675,106	-
Unappropriated earnings	1,235,280,036	45	1,011,512,974	45
	1,588,686,081	58	1,333,334,979	59
Others (Note 19)	(54,679,873)	(2)	(27,568,369)	(1)
Total equity	1,849,657,256	67	1,621,410,124	71
TOTAL	\$ 2,733,505,113	100	\$ 2,275,476,072	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)

	2020		2019	
	Amount	%	Amount	%
NET REVENUE (Notes 5, 20 and 30)	\$1,314,793,013	100	\$1,059,646,793	100
COST OF REVENUE (Notes 5, 10, 26, 30 and 33)	<u>632,772,608</u>	<u>48</u>	<u>579,507,047</u>	<u>55</u>
GROSS PROFIT BEFORE REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO SUBSIDIARIES AND ASSOCIATES	682,020,405	52	480,139,746	45
REALIZED (UNREALIZED) GROSS PROFIT ON SALES TO SUBSIDIARIES AND ASSOCIATES	<u>(16,382)</u>	<u>-</u>	<u>3,395</u>	<u>-</u>
GROSS PROFIT	<u>682,004,023</u>	<u>52</u>	<u>480,143,141</u>	<u>45</u>
OPERATING EXPENSES (Notes 5, 26, and 30)				
Research and development	108,613,789	8	90,482,815	8
General and administrative	26,312,285	2	20,353,327	2
Marketing	<u>4,359,436</u>	<u>1</u>	<u>3,231,777</u>	<u>-</u>
Total operating expenses	<u>139,285,510</u>	<u>11</u>	<u>114,067,919</u>	<u>10</u>
OTHER OPERATING INCOME AND EXPENSES, NET (Notes 12, 13 and 26)	<u>746,994</u>	<u>-</u>	<u>(151,230)</u>	<u>-</u>
INCOME FROM OPERATIONS	<u>543,465,507</u>	<u>41</u>	<u>365,923,992</u>	<u>35</u>
NON-OPERATING INCOME AND EXPENSES				
Share of profits of subsidiaries and associates (Note 11)	34,902,194	3	22,906,788	2
Interest income (Note 21)	951,877	-	2,002,877	-
Other income	209,885	-	177,374	-
Foreign exchange gain (loss), net (Note 32)	(1,759,386)	-	1,994,370	-
Finance costs (Note 22)	(1,766,297)	-	(3,191,609)	-
Other gains and losses, net (Note 23)	<u>6,615,162</u>	<u>-</u>	<u>(1,068,573)</u>	<u>-</u>
Total non-operating income and expenses	<u>39,153,435</u>	<u>3</u>	<u>22,821,227</u>	<u>2</u>
INCOME BEFORE INCOME TAX	582,618,942	44	388,745,219	37
INCOME TAX EXPENSE (Notes 5 and 24)	<u>64,733,555</u>	<u>5</u>	<u>43,481,551</u>	<u>4</u>
NET INCOME	<u>517,885,387</u>	<u>39</u>	<u>345,263,668</u>	<u>33</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME

(In Thousands of New Taiwan Dollars, Except Earnings Per Share)

	2020		2019	
	Amount	%	Amount	%
OTHER COMPREHENSIVE INCOME (LOSS)				
(Notes 5, 11, 17, 19 and 24)				
Items that will not be reclassified subsequently to profit or loss:				
Remeasurement of defined benefit obligation	\$ (3,516,749)	-	\$ 253,895	-
Unrealized gain/(loss) on investments in equity instruments at fair value through other comprehensive income	(41,995)	-	121,740	-
Gain (loss) on hedging instruments	24,085	-	(109,592)	-
Share of other comprehensive gain of subsidiaries and associates	453,603	-	194,524	-
Income tax benefit (expense) related to items that will not be reclassified subsequently	<u>422,663</u>	<u>-</u>	<u>(20,992)</u>	<u>-</u>
	<u>(2,658,393)</u>	<u>-</u>	<u>439,575</u>	<u>-</u>
Items that may be reclassified subsequently to profit or loss:				
Exchange differences arising on translation of foreign operations	(29,853,603)	(2)	(14,698,117)	(2)
Share of other comprehensive gain of subsidiaries and associates	<u>2,190,087</u>	<u>-</u>	<u>2,435,334</u>	<u>-</u>
	<u>(27,663,516)</u>	<u>(2)</u>	<u>(12,262,783)</u>	<u>(2)</u>
Other comprehensive loss for the year, net of income tax	<u>(30,321,909)</u>	<u>(2)</u>	<u>(11,823,208)</u>	<u>(2)</u>
TOTAL COMPREHENSIVE INCOME FOR THE YEAR	<u>\$ 487,563,478</u>	<u>37</u>	<u>\$ 333,440,460</u>	<u>31</u>
EARNINGS PER SHARE (NT\$, Note 25)				
Basic earnings per share	<u>\$ 19.97</u>		<u>\$ 13.32</u>	
Diluted earnings per share	<u>\$ 19.97</u>		<u>\$ 13.32</u>	

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		Capital Surplus		Retained Earnings		Legal Capital Reserve		Special Reserve		Unappropriated Earnings		Total		Others				Total Equity
	Shares (In Thousands)	Amount	Capital Surplus	Legal Capital Reserve	Special Reserve	Unappropriated Earnings	Total	Legal Capital Reserve	Special Reserve	Unappropriated Earnings	Total	Foreign Currency Translation Reserve	Unrealized Gain (Loss) on Assets Through Other Comprehensive Income	Gain (Loss) on Hedging Instruments	Unearned Stock-Based Employee Compensation	Total	Total Equity		
BALANCE, JANUARY 1, 2019	25,930,380	\$ 259,303,805	\$ 56,315,932	\$ 276,033,811	\$ 26,907,527	\$ 1,073,706,503	\$ 1,376,647,841	\$ 276,033,811	\$ 26,907,527	\$ 1,073,706,503	\$ 1,376,647,841	\$ (12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$ (15,449,913)	\$ 1,676,817,665		
Appropriations of earnings	-	-	-	-	-	(35,113,088)	-	-	-	(35,113,088)	-	-	-	-	-	-	-		
Legal capital reserve	-	-	-	35,113,088	-	(16,232,421)	-	35,113,088	-	(16,232,421)	-	-	-	-	-	-	-		
Special reserve	-	-	-	(16,232,421)	-	(388,955,707)	-	(16,232,421)	-	(388,955,707)	-	-	-	-	-	-	(388,955,707)		
Cash dividends to shareholders	-	-	-	35,113,088	(16,232,421)	(407,836,374)	-	35,113,088	(16,232,421)	(407,836,374)	-	-	-	-	-	-	(388,955,707)		
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Net income in 2019	-	-	-	-	-	345,263,668	-	-	-	345,263,668	-	-	-	-	-	-	345,263,668		
Other comprehensive income (loss) in 2019, net of income tax	-	-	-	-	-	217,059	-	-	-	217,059	-	(14,829,053)	2,898,483	(109,697)	-	(12,040,267)	(11,823,208)		
Total comprehensive income (loss) in 2019	-	-	-	-	-	345,480,727	-	-	-	345,480,727	-	(14,829,053)	2,898,483	(109,697)	-	(12,040,267)	33,440,460		
Disposal of investments in equity instruments at fair value through other comprehensive income	-	-	-	-	-	162,118	-	-	-	162,118	-	-	(162,118)	-	-	(162,118)	-		
Basis adjustment for gain on hedging instruments	-	-	-	-	-	-	-	-	-	-	-	-	-	82,276	-	82,276	82,276		
Adjustments to share of changes in equities of associates	-	-	19,414	-	-	-	-	-	-	-	-	-	-	-	1,653	1,653	21,067		
From share of changes in equities of subsidiaries	-	-	370	-	-	-	-	-	-	-	-	-	-	-	-	-	370		
Donation from shareholders	-	-	3,993	-	-	-	-	-	-	3,993	-	-	-	-	-	-	3,993		
BALANCE, DECEMBER 31, 2019	25,930,380	259,303,805	56,339,709	311,146,899	10,675,106	1,011,512,974	1,333,334,979	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	-	-	-	-	-	(31,584,040)	-	-	-	(31,584,040)	-	-	-	-	-	-	-		
Legal capital reserve	-	-	-	31,584,040	-	(259,303,805)	-	31,584,040	-	(259,303,805)	-	-	-	-	-	-	(259,303,805)		
Special reserve	-	-	-	(259,303,805)	-	(290,887,845)	-	(259,303,805)	-	(290,887,845)	-	-	-	-	-	-	(259,303,805)		
Cash dividends to shareholders	-	-	-	31,584,040	-	517,885,387	-	31,584,040	-	517,885,387	-	-	-	-	-	-	517,885,387		
Total	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Net income in 2020	-	-	-	-	-	(3,121,793)	-	-	-	(3,121,793)	-	(30,130,227)	2,906,026	24,085	-	(27,200,116)	(30,321,909)		
Other comprehensive income (loss) in 2020, net of income tax	-	-	-	-	-	514,765,594	-	-	-	514,765,594	-	(30,130,227)	2,906,026	24,085	-	(27,200,116)	487,563,478		
Total comprehensive income (loss) in 2020	-	-	-	-	-	511,643,801	-	-	-	511,643,801	-	(30,130,227)	2,906,026	24,085	-	(27,200,116)	457,242,769		
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		
From share of changes in equities of subsidiaries	-	-	7,242	-	-	-	-	-	-	-	-	-	-	-	-	-	7,242		
Donation from shareholders	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
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	\$ 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			

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)

	2020	2019
CASH FLOWS FROM OPERATING ACTIVITIES		
Income before income tax	\$ 582,618,942	\$ 388,745,219
Adjustments for:		
Depreciation expense	313,379,686	267,464,543
Amortization expense	7,047,694	5,338,886
Finance costs	1,766,297	3,191,609
Share of profits of subsidiaries and associates	(34,902,194)	(22,906,788)
Interest income	(951,877)	(2,002,877)
Loss (gain) on disposal or retirement of property, plant and equipment, net	(266,581)	582,289
Gain on disposal of intangible assets, net	(7,960)	(6,183)
Reversal of impairment loss on property, plant and equipment	-	(301,384)
Loss (gain) on financial instruments at fair value through profit or loss, net	(8,289)	18,291
Gain on disposal of investments accounted for using equity method, net	-	(15,200)
Unrealized (realized) gross profit on sales to subsidiaries and associates	16,382	(3,395)
Gain on foreign exchange, net	(7,747,615)	(6,289,978)
Dividend income	(186,854)	(177,374)
Gain on lease modification	(2,574)	(2,555)
Changes in operating assets and liabilities:		
Financial instruments at fair value through profit or loss	(2,973,199)	964,207
Notes and accounts receivable, net	13,002,568	(20,264,116)
Receivables from related parties	(19,586,673)	4,258,083
Other receivables from related parties	(684,360)	442,439
Inventories	(54,034,185)	21,824,309
Other financial assets	(1,091,188)	(211,869)
Other current assets	(1,174,789)	(515,166)
Accounts payable	400,931	5,626,778
Payables to related parties	1,300,988	1,169,883
Salary and bonus payable	3,262,877	1,772,454
Accrued profit sharing bonus to employees and compensation to directors	11,736,788	(393,163)
Accrued expenses and other current liabilities	19,228,140	(3,618,263)
Net defined benefit liability	(785,171)	(215,014)
Cash generated from operations	829,357,784	644,475,665
Income taxes paid	(49,747,636)	(51,043,594)
Net cash generated by operating activities	<u>779,610,148</u>	<u>593,432,071</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2020	2019
CASH FLOWS FROM INVESTING ACTIVITIES		
Acquisitions of:		
Equity interest in subsidiary	\$ (937,679)	\$ -
Property, plant and equipment	(494,310,468)	(450,287,869)
Intangible assets	(9,482,909)	(9,252,712)
Proceeds from disposal or redemption of:		
Financial assets at fair value through other comprehensive income	-	775,282
Property, plant and equipment	1,070,855	1,118,338
Proceeds from return of capital of financial assets carried at cost	-	2,300,000
Proceeds from return of capital of investments in equity instruments at fair value through other comprehensive income	285	1,107
Derecognition of hedging financial instruments	19,786	(93,536)
Interest received	958,590	2,016,735
Other dividends received	186,854	177,374
Dividends received from investments accounted for using equity method	2,752,043	2,225,194
Increase in prepayments for leases	(4,687,970)	-
Refundable deposits paid	(667,219)	(1,447,188)
Refundable deposits refunded	<u>1,427,743</u>	<u>1,007,262</u>
Net cash used in investing activities	<u>(503,670,089)</u>	<u>(451,460,013)</u>
CASH FLOWS FROM FINANCING ACTIVITIES		
Increase in short-term loans	31,944,333	59,615,602
Proceeds from short-term bills payable	7,485,303	-
Repayments of short-term bills payable	(7,500,000)	-
Proceeds from issuance of bonds	149,085,000	-
Repayment of bonds	(31,800,000)	(34,900,000)
Payments for transaction costs attributable to the issuance of bonds	(155,818)	-
Repayment of the principal portion of lease liabilities	(2,168,114)	(2,630,308)
Interest paid	(1,729,192)	(3,536,180)
Guarantee deposits received	144,364	23,063
Guarantee deposits refunded	(13,695)	(4,061)
Cash dividends	(259,303,805)	(259,303,805)
Payment of partial acquisition of interests in subsidiaries	(220,480)	(10,602)
Proceeds from partial disposal of interests in subsidiaries	-	18,500
Donation from shareholders	<u>7,064</u>	<u>3,906</u>
Net cash used in financing activities	<u>(114,225,040)</u>	<u>(240,723,885)</u>

(Continued)

Taiwan Semiconductor Manufacturing Company Limited

PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

(In Thousands of New Taiwan Dollars)

	2020	2019
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	\$ 161,715,019	\$ (98,751,827)
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	<u>141,450,698</u>	<u>240,202,525</u>
CASH AND CASH EQUIVALENTS, END OF YEAR	<u>\$ 303,165,717</u>	<u>\$ 141,450,698</u>

The accompanying notes are an integral part of the parent company only financial statements. (Concluded)

Taiwan Semiconductor Manufacturing Company Limited

NOTES TO PARENT COMPANY ONLY FINANCIAL STATEMENTS FOR THE YEARS ENDED DECEMBER 31, 2020 AND 2019

(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

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, selling, 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 9, 2021.

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 Regulations Governing the Preparation of Financial Reports by Securities Issuers for application starting from 2021 and the IFRSs issued by International Accounting Standards Board (IASB) and endorsed by the FSC with effective date starting 2021

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Amendments to IFRS 9, IAS 39, IFRS 7 and IFRS 16 “Interest Rate Benchmark Reform - Phase 2”	January 1, 2021

- c. The IFRSs issued by IASB but not yet endorsed and issued into effect by the FSC

<u>New, Revised or Amended Standards and Interpretations</u>	<u>Effective Date Issued by IASB</u>
Annual Improvements to IFRS Standards 2018–2020	January 1, 2022
Amendments to IFRS 3 “Reference to the Conceptual Framework”	January 1, 2022
Amendments to IFRS 10 and IAS 28 “Sale or Contribution of Assets between an Investor and its Associate or Joint Venture”	To be determined by IASB
Amendments to IAS 1 “Classification of Liabilities as Current or Non-current”	January 1, 2023
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

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 as a result of the initial adoption of the aforementioned standards or interpretations and related applicable period. The related impact will be disclosed when the Company completes the 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 or acquisition of the item of property, plant and equipment.

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.

Guarantee Deposit

Guarantee deposit mainly consists of cash received under deposit agreements with customers to ensure they have access to the Company's specified capacity. Cash received from customers is recorded as guarantee deposit upon receipt. Guarantee deposits are refunded to customers when terms and conditions set forth in the deposit agreements have been satisfied.

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, 2020	December 31, 2019
Cash and deposits in banks	<u>\$ 303,165,717</u>	<u>\$ 141,450,698</u>

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, 2020	December 31, 2019
<u>Financial assets</u>		
Mandatorily measured at FVTPL		
Forward exchange contracts	<u>\$ 2,125,825</u>	<u>\$ 27,481</u>
<u>Financial liabilities</u>		
Held for trading		
Forward exchange contracts	<u>\$ 93,153</u>	<u>\$ 982,302</u>

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)
<u>December 31, 2020</u>		
Sell NT\$	January 2021 to March 2021	NT\$144,697,981
<u>December 31, 2019</u>		
Sell NT\$	January 2020 to June 2020	NT\$108,428,027
Sell JPY	January 2020 to February 2020	JPY57,471,581

8. HEDGING FINANCIAL INSTRUMENTS

	December 31, 2020	December 31, 2019
<u>Financial assets- current</u>		
Cash flow hedges		
Forward exchange contracts	\$ <u> -</u>	\$ <u> 3,504</u>
<u>Financial liabilities- current</u>		
Cash flow hedges		
Forward exchange contracts	\$ <u> -</u>	\$ <u> 1,798</u>

The Company entered into forward exchange contracts to partially hedge foreign exchange rate risks associated with certain highly probable forecast transactions (capital expenditures). The hedge ratio is adjusted in response to the changes in the financial market and capped at 100%. The forward exchange contracts have maturities of 12 months or less.

On the basis of economic relationships, the Company expects that the value of forward exchange contracts and the value of hedged transactions will change in opposite directions in response to movements in foreign exchange rates.

The main source of hedge ineffectiveness in these hedging relationships is driven by the effect of the counterparty's own credit risk on the fair value of forward exchange contracts. No other sources of ineffectiveness emerged from these hedging relationships. For the years ended December 31, 2020 and 2019, refer to Note 19(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 following tables summarize the information relating to the hedges for foreign currency risk.

December 31, 2019

Hedging Instruments	Contract Amount (In Thousands)	Maturity	Balance in Other Equity (Continuing Hedges)
Forward exchange contracts	Sell NT\$1,342,392	January 2020	\$ (3,820)

The effect for the years ended December 31, 2020 and 2019 is detailed below:

Hedging Instruments/Hedged Items	Increase (Decrease) in Value Used for Calculating Hedge Ineffectiveness	
	Years Ended December 31	
	2020	2019
Hedging Instruments		
Forward exchange contracts	\$ <u>24,085</u>	\$ <u>(109,592)</u>
Hedged Items		
Forecast transaction (capital expenditures)	\$ <u>(24,085)</u>	\$ <u>109,592</u>

9. NOTES AND ACCOUNTS RECEIVABLE, NET

	December 31, 2020	December 31, 2019
At amortized cost		
Notes and accounts receivable	\$ 31,899,524	\$ 46,188,113
Less: Loss allowance	<u>(243,710)</u>	<u>(319,045)</u>
	31,655,814	45,869,068
At FVTOCI	<u>2,955,301</u>	<u>3,255,865</u>
	<u>\$ 34,611,115</u>	<u>\$ 49,124,933</u>

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, 2020	December 31, 2019
Not past due	\$ 32,068,195	\$ 43,374,378
Past due		
Past due within 30 days	2,780,426	6,054,771
Past due 31-60 days	6,072	10,864
Past due 61-120 days	37	720
Past due over 121 days	95	3,245
Less: Loss allowance	<u>(243,710)</u>	<u>(319,045)</u>
	<u>\$ 34,611,115</u>	<u>\$ 49,124,933</u>

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	
	2020	2019
Balance, beginning of year	\$ 319,045	\$ 7,132
Provision (Reversal)	<u>(75,335)</u>	<u>311,913</u>
Balance, end of year	<u>\$ 243,710</u>	<u>\$ 319,045</u>

For the years ended December 31, 2020 and 2019, 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, 2020	December 31, 2019
Finished goods	\$ 21,338,980	\$ 8,533,179
Work in process	88,575,222	49,268,466
Raw materials	13,758,417	15,046,116
Supplies and spare parts	<u>6,625,417</u>	<u>3,416,090</u>
	<u>\$ 130,298,036</u>	<u>\$ 76,263,851</u>

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, as illustrated below:

	Years Ended December 31	
	2020	2019
Inventory losses (reversal of write-down of inventories)	<u>\$ 3,642,829</u>	<u>\$ (2,071,888)</u>

The aforementioned reversal of write-down of inventories for the year ended December 31, 2019 excluded wafer contamination losses. Please refer to related losses in Note 33.

11. INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

Investments accounted for using the equity method consisted of the following:

	December 31, 2020	December 31, 2019
Subsidiaries	\$ 545,784,630	\$ 539,843,621
Associates	<u>18,812,878</u>	<u>18,660,268</u>
	<u>\$ 564,597,508</u>	<u>\$ 558,503,889</u>

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, 2020	December 31, 2019	December 31, 2020	December 31, 2019
TSMC Global Ltd. (TSMC Global)	Investment activities	Tortola, British Virgin Islands	\$ 382,229,039	\$ 397,737,270	100%	100%
TSMC China Company Limited (TSMC China)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Shanghai, China	64,243,766	57,289,154	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	52,649,936	53,388,267	100%	100%
TSMC Nanjing Company Limited (TSMC Nanjing)	Manufacturing, selling, testing and computer-aided design of integrated circuits and other semiconductor devices	Nanjing, China	33,573,482	21,364,939	100%	100%
VisEra Technologies Company Ltd. (VisEra Tech)	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	Hsinchu, Taiwan	6,363,099	4,541,741	87%	87%
TSMC North America	Selling and marketing of integrated circuits and other semiconductor devices	San Jose, California, U.S.A.	4,568,059	4,569,825	100%	100%
TSMC Arizona Corporation (TSMC Arizona)	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	Phoenix, Arizona, U.S.A.	842,745	-	100%	-
TSMC Europe B.V. (TSMC Europe)	Customer service and supporting activities	Amsterdam, the Netherlands	537,737	462,479	100%	100%
TSMC Design Technology Japan, Inc. (TSMC JDC)	Engineering support activities	Yokohama, Japan	292,266	-	100%	-
VentureTech Alliance Fund III, L.P. (VTAF III)	Investing in new start-up technology companies	Cayman Islands	214,881	231,504	98%	98%
TSMC Japan Limited (TSMC Japan)	Customer service and supporting activities	Yokohama, Japan	144,784	142,620	100%	100%
VentureTech Alliance Fund II, L.P. (VTAF II)	Investing in new start-up technology companies	Cayman Islands	82,441	75,095	98%	98%
TSMC Korea Limited (TSMC Korea)	Customer service and supporting activities	Seoul, Korea	42,395	40,727	100%	100%
			<u>\$ 545,784,630</u>	<u>\$ 539,843,621</u>		

The Company established a subsidiary in November 2020 and invested in TSMC Arizona for the amount of NT\$855,599 thousand.

The Company established a subsidiary in January 2020 and continually increased its investment in TSMC JDC for the amount of NT\$302,560 thousand.

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, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Vanguard International Semiconductor Corporation (VIS)	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	Hsinchu, Taiwan	\$ 9,029,890	\$ 9,027,572	28%	28%

(Continued)

Name of Associate	Principal Activities	Place of Incorporation and Operation	Carrying Amount		% of Ownership and Voting Rights Held by the Company	
			December 31, 2020	December 31, 2019	December 31, 2020	December 31, 2019
Systems on Silicon Manufacturing Company Pte Ltd. (SSMC)	Manufacturing and selling of integrated circuits and other semiconductor devices	Singapore	\$ 5,900,245	\$ 6,502,174	39%	39%
Xintec Inc. (Xintec)	Wafer level chip size packaging and wafer level post passivation interconnection service	Taoyuan, Taiwan	2,554,123	1,846,145	41%	41%
Global Unichip Corporation (GUC)	Researching, developing, manufacturing, testing and marketing of integrated circuits	Hsinchu, Taiwan	<u>1,328,620</u>	<u>1,284,377</u>	35%	35%
			<u>\$ 18,812,878</u>	<u>\$ 18,660,268</u>		

(Concluded)

As of December 31, 2020 and 2019, 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 investments accounted for using the equity method 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, 2020	December 31, 2019
VIS	<u>\$ 53,849,925</u>	<u>\$ 36,812,923</u>
Xintec	<u>\$ 20,420,233</u>	<u>\$ 8,958,195</u>
GUC	<u>\$ 15,827,184</u>	<u>\$ 11,251,774</u>

12. PROPERTY, PLANT AND EQUIPMENT

	December 31, 2020	December 31, 2019
Assets used by the Company	\$1,510,807,506	\$1,310,882,220
Assets subject to operating leases	<u>977,050</u>	<u>18,414</u>
	<u>\$1,511,784,556</u>	<u>\$1,310,900,634</u>

a. Assets used by the Company

	Land	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Cost</u>						
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	<u>\$ 3,212,000</u>	<u>\$ 485,468,808</u>	<u>\$ 3,449,111,312</u>	<u>\$ 63,277,681</u>	<u>\$ 220,142,047</u>	<u>\$ 4,221,211,848</u>

(Continued)

	Land	Buildings	Machinery and Equipment	Office Equipment	Equipment under Installation and Construction in Progress	Total
<u>Accumulated depreciation and impairment</u>						
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	<u>\$ -</u>	<u>\$ 249,513,714</u>	<u>\$ 2,420,657,989</u>	<u>\$ 40,232,639</u>	<u>\$ -</u>	<u>\$ 2,710,404,342</u>
Carrying amounts at December 31, 2020	<u>\$ 3,212,000</u>	<u>\$ 235,955,094</u>	<u>\$ 1,028,453,323</u>	<u>\$ 23,045,042</u>	<u>\$ 220,142,047</u>	<u>\$ 1,510,807,506</u>
<u>Cost</u>						
Balance at January 1, 2019	\$ 3,212,000	\$ 381,150,802	\$ 2,585,629,465	\$ 43,722,686	\$ 171,277,329	\$ 3,184,992,282
Additions	-	20,149,613	173,199,951	6,908,814	355,119,486	555,377,864
Disposals or retirements	-	(158,970)	(21,635,299)	(986,625)	-	(22,780,894)
Transfers from right-of-use assets	-	-	619,779	-	-	619,779
Balance at December 31, 2019	<u>\$ 3,212,000</u>	<u>\$ 401,141,445</u>	<u>\$ 2,737,813,896</u>	<u>\$ 49,644,875</u>	<u>\$ 526,396,815</u>	<u>\$ 3,718,209,031</u>
<u>Accumulated depreciation and impairment</u>						
Balance at January 1, 2019	\$ -	\$ 198,301,715	\$ 1,931,489,635	\$ 29,950,916	\$ -	\$ 2,159,742,266
Additions	-	24,077,824	235,731,567	5,392,188	-	265,201,579
Disposals or retirements	-	(144,402)	(16,206,228)	(985,679)	-	(17,336,309)
Transfers from right-of-use assets	-	-	20,659	-	-	20,659
Reversal of impairment	-	-	(301,384)	-	-	(301,384)
Balance at December 31, 2019	<u>\$ -</u>	<u>\$ 222,235,137</u>	<u>\$ 2,150,734,249</u>	<u>\$ 34,357,425</u>	<u>\$ -</u>	<u>\$ 2,407,326,811</u>
Carrying amounts at December 31, 2019	<u>\$ 3,212,000</u>	<u>\$ 178,906,308</u>	<u>\$ 587,079,647</u>	<u>\$ 15,287,450</u>	<u>\$ 526,396,815</u>	<u>\$ 1,310,882,220</u>

(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 2019, the Company recognized a reversal of impairment loss of NT\$301,384 thousand due to redeployment of certain idle machinery and equipment. Such reversal of impairment loss was recognized in other operating income and expenses.

b. Assets subject to operating leases

	Buildings	Machinery and Equipment	Total
<u>Cost</u>			
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	<u>\$ 182,643</u>	<u>\$ 1,199,011</u>	<u>\$ 1,381,654</u>

(Continued)

	Buildings	Machinery and Equipment	Total
<u>Accumulated depreciation</u>			
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	<u>-</u>	<u>202,593</u>	<u>202,593</u>
Balance at December 31, 2020	<u>\$ 182,612</u>	<u>\$ 221,992</u>	<u>\$ 404,604</u>
Carrying amounts at December 31, 2020	<u>\$ 31</u>	<u>\$ 977,019</u>	<u>\$ 977,050</u>
<u>Cost</u>			
Balance at January 1, 2019	<u>\$ 494,582</u>	<u>\$ -</u>	<u>\$ 494,582</u>
Balance at December 31, 2019	<u>\$ 494,582</u>	<u>\$ -</u>	<u>\$ 494,582</u>
<u>Accumulated depreciation</u>			
Balance at January 1, 2019	\$ 457,657	\$ -	\$ 457,657
Additions	<u>18,511</u>	<u>-</u>	<u>18,511</u>
Balance at December 31, 2019	<u>\$ 476,168</u>	<u>\$ -</u>	<u>\$ 476,168</u>
Carrying amounts at December 31, 2019	<u>\$ 18,414</u>	<u>\$ -</u>	<u>\$ 18,414</u>

(Concluded)

Operating leases relate to leases of buildings and leases of machinery and equipment with lease terms approximately between 1 to 2 years. The lessees do not have purchase options to acquire the assets at the expiry of the lease periods.

The maturity analysis of operating lease payments receivable from the buildings and machinery and equipment is as follows:

	December 31, 2020	December 31, 2019
Year 1	<u>\$ 132,128</u>	<u>\$ 1,458</u>

13. LEASE ARRANGEMENTS

a. Right-of-use assets

	December 31, 2020	December 31, 2019
<u>Carrying amounts</u>		
Land	\$ 24,874,590	\$ 13,830,199
Buildings	283,086	402,836
Machinery and equipment	-	775,809
Office equipment	<u>27,151</u>	<u>21,176</u>
	<u>\$ 25,184,827</u>	<u>\$ 15,030,020</u>

	Years Ended December 31	
	2020	2019
Additions to right-of-use assets	<u>\$ 12,558,794</u>	<u>\$ 639,879</u>
Depreciation of right-of-use assets		
Land	\$ 1,298,315	\$ 944,052
Buildings	131,436	105,873
Machinery and equipment	775,809	1,184,374
Office equipment	<u>13,612</u>	<u>10,154</u>
	<u>\$ 2,219,172</u>	<u>\$ 2,244,453</u>
Income from subleasing right-of-use assets (classified under other operating income and expenses, net)	<u>\$ 52,317</u>	<u>\$ 44,796</u>

b. Lease liabilities

	December 31, 2020	December 31, 2019
<u>Carrying amounts</u>		
Current portion (classified under accrued expenses and other current liabilities)	\$ 1,379,097	\$ 1,843,556
Noncurrent portion	<u>18,480,111</u>	<u>13,300,263</u>
	<u>\$ 19,859,208</u>	<u>\$ 15,143,819</u>

Ranges of discount rates for lease liabilities are as follows:

	December 31, 2020	December 31, 2019
Land	0.48%-0.94%	0.67%-0.94%
Buildings	0.54%-0.71%	0.67%-0.71%
Machinery and equipment	-	3.24%
Office equipment	0.28%-0.71%	0.64%-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 2 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.

The Company leases machinery and equipment for use in operation with lease terms of 2 years. The Company has purchase options to acquire leasehold machinery and equipment at the end of the lease terms. As of September 30, 2020, the aforementioned lease contract has been expired.

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, 2020	December 31, 2019
Year 1	<u>\$ 142,340</u>	<u>\$ 50,862</u>
e. Other lease information		
	Years Ended December 31	
	2020	2019
Expenses relating to short-term leases	<u>\$ 3,171,455</u>	<u>\$ 4,991,637</u>
Expenses relating to low-value asset leases	<u>\$ 72</u>	<u>\$ -</u>
Expenses relating to variable lease payments not included in the measurement of lease liabilities	<u>\$ 212,955</u>	<u>\$ 158,375</u>
	Years Ended December 31	
	2020	2019
Total cash outflow for leases	<u>\$ 5,823,617</u>	<u>\$ 7,324,585</u>

14. INTANGIBLE ASSETS

	Goodwill	Technology License Fees	Software and System Design Costs	Patent and Others	Total
<u>Cost</u>					
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	<u>\$ 1,567,756</u>	<u>\$ 22,110,332</u>	<u>\$ 35,685,061</u>	<u>\$ 11,245,851</u>	<u>\$ 70,609,000</u>
<u>Accumulated amortization and impairment</u>					
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	<u>\$ -</u>	<u>\$ 12,174,686</u>	<u>\$ 29,683,225</u>	<u>\$ 7,017,492</u>	<u>\$ 48,875,403</u>
Carrying amounts at December 31, 2020	<u>\$ 1,567,756</u>	<u>\$ 9,935,646</u>	<u>\$ 6,001,836</u>	<u>\$ 4,228,359</u>	<u>\$ 21,733,597</u>
<u>Cost</u>					
Balance at January 1, 2019	\$ 1,567,756	\$ 10,921,844	\$ 29,140,011	\$ 7,607,537	\$ 49,237,148
Additions	-	4,879,562	3,639,706	663,509	9,182,777
Disposals or retirements	-	-	(260,904)	-	(260,904)
Balance at December 31, 2019	<u>\$ 1,567,756</u>	<u>\$ 15,801,406</u>	<u>\$ 32,518,813</u>	<u>\$ 8,271,046</u>	<u>\$ 58,159,021</u>
<u>Accumulated amortization and impairment</u>					
Balance at January 1, 2019	\$ -	\$ 8,703,391	\$ 22,863,319	\$ 5,240,508	\$ 36,807,218
Additions	-	1,066,834	3,610,902	661,150	5,338,886
Disposals or retirements	-	-	(258,527)	-	(258,527)
Balance at December 31, 2019	<u>\$ -</u>	<u>\$ 9,770,225</u>	<u>\$ 26,215,694</u>	<u>\$ 5,901,658</u>	<u>\$ 41,887,577</u>
Carrying amounts at December 31, 2019	<u>\$ 1,567,756</u>	<u>\$ 6,031,181</u>	<u>\$ 6,303,119</u>	<u>\$ 2,369,388</u>	<u>\$ 16,271,444</u>

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, 2020 and 2019, to reflect the relevant specific risk in the cash-generating unit.

For the years ended December 31, 2020 and 2019, the Company did not recognize any impairment loss on goodwill.

15. SHORT-TERM LOANS

	December 31, 2020	December 31, 2019
Unsecured loans	\$ 88,559,026	\$ 118,522,290
Related parties unsecured loans	<u>87,100,700</u>	<u>29,988,000</u>
	<u>\$ 175,659,726</u>	<u>\$ 148,510,290</u>
Loan content		
US\$ (in thousands)	\$ 3,300,000	\$ 3,370,000
EUR(in thousands)	2,398,000	1,410,000
Annual interest rate	(0.54)%-0.33%	0%-2.22%
Maturity date	Due by July 2022	Due by July 2020

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, 2020	December 31, 2019
Domestic unsecured bonds	\$ 173,197,000	\$ 56,900,000
Less: Discounts on bonds payable	(146,255)	-
Less: Current portion	<u>(2,600,000)</u>	<u>(31,800,000)</u>
	<u>\$ 170,450,745</u>	<u>\$ 25,100,000</u>

The major terms of domestic unsecured bonds are as follows:

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
<u>NT\$ unsecured bonds</u>					
100-2	B	January 2012 to January 2019	\$ 7,000,000	1.46%	Bullet repayment; interest payable annually
101-1	B	August 2012 to August 2019	9,000,000	1.40%	The same as above

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
101-2	B	September 2012 to September 2019	\$ 9,000,000	1.39%	Bullet repayment; interest payable annually
101-3	-	October 2012 to October 2022	4,400,000	1.53%	The same as above
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
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
102-3	B	August 2013 to August 2019	8,500,000	1.52%	The same as above
102-4	C	September 2013 to March 2019	1,400,000	1.60%	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)
	D	September 2013 to March 2021	2,600,000	1.85%	The same as above
	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

(Continued)

Issuance	Tranche	Issuance Period	Total Amount	Coupon Rate	Repayment and Interest Payment
109-2	C	April 2020 to April 2030	\$ 5,300,000	0.60%	Bullet repayment; interest payable annually
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
	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

(Concluded)

Issuance	Tranche	Issuance Period	Total Amount (US\$ in Thousands)	Coupon Rate	Repayment and Interest Payment
US\$ unsecured <u>bonds</u>					
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

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\$2,309,527 thousand and NT\$2,063,508 thousand for the years ended December 31, 2020 and 2019, 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	
	2020	2019
Current service cost	\$ 123,311	\$ 135,645
Net interest expense	<u>81,604</u>	<u>123,951</u>
Components of defined benefit costs recognized in profit or loss	<u>204,915</u>	<u>259,596</u>
Remeasurement on the net defined benefit liability:		
Return on plan assets (excluding amounts included in net interest expense)	(139,212)	(124,344)
Actuarial loss (gain) arising from experience adjustments	494,051	(438,009)
Actuarial gain arising from changes in demographic assumptions	-	(233,239)
Actuarial loss arising from changes in financial assumptions	<u>3,161,910</u>	<u>541,697</u>
Components of defined benefit costs recognized in other comprehensive income	<u>3,516,749</u>	<u>(253,895)</u>
Total	<u>\$ 3,721,664</u>	<u>\$ 5,701</u>

The pension costs of the aforementioned defined benefit plans were recognized in profit or loss by the following categories:

	Years Ended December 31	
	2020	2019
Cost of revenue	\$ 126,274	\$ 157,845
Research and development expenses	57,306	72,686
General and administrative expenses	18,248	25,063
Marketing expenses	<u>3,087</u>	<u>4,002</u>
	<u>\$ 204,915</u>	<u>\$ 259,596</u>

The amounts arising from the defined benefit obligation of the Company were as follows:

	December 31, 2020	December 31, 2019
Present value of defined benefit obligation	\$ 16,980,277	\$ 13,484,090
Fair value of plan assets	<u>(5,066,203)</u>	<u>(4,301,594)</u>
Net defined benefit liability	<u>\$ 11,914,074</u>	<u>\$ 9,182,496</u>

Movements in the present value of the defined benefit obligation were as follows:

	Years Ended December 31	
	2020	2019
Balance, beginning of year	\$ 13,484,090	\$ 13,662,684
Current service cost	123,311	135,645
Interest expense	118,808	175,401
Remeasurement:		
Actuarial loss (gain) arising from experience adjustments	494,051	\$ (438,009)
Actuarial gain arising from changes in demographic assumptions	-	(233,239)
Actuarial loss arising from changes in financial assumptions	3,161,910	541,697
Benefits paid from plan assets	(398,986)	(344,131)
Benefits paid directly by the Company	<u>(2,907)</u>	<u>(15,958)</u>
Balance, end of year	<u>\$ 16,980,277</u>	<u>\$ 13,484,090</u>

Movements in the fair value of the plan assets were as follows:

	Years Ended December 31	
	2020	2019
Balance, beginning of year	\$ 4,301,594	\$ 4,011,279
Interest income	37,204	51,450
Remeasurement:		
Return on plan assets (excluding amounts included in net interest expense)	139,212	124,344
Contributions from employer	987,179	458,652
Benefits paid from plan assets	<u>(398,986)</u>	<u>(344,131)</u>
Balance, end of year	<u>\$ 5,066,203</u>	<u>\$ 4,301,594</u>

The fair value of the plan assets by major categories at the end of reporting period was as follows:

	December 31, 2020	December 31, 2019
Cash	\$ 632,769	\$ 713,204
Equity instruments	2,926,745	2,313,828
Debt instruments	<u>1,506,689</u>	<u>1,274,562</u>
	<u>\$ 5,066,203</u>	<u>\$ 4,301,594</u>

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:

	<u>Measurement Date</u>	
	December 31, 2020	December 31, 2019
Discount rate	0.40%	0.90%
Future salary increase rate	3.00% (Note)	3.00%

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\$694,732 thousand and NT\$724,963 thousand as of December 31, 2020 and 2019, 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\$835,964 thousand and NT\$706,502 thousand as of December 31, 2020 and 2019, 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\$229,934 thousand to the defined benefit plans in the next year starting from December 31, 2020. The weighted average duration of the defined benefit obligation is 9 years.

18. GUARANTEE DEPOSITS

	December 31, 2020	December 31, 2019
Capacity guarantee	\$ -	\$ 1,499,400
Others	<u>312,230</u>	<u>191,352</u>
	<u>\$ 312,230</u>	<u>\$ 1,690,752</u>
Current portion (classified under accrued expenses and other current liabilities)	\$ 53,157	\$ 1,520,306
Noncurrent portion	<u>259,073</u>	<u>170,446</u>
	<u>\$ 312,230</u>	<u>\$ 1,690,752</u>

Some of guarantee deposits were refunded to customers by offsetting related accounts receivable.

19. EQUITY

a. Capital stock

	December 31, 2020	December 31, 2019
Authorized shares (in thousands)	<u>28,050,000</u>	<u>28,050,000</u>
Authorized capital	<u>\$ 280,500,000</u>	<u>\$ 280,500,000</u>
Issued and paid shares (in thousands)	<u>25,930,380</u>	<u>25,930,380</u>
Issued capital	<u>\$ 259,303,805</u>	<u>\$ 259,303,805</u>

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, 2020, 1,064,364 thousand ADSs of the Company were traded on the NYSE. The number of common shares represented by the ADSs was 5,321,819 thousand shares (one ADS represents five common shares).

b. Capital surplus

	December 31, 2020	December 31, 2019
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 share of changes in equities of subsidiaries	121,843	121,843
From share of changes in equities of associates	302,526	302,234
Donations	<u>40,578</u>	<u>33,336</u>
	<u>\$ 56,347,243</u>	<u>\$ 56,339,709</u>

Under the relevant laws, the capital surplus generated from donations and the excess of the issuance price over the par value of capital stock (including the stock issued for new capital, mergers and convertible bonds) 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; however, when generated from issuance of restricted shares for employees, such capital surplus may not be used for any purpose.

c. Retained earnings and dividend policy

The amendments to the Company's Articles of Incorporation had been approved by the Company's shareholders in its meeting held on June 5, 2019, which stipulate 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.

The Company's amended Articles of Incorporation provide that, 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 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 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 2020	Third Quarter of 2020	Second Quarter of 2020	First Quarter of 2020
	February 9, 2021	November 10, 2020	August 11, 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	Third Quarter of 2019	Second Quarter of 2019	First Quarter of 2019
	February 11, 2020	November 12, 2019	August 13, 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 2020 is to be presented for approval in the the Company's shareholders' meeting to be held on June 8, 2021 (expected).

The appropriation of 2018 earnings has been approved by the Company's shareholders in its meeting held on June 5, 2019. The appropriation and cash dividends per share were as follows:

	Appropriation of Earnings	Cash Dividends Per Share (NT\$)
Legal capital reserve	\$ 35,113,088	
Special capital reserve	\$ (11,459,458)	
Cash dividends to shareholders	\$ 207,443,044	\$ 8.0

d. Others

Changes in others were as follows:

	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)

	Year Ended December 31, 2019				
	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	\$(12,042,347)	\$ (3,429,324)	\$ 23,601	\$ (1,843)	\$(15,449,913)
Exchange differences arising on translation of foreign operations	(14,698,117)	-	-	-	(14,698,117)
Unrealized gain (loss) on financial assets at FVTOCI					
Equity instruments	-	121,740	-	-	121,740
Cumulative unrealized gain (loss) of equity instruments transferred to retained earnings due to disposal	-	(162,118)	-	-	(162,118)
Gain (loss) arising on changes in the fair value of hedging instruments	-	-	(109,592)	-	(109,592)
Transferred to initial carrying amount of hedged items	-	-	82,276	-	82,276
Share of other comprehensive income (loss) of subsidiaries and associates	(130,936)	2,767,267	(105)	-	2,636,226
Share of unearned stock-based employee compensation of subsidiaries and associates	-	-	-	1,653	1,653
Income tax effect	-	9,476	-	-	9,476
Balance, end of year	<u>\$(26,871,400)</u>	<u>\$ (692,959)</u>	<u>\$ (3,820)</u>	<u>\$ (190)</u>	<u>\$(27,568,369)</u>

The aforementioned other equity includes the changes in other equities of the Company and the Company's share of its subsidiaries and associates.

20. NET REVENUE

a. Disaggregation of revenue from contracts with customers

Product	Years Ended December 31	
	2020	2019
Wafer	\$1,161,829,728	\$ 921,095,318
Others	<u>152,963,285</u>	<u>138,551,475</u>
	<u>\$1,314,793,013</u>	<u>\$1,059,646,793</u>
Geography	Years Ended December 31	
	2020	2019
Taiwan	\$ 129,082,884	\$ 84,255,256
United States	809,731,866	628,365,912
China	233,783,358	208,101,401
Europe, the Middle East and Africa	70,213,432	67,568,157
Japan	63,299,176	57,468,605
Others	<u>8,682,297</u>	<u>13,887,462</u>
	<u>\$1,314,793,013</u>	<u>\$1,059,646,793</u>

The Company categorized the net revenue mainly based on the countries where the customers are headquartered.

Platform	Years Ended December 31	
	2020	2019
Smartphone	\$ 632,600,168	\$ 518,553,492
High Performance Computing	432,049,509	312,770,702
Internet of Things	108,814,310	85,508,427
Automotive	43,735,803	47,451,547
Digital Consumer Electronics	53,440,805	53,214,200
Others	<u>44,152,418</u>	<u>42,148,425</u>
	<u>\$1,314,793,013</u>	<u>\$1,059,646,793</u>

Resolution	Years Ended December 31	
	2020	2019
5-nanometer	\$ 89,433,830	\$ -
7-nanometer	388,846,412	245,690,772
10-nanometer	3,341,769	22,860,307
16-nanometer	195,205,444	191,214,471
20-nanometer	8,298,531	9,357,161
28-nanometer	147,291,670	147,286,987
40/45-nanometer	101,979,651	92,227,266
65-nanometer	60,435,664	68,263,047
90-nanometer	29,036,165	25,296,617
0.11/0.13 micron	32,727,855	22,639,549
0.15/0.18 micron	84,997,377	76,565,220
0.25 micron and above	<u>20,235,360</u>	<u>19,693,921</u>
Wafer revenue	<u>\$1,161,829,728</u>	<u>\$ 921,095,318</u>

b. Contract balances

	December 31, 2020	December 31, 2019	January 1, 2019
Contract liabilities (classified under accrued expenses and other current liabilities)	<u>\$ 9,365,661</u>	<u>\$ 4,095,915</u>	<u>\$ 2,740,649</u>

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\$3,843,787 thousand and NT\$2,192,221 thousand for the years ended December 31, 2020 and 2019, respectively.

c. Refund liabilities

Estimated sales returns and other allowances is made and adjusted based on historical experience and the consideration of varying contractual terms, which amounted to NT\$38,937,425 thousand and NT\$33,893,735 thousand for the years ended December 31, 2020 and 2019, respectively. As of December 31, 2020 and 2019, the aforementioned refund liabilities amounted to NT\$30,995,223 thousand and NT\$17,673,937 thousand (classified under accrued expenses and other current liabilities), respectively.

21. INTEREST INCOME

	Years Ended December 31	
	2020	2019
Interest income		
Bank deposits	\$ 951,877	\$ 1,998,705
Financial assets at amortized cost	<u>-</u>	<u>4,172</u>
	<u>\$ 951,877</u>	<u>\$ 2,002,877</u>

22. FINANCE COSTS

	Years Ended December 31	
	2020	2019
Interest expense		
Corporate bonds	\$ 1,082,311	\$ 1,139,935
Bank loans	500,080	1,869,335
Lease liabilities	168,854	181,390
Related parties	-	454
Others	<u>15,052</u>	<u>495</u>
	<u>\$ 1,766,297</u>	<u>\$ 3,191,609</u>

23. OTHER GAINS AND LOSSES, NET

	Years Ended December 31	
	2020	2019
Gain (loss) on financial instruments at FVTPL, net		
Mandatorily measured at FVTPL	\$ 6,430,713	\$ (1,361,538)
Gain on disposal of investments accounted for using equity method, net	-	15,200
Other gains, net	<u>184,449</u>	<u>277,765</u>
	<u>\$ 6,615,162</u>	<u>\$ (1,068,573)</u>

24. INCOME TAX

a. Income tax expense recognized in profit or loss

Income tax expense consisted of the following:

	Years Ended December 31	
	2020	2019
Current income tax expense		
Current tax expense recognized in the current year	\$ 70,657,349	\$ 44,184,422
Income tax adjustments on prior years	70,617	224,691
Other income tax adjustments	<u>149,768</u>	<u>135,056</u>
	<u>70,877,734</u>	<u>44,544,169</u>
Deferred income tax benefit		
The origination and reversal of temporary differences	<u>(6,144,179)</u>	<u>(1,062,618)</u>
	<u>(6,144,179)</u>	<u>(1,062,618)</u>
Income tax expense recognized in profit or loss	<u>\$ 64,733,555</u>	<u>\$ 43,481,551</u>

A reconciliation of income before income tax and income tax expense recognized in profit or loss was as follows:

	Years Ended December 31	
	2020	2019
Income before tax	<u>\$ 582,618,942</u>	<u>\$ 388,745,219</u>
Income tax expense at the statutory rate	\$ 116,523,788	\$ 77,749,044
Tax effect of adjusting items:		
Nondeductible (deductible) items in determining taxable income	1,248,820	(4,124,417)
Tax-exempt income	(65,988,096)	(39,808,121)
Additional income tax under the Alternative Minimum Tax Act	18,872,837	10,367,916
Additional income tax on unappropriated earnings	-	5,903,794
The origination and reversal of temporary differences	(6,144,179)	(1,062,618)
Income tax credits	<u>-</u>	<u>(5,903,794)</u>
	64,513,170	43,121,804
Income tax adjustments on prior years	70,617	224,691
Other income tax adjustments	<u>149,768</u>	<u>135,056</u>
Income tax expense recognized in profit or loss	<u>\$ 64,733,555</u>	<u>\$ 43,481,551</u>

Under the amendment to the R.O.C Statute of Industrial Innovation in 2019, the amounts of unappropriated earnings in 2018 and thereafter used for building or purchasing specific assets or technologies can qualify for deduction when computing the income tax on unappropriated earnings.

b. Income tax expense recognized in other comprehensive income

	Years Ended December 31	
	2020	2019
Deferred income tax benefit (expense)		
Related to remeasurement of defined benefit obligation	\$ 422,010	\$ (30,468)
Related to unrealized gain/loss on investments in equity instruments at FVTOCI	<u>653</u>	<u>9,476</u>
	<u>\$ 422,663</u>	<u>\$ (20,992)</u>

c. Deferred income tax balance

The analysis of deferred income tax assets and liabilities was as follows:

	December 31, 2020	December 31, 2019
Deferred income tax assets		
Temporary differences		
Depreciation	\$ 18,723,852	\$ 12,927,764
Refund liability	3,719,427	2,120,873
Net defined benefit liability	1,341,960	1,016,248
Unrealized loss on inventories	826,666	437,327
Investments in equity instruments at FVTOCI	66,320	65,667
Others	<u>-</u>	<u>160,743</u>
	<u>\$ 24,678,225</u>	<u>\$ 16,728,622</u>

(Continued)

	December 31, 2020	December 31, 2019
Deferred income tax liabilities		
Temporary differences		
Unrealized exchange gains	\$ (866,452)	\$ (333,606)
Others	<u>(849,915)</u>	<u>-</u>
	<u>\$ (1,716,367)</u>	<u>\$ (333,606)</u>

(Concluded)

	Year Ended December 31, 2020			
	Balance, Beginning of Year	Recognized in		Balance, End of Year
		Profit or Loss	Other Comprehensive Income	
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	<u>160,743</u>	<u>(160,743)</u>	<u>-</u>	<u>-</u>
	<u>\$ 16,728,622</u>	<u>\$ 7,526,940</u>	<u>\$ 422,663</u>	<u>\$ 24,678,225</u>
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	\$ (333,606)	\$ (532,846)	\$ -	\$ (866,452)
Others	<u>-</u>	<u>(849,915)</u>	<u>-</u>	<u>(849,915)</u>
	<u>\$ (333,606)</u>	<u>\$ (1,382,761)</u>	<u>\$ -</u>	<u>\$ (1,716,367)</u>
	Year Ended December 31, 2019			
	Balance, Beginning of Year	Recognized in		Balance, End of Year
		Profit or Loss	Other Comprehensive Income	
Deferred income tax assets				
Temporary differences				
Depreciation	\$ 11,177,890	\$ 1,749,874	\$ -	\$ 12,927,764
Refund liability	2,543,884	(423,011)	-	2,120,873
Net defined benefit liability	1,084,874	(38,158)	(30,468)	1,016,248
Unrealized loss on inventories	723,835	(286,508)	-	437,327
Investments in equity instruments at FVTOCI	56,191	-	9,476	65,667
Others	<u>-</u>	<u>160,743</u>	<u>-</u>	<u>160,743</u>
	<u>\$ 15,586,674</u>	<u>\$ 1,162,940</u>	<u>\$ (20,992)</u>	<u>\$ 16,728,622</u>
Deferred income tax liabilities				
Temporary differences				
Unrealized exchange gains	\$ (61,677)	\$ (271,929)	\$ -	\$ (333,606)
Others	<u>(171,607)</u>	<u>171,607</u>	<u>-</u>	<u>-</u>
	<u>\$ (233,284)</u>	<u>\$ (100,322)</u>	<u>\$ -</u>	<u>\$ (333,606)</u>

- d. The deductible temporary differences for which no deferred income tax assets have been recognized

As of December 31, 2020 and 2019, the aggregate deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$55,521,034 thousand and NT\$33,445,504 thousand, respectively.

- e. Unused tax-exemption information

As of December 31, 2020, the profits generated from the following projects of the Company are exempt from income tax for a five-year period:

Tax-exemption Period

Construction and expansion of 2009	2018 to 2022
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- f. The information of unrecognized deferred income tax liabilities associated with investments

As of December 31, 2020 and 2019, the aggregate taxable temporary differences associated with investments in subsidiaries not recognized as deferred income tax liabilities amounted to NT\$152,827,360 thousand and NT\$131,085,673 thousand, respectively.

- g. Income tax examination

The tax authorities have examined income tax returns of the Company through 2018. All investment tax credit adjustments assessed by the tax authorities have been recognized accordingly.

25. EARNINGS PER SHARE

	Years Ended December 31	
	2020	2019
Basic EPS	<u>\$ 19.97</u>	<u>\$ 13.32</u>
Diluted EPS	<u>\$ 19.97</u>	<u>\$ 13.32</u>

EPS is computed as follows:

	Amounts (Numerator)	Number of Shares (Denominator) (In Thousands)	EPS (NT\$)
<u>Year Ended December 31, 2020</u>			
Basic/Diluted EPS			
Net income available to common shareholders	<u>\$ 517,885,387</u>	<u>25,930,380</u>	<u>\$19.97</u>
<u>Year Ended December 31, 2019</u>			
Basic/Diluted EPS			
Net income available to common shareholders	<u>\$ 345,263,668</u>	<u>25,930,380</u>	<u>\$13.32</u>

26. ADDITIONAL INFORMATION OF EXPENSES BY NATURE

	<u>Years Ended December 31</u>	
	<u>2020</u>	<u>2019</u>
a. Depreciation of property, plant and equipment and right-of-use assets		
Recognized in cost of revenue	\$ 288,762,450	\$ 243,160,463
Recognized in operating expenses	24,585,627	24,285,569
Recognized in other operating income and expenses	<u>31,609</u>	<u>18,511</u>
	<u>\$ 313,379,686</u>	<u>\$ 267,464,543</u>
b. Amortization of intangible assets		
Recognized in cost of revenue	\$ 4,732,478	\$ 2,971,336
Recognized in operating expenses	<u>2,315,216</u>	<u>2,367,550</u>
	<u>\$ 7,047,694</u>	<u>\$ 5,338,886</u>
c. Employee benefits expenses		
Post-employment benefits		
Defined contribution plans	\$ 2,309,527	\$ 2,063,508
Defined benefit plans	<u>204,915</u>	<u>259,596</u>
	2,514,442	2,323,104
Other employee benefits	<u>123,287,720</u>	<u>94,236,265</u>
	<u>\$ 125,802,162</u>	<u>\$ 96,559,369</u>
Employee benefits expense summarized by function		
Recognized in cost of revenue	\$ 75,864,049	\$ 58,502,618
Recognized in operating expenses	<u>49,938,113</u>	<u>38,056,751</u>
	<u>\$ 125,802,162</u>	<u>\$ 96,559,369</u>

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:

	<u>Years Ended December 31</u>	
	<u>2020</u>	<u>2019</u>
Profit sharing bonus to employees	<u>\$ 34,753,184</u>	<u>\$ 23,165,745</u>

The Company's profit sharing bonus to employees and compensation to directors for 2020, 2019 and 2018 had been approved by the Board of Directors of the Company, as illustrated below:

Resolution Date of the Company's Board of Directors in its meeting	Years Ended December 31		
	2020	2019	2018
	February 9, 2021	February 11, 2020	February 19, 2019
Profit sharing bonus to employees	\$ 34,753,184	\$ 23,165,745	\$ 23,570,040
Compensation to directors	\$ 509,753	\$ 360,404	\$ 349,272

There is no significant difference between the aforementioned approved amounts and the amounts charged against earnings of 2020, 2019 and 2018, 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	
	2020	2019
Additions of property, plant and equipment	\$ 512,900,891	\$ 555,377,864
Exchange of assets	(1,148)	(3,287,138)
Changes in payables to contractors and equipment suppliers	(18,609,540)	(101,720,581)
Transferred to initial carrying amount of hedged items	<u>20,265</u>	<u>(82,276)</u>
Payments for acquisition of property, plant and equipment	<u>\$ 494,310,468</u>	<u>\$ 450,287,869</u>
Disposal of property, plant and equipment	\$ 1,112,923	\$ 1,286,373
Changes in other receivables from related parties	(55,271)	(175,900)
Changes in other financial assets	<u>13,203</u>	<u>7,865</u>
Proceeds from disposal of property, plant and equipment	<u>\$ 1,070,855</u>	<u>\$ 1,118,338</u>
Additions of intangible assets	\$ 12,510,446	\$ 9,182,777
Changes in accounts payable	191,429	69,935
Changes in accrued expenses and other current liabilities	<u>(3,218,966)</u>	<u>-</u>
Payments for acquisition of intangible assets	<u>\$ 9,482,909</u>	<u>\$ 9,252,712</u>

b. Reconciliation of liabilities arising from financing activities

	Balance as of January 1, 2020	Financing Cash Flow	Non-cash changes			Balance as of December 31, 2020
			Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	
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
Guarantee deposits	<u>1,690,752</u>	<u>130,669</u>	<u>2,059</u>	<u>-</u>	<u>(1,511,250)</u>	<u>312,230</u>
Total	<u>\$ 222,244,861</u>	<u>\$ 146,879,685</u>	<u>\$ (5,762,194)</u>	<u>\$ 6,853,545</u>	<u>\$ (1,333,988)</u>	<u>\$ 368,881,909</u>

	Balance as of January 1, 2019	Financing Cash Flow	Non-cash changes			Balance as of December 31, 2019
			Foreign Exchange Movement	Leases Modifications	Other Changes (Note)	
Short-term loans	\$ 91,982,340	\$ 59,615,602	\$ (3,087,652)	\$ -	\$ -	\$ 148,510,290
Bonds payable	91,800,000	(34,900,000)	-	-	-	56,900,000
Lease liabilities	17,758,578	(2,811,698)	(17,489)	33,038	181,390	15,143,819
Guarantee deposits	9,494,648	19,002	1,674	-	(7,824,572)	1,690,752
Total	<u>\$ 211,035,566</u>	<u>\$ 21,922,906</u>	<u>\$ (3,103,467)</u>	<u>\$ 33,038</u>	<u>\$ (7,643,182)</u>	<u>\$ 222,244,861</u>

Note: Other changes include amortization of bonds payable, financial cost of lease liabilities and guarantee deposits refunded to customers by offsetting related accounts receivable.

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, 2020	December 31, 2019
Financial assets		
FVTPL (Note 1)	\$ 2,125,825	\$ 27,481
FVTOCI (Note 2)	3,790,131	4,132,975
Hedging financial assets	-	3,504
Amortized cost (Note 3)	<u>440,992,185</u>	<u>272,886,863</u>
	<u>\$ 446,908,141</u>	<u>\$ 277,050,823</u>
Financial liabilities		
FVTPL (Note 4)	\$ 93,153	\$ 982,302
Hedging financial liabilities	-	1,798
Amortized cost (Note 5)	<u>734,363,642</u>	<u>553,905,061</u>
	<u>\$ 734,456,795</u>	<u>\$ 554,889,161</u>

Note 1: Financial assets mandatorily measured at FVTPL.

Note 2: Including notes and accounts receivable (net) and equity investments.

Note 3: Including cash and cash equivalents, financial assets at amortized cost, notes and accounts receivable (including related parties), other receivables 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 and guarantee deposits.

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 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

The majority of the Company's revenue is denominated in U.S. dollar and over one-half of its capital expenditures are denominated in currencies other than NT dollar, primarily in U.S. dollar, Japanese yen and Euro. As a result, any significant fluctuations to its disadvantage in 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 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, 2020 and 2019, a hypothetical adverse foreign currency exchange rate change of 10% would have decreased its net income by NT\$832,231 thousand and NT\$2,112,450 thousand, respectively, and decreased its other comprehensive income by NT\$107,690 thousand for the year ended December 31, 2019, 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, 2020 and 2019, the other comprehensive income would have decreased by NT\$73,464 thousand and NT\$77,156 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, 2020 and 2019, the Company's ten largest customers accounted for 67% and 83% of accounts receivable, respectively. The Company considers the concentration of credit risk for the remaining accounts receivable not material.

Financial credit risk

The Company mitigates its financial credit risk by selecting counterparties with investment-grade credit ratings and by limiting the exposure to any individual counterparty. The Company regularly monitors and reviews the limit applied to counterparties and adjusts the limit according to market conditions and the credit standing of the counterparties.

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 equivalent.

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
<u>December 31, 2020</u>					
<u>Non-derivative financial liabilities</u>					
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)	1,539,173	2,864,146	2,763,636	13,977,371	21,144,326
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	53,157	107,328	151,745	-	312,230
	<u>437,363,194</u>	<u>28,794,318</u>	<u>33,050,301</u>	<u>162,276,730</u>	<u>661,484,543</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	144,697,981	-	-	-	144,697,981
Inflows	(148,236,932)	-	-	-	(148,236,932)
	<u>(3,538,951)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(3,538,951)</u>
	<u>\$ 433,824,243</u>	<u>\$ 28,794,318</u>	<u>\$ 33,050,301</u>	<u>\$ 162,276,730</u>	<u>\$ 657,945,592</u>

	Less Than 1 Year	1-3 Years	3-5 Years	More Than 5 Years	Total
<u>December 31, 2019</u>					
<u>Non-derivative financial liabilities</u>					
Short-term loans	\$ 148,550,641	\$ -	\$ -	\$ -	\$ 148,550,641
Accounts payable (including related parties)	41,745,770	-	-	-	41,745,770
Payables to contractors and equipment suppliers	139,754,491	-	-	-	139,754,491
Accrued expenses and other current liabilities	35,651,856	-	-	-	35,651,856
Bonds payable	32,338,853	7,777,715	18,203,601	-	58,320,169
Lease liabilities (including those classified under accrued expenses and other current liabilities)	1,976,891	2,170,171	2,063,855	9,981,523	16,192,440
Guarantee deposits (including those classified under accrued expenses and other current liabilities)	<u>1,520,306</u>	<u>114,945</u>	<u>55,501</u>	<u>-</u>	<u>1,690,752</u>
	<u>401,538,808</u>	<u>10,062,831</u>	<u>20,322,957</u>	<u>9,981,523</u>	<u>441,906,119</u>
<u>Derivative financial instruments</u>					
Forward exchange contracts					
Outflows	125,580,851	-	-	-	125,580,851
Inflows	<u>(125,114,784)</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>(125,114,784)</u>
	466,067	-	-	-	466,067
	<u>\$ 402,004,875</u>	<u>\$ 10,062,831</u>	<u>\$ 20,322,957</u>	<u>\$ 9,981,523</u>	<u>\$ 442,372,186</u>

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
<u>December 31, 2020</u>					
Lease liabilities	<u>\$ 6,498,231</u>	<u>\$ 5,082,504</u>	<u>\$ 2,242,373</u>	<u>\$ 154,263</u>	<u>\$ 13,977,371</u>
<u>December 31, 2019</u>					
Lease liabilities	<u>\$ 4,679,991</u>	<u>\$ 3,626,190</u>	<u>\$ 1,600,962</u>	<u>\$ 74,380</u>	<u>\$ 9,981,523</u>

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, 2020		
	Level 2	Level 3	Total
<u>Financial assets at FVTPL</u>			
Mandatorily measured at FVTPL			
Forward exchange contracts	\$ 2,125,825	\$ -	\$ 2,125,825
<u>Financial assets at FVTOCI</u>			
Investments in equity instruments			
Non-publicly traded equity investments	\$ -	\$ 834,830	\$ 834,830
Notes and accounts receivable, net	2,955,301	-	2,955,301
	<u>\$ 2,955,301</u>	<u>\$ 834,830</u>	<u>\$ 3,790,131</u>
<u>Financial liabilities at FVTPL</u>			
Held for trading			
Forward exchange contracts	\$ 93,153	\$ -	\$ 93,153
December 31, 2019			
<u>Financial assets at FVTPL</u>			
Mandatorily measured at FVTPL			
Forward exchange contracts	\$ 27,481	\$ -	\$ 27,481
<u>Financial assets at FVTOCI</u>			
Investments in equity instruments			
Non-publicly traded equity investments	\$ -	\$ 877,110	\$ 877,110
Notes and accounts receivable, net	3,255,865	-	3,255,865
	<u>\$ 3,255,865</u>	<u>\$ 877,110</u>	<u>\$ 4,132,975</u>
<u>Hedging financial assets</u>			
Cash flow hedges			
Forward exchange contracts	\$ 3,504	\$ -	\$ 3,504
<u>Financial liabilities at FVTPL</u>			
Held for trading			
Forward exchange contracts	\$ 982,302	\$ -	\$ 982,302
<u>Hedging financial liabilities</u>			
Cash flow hedges			
Forward exchange contracts	\$ 1,798	\$ -	\$ 1,798

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, 2020 and 2019 were as follows:

	Years Ended December 31	
	2020	2019
Balance, beginning of year	\$ 877,110	\$ 963,610
Recognized in other comprehensive income	(41,995)	(85,393)
Disposals and proceeds from return of capital of investments	<u>(285)</u>	<u>(1,107)</u>
Balance, end of year	<u>\$ 834,830</u>	<u>\$ 877,110</u>

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 measure at fair value:

	December 31, 2020	
	Carrying Amount	Level 2 Fair Value
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	<u>\$ 173,050,745</u>	<u>\$ 173,972,033</u>

	<u>December 31, 2019</u>	
	<u>Carrying Amount</u>	<u>Level 2 Fair Value</u>
<u>Financial liabilities</u>		
Financial liabilities at amortized costs		
Bonds payable	\$ 56,900,000	\$ 57,739,115

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

<u>Related Party Name</u>	<u>Related Party Categories</u>
TSMC Global	Subsidiaries
TSMC China	Subsidiaries
TSMC Nanjing	Subsidiaries
VisEra Tech	Subsidiaries
TSMC Arizona	Subsidiaries
TSMC North America	Subsidiaries
TSMC Europe	Subsidiaries
TSMC Japan	Subsidiaries
TSMC Korea	Subsidiaries
TSMC JDC	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

		<u>Years Ended December 31</u>	
		<u>2020</u>	<u>2019</u>
<u>Item</u>	<u>Related Party Name/Categories</u>		
Net revenue from sale of goods	TSMC North America	\$ 824,139,751	\$ 636,441,507
	Associates	5,656,748	4,052,853
	Other subsidiaries	<u>85,147</u>	<u>149,560</u>
		<u>\$ 829,881,646</u>	<u>\$ 640,643,920</u>

(Continued)

		Years Ended December 31	
		2020	2019
Net revenue from royalties	Subsidiaries	\$ 214,352	\$ 64,710
	Associates	<u>195,111</u>	<u>183,583</u>
		<u>\$ 409,463</u>	<u>\$ 248,293</u>
c. Purchases		(Concluded)	

		Years Ended December 31	
		2020	2019
<u>Related Party Categories</u>			
Subsidiaries		\$ 44,920,702	\$ 40,419,311
	Associates	<u>7,605,080</u>	<u>6,301,417</u>
		<u>\$ 52,525,782</u>	<u>\$ 46,720,728</u>

d. Receivables from related parties

		December 31, 2020	December 31, 2019
<u>Item</u>	<u>Related Party Name/Categories</u>		
Receivables from related parties	TSMC North America	\$ 101,467,381	\$ 81,732,281
	Associates	313,064	458,292
	Other subsidiaries	<u>729</u>	<u>3,928</u>
		<u>\$ 101,781,174</u>	<u>\$ 82,194,501</u>
Other receivables from related parties	TSMC North America	\$ 1,390,902	\$ 802,726
	TSMC Nanjing	203,209	101,559
	Other subsidiaries	71,058	13,388
	Associates	<u>49,165</u>	<u>50,450</u>
		<u>\$ 1,714,334</u>	<u>\$ 968,123</u>

e. Payables to related parties

		December 31, 2020	December 31, 2019
<u>Item</u>	<u>Related Party Name/Categories</u>		
Payables to related parties	TSMC Nanjing	\$ 1,889,906	\$ 1,266,002
	TSMC China	1,643,070	1,538,971
	Xintec	1,358,624	736,747
	WaferTech	697,756	1,097,625
	Other subsidiaries	679,227	379,250
	Other associates	749,040	683,040
	Other related parties	<u>-</u>	<u>15,000</u>
		<u>\$ 7,017,623</u>	<u>\$ 5,716,635</u>

f. Accrued expenses and other current liabilities

		December 31, 2020	December 31, 2019
<u>Item</u>	<u>Related Party Name/Categories</u>		
Accrued expenses and other current liabilities	TSMC North America Other subsidiaries	\$ 317,011 <u>1,643</u>	\$ - <u>2,722</u>
		<u>\$ 318,654</u>	<u>\$ 2,722</u>

g. Acquisition of property, plant and equipment

	Acquisition Price	
	Years Ended December 31	
<u>Related Party Categories</u>	2020	2019
TSMC China	<u>\$ 126,162</u>	<u>\$ -</u>

h. Disposal of property, plant and equipment

	Proceeds	
	Years Ended December 31	
<u>Related Party Name/Categories</u>	2020	2019
TSMC Nanjing	\$ 527,134	\$ 1,096,516
Other subsidiaries	<u>6,115</u>	<u>44,095</u>
	<u>\$ 533,249</u>	<u>\$ 1,140,611</u>

	Gains	
	Years Ended December 31	
<u>Related Party Name/Categories</u>	2020	2019
TSMC Nanjing	\$ 31,494	\$ 332,955
Other subsidiaries	<u>49,844</u>	<u>67,151</u>
	<u>\$ 81,338</u>	<u>\$ 400,106</u>

	Deferred Gains (Losses) from Disposal of Property, Plant and Equipment	
	December 31, 2020	December 31, 2019
<u>Related Party Name/Categories</u>		
TSMC Nanjing	\$ 4,221	\$ (30,731)
Other subsidiaries	<u>86,186</u>	<u>129,915</u>
	<u>\$ 90,407</u>	<u>\$ 99,184</u>

i. Others

<u>Item</u>	<u>Related Party Name/Categories</u>	<u>Years Ended December 31</u>	
		<u>2020</u>	<u>2019</u>
Manufacturing expenses	Associates	\$ 5,425,878	\$ 2,816,089
	Subsidiaries	<u>29,700</u>	<u>35,825</u>
		<u>\$ 5,455,578</u>	<u>\$ 2,851,914</u>
Research and development expenses	Subsidiaries	\$ 3,409,037	\$ 2,821,204
	Associates	<u>256,496</u>	<u>163,425</u>
		<u>\$ 3,665,533</u>	<u>\$ 2,984,629</u>
Marketing expenses - commission	TSMC Europe	\$ 735,295	\$ 439,147
	Other subsidiaries	<u>474,553</u>	<u>419,920</u>
		<u>\$ 1,209,848</u>	<u>\$ 859,067</u>
General and administrative expenses	Other related parties	\$ 120,000	\$ 120,000
	Subsidiaries	<u>3,569</u>	<u>3,423</u>
		<u>\$ 123,569</u>	<u>\$ 123,423</u>

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.

i. Compensation of key management personnel

The compensation to directors and other key management personnel were as follows:

	<u>Years Ended December 31</u>	
	<u>2020</u>	<u>2019</u>
Short-term employee benefits	\$ 2,567,833	\$ 1,822,806
Post-employment benefits	<u>1,951</u>	<u>2,330</u>
	<u>\$ 2,569,784</u>	<u>\$ 1,825,136</u>

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, 2020, 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, 2020.
- c. On September 28, 2017, the Company was contacted by the European Commission (the "Commission"), which asked us for information and documents concerning alleged anti-competitive practices in relation to semiconductor sales. We cooperated continuously with the Commission to provide the requested information and documents. The Commission subsequently decided to close the investigation in May 2020.
- d. The Company entered into long-term purchase agreements of materials and supplies with multiple suppliers. The relative minimum purchase quantity and price are specified in the agreements.
- e. The Company entered into a long-term purchase agreement of equipment. The relative purchase quantity and price are specified in the agreement.
- f. The Company entered into long-term energy purchase agreements with multiple suppliers. The relative purchase period, quantity and price are specified in the agreements.
- g. As of December 31, 2020, the Company provided endorsement guarantees of NT\$2,338,044 thousand to its subsidiary, TSMC North America, in respect of providing endorsement guarantees for office leasing contract.
- h. As of December 31, 2020, the Company provided a NT\$84,291,000 thousand endorsement guarantee for its subsidiary, TSMC Global, in respect of its issuance of US dollar-denominated senior unsecured corporate bonds.

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)
<u>December 31, 2020</u>			
<u>Financial assets</u>			
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
<u>Financial liabilities</u>			
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
<u>December 31, 2019</u>			
<u>Financial assets</u>			
Monetary items			
USD	\$ 4,515,031	29.988	\$ 135,396,753
EUR	2,867	33.653	96,495
JPY	71,980,350	0.2751	19,801,794
<u>Financial liabilities</u>			
Monetary items			
USD	5,874,701	29.988	176,170,537
EUR	2,550,377	33.653	85,827,831
JPY	100,338,589	0.2751	27,603,146

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, 2020 and 2019, 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. SIGNIFICANT OPERATION LOSSES

On January 19, 2019, the Company discovered a wafer contamination issue in a fab in Taiwan caused by a batch of unqualified photoresist materials. After investigation, the Company immediately stopped using the unqualified materials. An estimated loss of NT\$3,400,000 thousand related to this event was recognized in cost of revenue for the three months ended March 31, 2019.

34. 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.

35. 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, 2020
(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	\$ 38,028,092 (RMB 6,000,000) & (US\$ 436,000)	\$ 34,752,490 (RMB 5,800,000) & (US\$ 350,000)	\$ 20,622,240 (RMB 4,800,000)	1.50%	The need for long-term financing	-	Operating capital	\$ -	-	\$ 64,492,719	\$ 64,492,719	
2	TSMC Global	TSMC	Other receivables from related parties	Yes	\$ 87,100,700 (US\$ 3,100,000)	\$ 87,100,700 (US\$ 3,100,000)	\$ 87,100,700 (US\$ 3,100,000)	0.00%	The need for short-term financing	-	Operating capital	-	-	\$ 382,229,039	\$ 382,229,039	

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 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, 2020
(Amounts in Thousands of New Taiwan Dollars, Unless Specified Otherwise)

No.	Endorsement/ Guarantee Provider	Guaranteed Party		Limits on Guarantee Amount Provided to Each Party (Notes 1 and 2)	Maximum Balance for the Period for Foreign Currencies in Thousands (Note 3)	Ending Balance (Foreign Currencies in Thousands) (Note 3)	Amount Actually Drawn (US\$ in Thousands)	Amount of Guarantee Collateralized by Properties	Ratio of Accumulated Endorsement/ Guarantee to Net Equity per Latest Financial Statements	Maximum Endorsement/ Guarantee Amount Allowable (Note 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 TSMC Global	Subsidiary Subsidiary	\$ 462,414,314 462,414,314	\$ 2,338,044 (US\$ 83,213) 84,291,000 (US\$ 3,000,000)	\$ 2,338,044 (US\$ 83,213) 84,291,000 (US\$ 3,000,000)	\$ 2,338,044 (US\$ 83,213) 84,291,000 (US\$ 3,000,000)	\$ - - -	0.13% 4.56% 0.02%	\$ 462,414,314 462,414,314 184,965,726	Yes Yes No	No No No	No No No
1	TSMC Japan	TSMC JDC	The same parent company	184,965,726	360,228 (JPY 1,320,000)	360,228 (JPY 1,320,000)	360,228 (JPY 1,320,000)	-	-	184,965,726	No	No	No

Note 1: The total amount of the endorsement/guarantee provided by TSMC to TSMC North America and TSMC Global 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 ten percent (10%) of TSMC'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, 2020

(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, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC	Non-publicly traded equity investments United Industrial Gases Co., Ltd.	-	Financial assets at fair value through other comprehensive income	21,230	\$ 427,665	10	\$ 427,665
	Shin-Etsu Handotai Taiwan Co., Ltd.	-	"	10,500	313,992	7	313,992
	Global Investment Holding Co., Ltd.	-	"	10,442	87,059	6	87,059
	W.K. Technology Fund IV	-	"	806	5,944	2	5,944
	Horizon Ventures Fund Crimson Asia Capital	-	"	-	170	12	170
TSMC Partners	Non-publicly traded equity investments Shanghai Walden Venture Capital Enterprise	-	Financial assets at fair value through other comprehensive income	-	US\$ 22,944	6	US\$ 22,944
	China Walden Venture Investments II, L.P.	-	"	-	US\$ 12,551	9	US\$ 12,551
	China Walden Venture Investments III, L.P.	-	"	-	US\$ 4,978	4	US\$ 4,978
	Inpria Corporation	-	"	1,778	US\$ 3,600	4	US\$ 3,600
	Telia Innovations Mcube Inc.	-	"	10,440 6,333	- -	25 10	- -
TSMC Global	Corporate bond Bank of America Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 59,845	N/A	US\$ 59,845
	Citigroup Inc Morgan Stanley	-	"	-	US\$ 44,484 US\$ 43,256	N/A N/A	US\$ 44,484 US\$ 43,256
	Goldman Sachs Group Inc/The Wells Fargo & Co	-	"	-	US\$ 40,089 US\$ 36,031	N/A N/A	US\$ 40,089 US\$ 36,031
	Mitsubishi UFJ Financial Group Inc JPMorgan Chase & Co	-	"	-	US\$ 34,946 US\$ 33,739	N/A N/A	US\$ 34,946 US\$ 33,739
	AbbVie Inc Sumitomo Mitsui Financial Group Inc	-	"	-	US\$ 33,716 US\$ 27,424	N/A N/A	US\$ 33,716 US\$ 27,424
	Metropolitan Life Global Funding I Lloyds Banking Group PLC	-	"	-	US\$ 21,597 US\$ 21,490	N/A N/A	US\$ 21,597 US\$ 21,490
	Bristol-Myers Squibb Co Mizuho Financial Group Inc	-	"	-	US\$ 21,090 US\$ 20,795	N/A N/A	US\$ 21,090 US\$ 20,795
	Toyota Motor Credit Corp NatWest Markets PLC	-	"	-	US\$ 20,448 US\$ 19,179	N/A N/A	US\$ 20,448 US\$ 19,179
	Athene Global Funding Credit Suisse AG/New York NY	-	"	-	US\$ 18,421 US\$ 17,442	N/A N/A	US\$ 18,421 US\$ 17,442
	Royal Bank of Canada HSBC Holdings PLC	-	"	-	US\$ 16,267 US\$ 16,113	N/A N/A	US\$ 16,267 US\$ 16,113
	Hyundai Capital America Macquarie Bank Ltd	-	"	-	US\$ 15,983 US\$ 15,912	N/A N/A	US\$ 15,983 US\$ 15,912
	Nordea Bank Abp Apple Inc	-	"	-	US\$ 15,907 US\$ 15,762	N/A N/A	US\$ 15,907 US\$ 15,762
	Santander UK PLC BP Capital Markets America Inc	-	"	-	US\$ 15,704 US\$ 15,621	N/A N/A	US\$ 15,704 US\$ 15,621

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Toronto-Dominion Bank/The	-	Financial assets at fair value through other comprehensive income	-	US\$ 15,527	N/A	US\$ 15,527	
	Volkswagen Group of America Finance LLC	-	"	-	US\$ 15,417	N/A	US\$ 15,417	
	Comcast Corp	-	"	-	US\$ 14,947	N/A	US\$ 14,947	
	BNP Paribas SA	-	"	-	US\$ 14,590	N/A	US\$ 14,590	
	National Securities Clearing Corp	-	"	-	US\$ 14,129	N/A	US\$ 14,129	
	Principal Life Global Funding II	-	"	-	US\$ 13,580	N/A	US\$ 13,580	
	Roper Technologies Inc	-	"	-	US\$ 13,249	N/A	US\$ 13,249	
	AT&T Inc	-	"	-	US\$ 13,180	N/A	US\$ 13,180	
	Banco Santander SA	-	"	-	US\$ 13,146	N/A	US\$ 13,146	
	Banque Federative du Credit Mutuel SA	-	"	-	US\$ 13,019	N/A	US\$ 13,019	
	Nationwide Building Society	-	"	-	US\$ 12,913	N/A	US\$ 12,913	
	Chevron Corp	-	"	-	US\$ 12,771	N/A	US\$ 12,771	
	Guardian Life Global Funding	-	"	-	US\$ 12,187	N/A	US\$ 12,187	
	Bank of Nova Scotia/The	-	"	-	US\$ 12,144	N/A	US\$ 12,144	
	Equifax Inc	-	"	-	US\$ 12,015	N/A	US\$ 12,015	
	BPCF SA	-	"	-	US\$ 11,978	N/A	US\$ 11,978	
	UBS Group Funding Switzerland AG	-	"	-	US\$ 11,758	N/A	US\$ 11,758	
	US Bancorp	-	"	-	US\$ 11,651	N/A	US\$ 11,651	
	Societe Generale SA	-	"	-	US\$ 11,567	N/A	US\$ 11,567	
	American Honda Finance Corp	-	"	-	US\$ 11,354	N/A	US\$ 11,354	
	American International Group Inc	-	"	-	US\$ 11,011	N/A	US\$ 11,011	
	Amazon.com Inc	-	"	-	US\$ 10,846	N/A	US\$ 10,846	
	TIJX Cos Inc/The	-	"	-	US\$ 10,563	N/A	US\$ 10,563	
	Verizon Communications Inc	-	"	-	US\$ 10,558	N/A	US\$ 10,558	
	Jackson National Life Global Funding	-	"	-	US\$ 10,434	N/A	US\$ 10,434	
	Equinor ASA	-	"	-	US\$ 10,372	N/A	US\$ 10,372	
	Canadian Imperial Bank of Commerce	-	"	-	US\$ 10,297	N/A	US\$ 10,297	
	DTE Energy Co	-	"	-	US\$ 10,173	N/A	US\$ 10,173	
	BMW US Capital LLC	-	"	-	US\$ 10,125	N/A	US\$ 10,125	
	Shire Acquisitions Investments Ireland DAC	-	"	-	US\$ 9,893	N/A	US\$ 9,893	
	NextEra Energy Capital Holdings Inc	-	"	-	US\$ 9,527	N/A	US\$ 9,527	
	Cox Communications Inc	-	"	-	US\$ 9,526	N/A	US\$ 9,526	
	Sumitomo Mitsui Trust Bank Ltd	-	"	-	US\$ 9,446	N/A	US\$ 9,446	
	Credit Agricole SA/London	-	"	-	US\$ 9,250	N/A	US\$ 9,250	
	NIKE Inc	-	"	-	US\$ 9,232	N/A	US\$ 9,232	
	Protective Life Global Funding	-	"	-	US\$ 9,137	N/A	US\$ 9,137	
	New York Life Global Funding	-	"	-	US\$ 9,057	N/A	US\$ 9,057	
	Bank of Montreal	-	"	-	US\$ 9,002	N/A	US\$ 9,002	
	Svenska Handelsbanken AB	-	"	-	US\$ 8,963	N/A	US\$ 8,963	
	Truist Bank	-	"	-	US\$ 8,775	N/A	US\$ 8,775	
	Inuit Inc	-	"	-	US\$ 8,524	N/A	US\$ 8,524	
	Barclays PLC	-	"	-	US\$ 8,492	N/A	US\$ 8,492	
	Inter-American Development Bank	-	"	-	US\$ 8,211	N/A	US\$ 8,211	
	Suncorp-Metway Ltd	-	"	-	US\$ 8,134	N/A	US\$ 8,134	
	AIG Global Funding	-	"	-	US\$ 8,098	N/A	US\$ 8,098	
	Fiserv Inc	-	"	-	US\$ 8,079	N/A	US\$ 8,079	
	Oracle Corp	-	"	-	US\$ 7,822	N/A	US\$ 7,822	
	Credit Suisse Group AG	-	"	-	US\$ 7,804	N/A	US\$ 7,804	
	Exxon Mobil Corp	-	"	-	US\$ 7,576	N/A	US\$ 7,576	
	Great-West Lifeco US Finance 2020 LP	-	"	-	US\$ 7,455	N/A	US\$ 7,455	
	Skandinaviska Enskilda Banken AB	-	"	-	US\$ 7,409	N/A	US\$ 7,409	
	AstraZeneca PLC	-	"	-	US\$ 7,333	N/A	US\$ 7,333	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Prudential Funding LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 7,322	N/A	US\$ 7,322
	Huntington Bancshares Inc/OH	-	"	-	US\$ 7,249	N/A	US\$ 7,249
	Tencent Holdings Ltd	-	"	-	US\$ 7,024	N/A	US\$ 7,024
	Daimler Finance North America LLC	-	"	-	US\$ 6,772	N/A	US\$ 6,772
	Secentre Group Trust 1 / Scenire Group Trust 2	-	"	-	US\$ 6,611	N/A	US\$ 6,611
	Capital One Financial Corp	-	"	-	US\$ 6,498	N/A	US\$ 6,498
	ING Groep NV	-	"	-	US\$ 6,484	N/A	US\$ 6,484
	Cigna Corp	-	"	-	US\$ 6,445	N/A	US\$ 6,445
	General Electric Co	-	"	-	US\$ 6,267	N/A	US\$ 6,267
	UnitedHealth Group Inc	-	"	-	US\$ 6,255	N/A	US\$ 6,255
	Bank of New York Mellon Corp/The	-	"	-	US\$ 6,241	N/A	US\$ 6,241
	WPPP Finance 2010	-	"	-	US\$ 6,236	N/A	US\$ 6,236
	Standard Chartered PLC	-	"	-	US\$ 6,231	N/A	US\$ 6,231
	Macquarie Group Ltd	-	"	-	US\$ 6,193	N/A	US\$ 6,193
	Cargill Inc	-	"	-	US\$ 6,175	N/A	US\$ 6,175
	UBS Group AG	-	"	-	US\$ 6,171	N/A	US\$ 6,171
	CVS Health Corp	-	"	-	US\$ 5,981	N/A	US\$ 5,981
	Analog Devices Inc	-	"	-	US\$ 5,975	N/A	US\$ 5,975
	Alabama Power Co	-	"	-	US\$ 5,920	N/A	US\$ 5,920
	Capital One NA	-	"	-	US\$ 5,919	N/A	US\$ 5,919
	Intercontinental Exchange Inc	-	"	-	US\$ 5,873	N/A	US\$ 5,873
	John Deere Capital Corp	-	"	-	US\$ 5,824	N/A	US\$ 5,824
	Shell International Finance BV	-	"	-	US\$ 5,794	N/A	US\$ 5,794
	American Express Co	-	"	-	US\$ 5,761	N/A	US\$ 5,761
	BAT Capital Corp	-	"	-	US\$ 5,574	N/A	US\$ 5,574
	Intel Corp	-	"	-	US\$ 5,547	N/A	US\$ 5,547
	Thermo Fisher Scientific Inc	-	"	-	US\$ 5,516	N/A	US\$ 5,516
	Microsoft Corp	-	"	-	US\$ 5,489	N/A	US\$ 5,489
	Fox Corp	-	"	-	US\$ 5,483	N/A	US\$ 5,483
	Charles Schwab Corp/The	-	"	-	US\$ 5,465	N/A	US\$ 5,465
	Georgia-Pacific LLC	-	"	-	US\$ 5,422	N/A	US\$ 5,422
	Dominion Energy Gas Holdings LLC	-	"	-	US\$ 5,403	N/A	US\$ 5,403
	SMBC Aviation Capital Finance DAC	-	"	-	US\$ 5,399	N/A	US\$ 5,399
	Fifth Third Bancorp	-	"	-	US\$ 5,399	N/A	US\$ 5,399
	BB&T Corp	-	"	-	US\$ 5,381	N/A	US\$ 5,381
	Sonop International Holdings Ltd	-	"	-	US\$ 5,344	N/A	US\$ 5,344
	Merck & Co Inc	-	"	-	US\$ 5,302	N/A	US\$ 5,302
	Sempra Energy	-	"	-	US\$ 5,257	N/A	US\$ 5,257
	Federation des Caisses Desjardins du Quebec	-	"	-	US\$ 5,246	N/A	US\$ 5,246
	National Bank of Canada	-	"	-	US\$ 5,214	N/A	US\$ 5,214
	Tyson Foods Inc	-	"	-	US\$ 5,073	N/A	US\$ 5,073
	Five Corners Funding Trust	-	"	-	US\$ 4,991	N/A	US\$ 4,991
	Enel Finance International NV	-	"	-	US\$ 4,988	N/A	US\$ 4,988
	Pacific Life Global Funding II	-	"	-	US\$ 4,961	N/A	US\$ 4,961
	Danske Bank A/S	-	"	-	US\$ 4,897	N/A	US\$ 4,897
	Nomura Holdings Inc	-	"	-	US\$ 4,875	N/A	US\$ 4,875
	Sprint Spectrum Co LLC / Sprint Spectrum Co II LLC / Sprint Spectrum Co III LLC	-	"	-	US\$ 4,856	N/A	US\$ 4,856
	Johnson & Johnson	-	"	-	US\$ 4,802	N/A	US\$ 4,802
	Keurig Dr Pepper Inc	-	"	-	US\$ 4,796	N/A	US\$ 4,796
	DNB Bank ASA	-	"	-	US\$ 4,726	N/A	US\$ 4,726
	Moody's Corp	-	"	-	US\$ 4,695	N/A	US\$ 4,695

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Eversource Energy	-	Financial assets at fair value through other comprehensive income	-	US\$ 4,665	N/A	US\$ 4,665	
	Energy Corp	-	"	-	US\$ 4,665	N/A	US\$ 4,665	
	Florida Power & Light Co	-	"	-	US\$ 4,569	N/A	US\$ 4,569	
	Gilead Sciences Inc	-	"	-	US\$ 4,496	N/A	US\$ 4,496	
	Barclays Bank PLC	-	"	-	US\$ 4,481	N/A	US\$ 4,481	
	Altria Group Inc	-	"	-	US\$ 4,450	N/A	US\$ 4,450	
	NiSource Inc	-	"	-	US\$ 4,440	N/A	US\$ 4,440	
	MPLX LP	-	"	-	US\$ 4,412	N/A	US\$ 4,412	
	PNC Bank NA	-	"	-	US\$ 4,335	N/A	US\$ 4,335	
	ERAC USA Finance LLC	-	"	-	US\$ 4,298	N/A	US\$ 4,298	
	Alimentation Couche-Tard Inc	-	"	-	US\$ 4,295	N/A	US\$ 4,295	
	Exelon Corp	-	"	-	US\$ 4,291	N/A	US\$ 4,291	
	Reliance Standard Life Global Funding II	-	"	-	US\$ 4,232	N/A	US\$ 4,232	
	National Australia Bank Ltd/New York	-	"	-	US\$ 4,208	N/A	US\$ 4,208	
	European Bank for Reconstruction & Development	-	"	-	US\$ 4,192	N/A	US\$ 4,192	
	Ameriprise Financial Inc	-	"	-	US\$ 4,147	N/A	US\$ 4,147	
	Bayer US Finance II LLC	-	"	-	US\$ 4,137	N/A	US\$ 4,137	
	Pricon Global Funding I	-	"	-	US\$ 4,122	N/A	US\$ 4,122	
	American Express Credit Corp	-	"	-	US\$ 4,103	N/A	US\$ 4,103	
	BorgWarner Inc	-	"	-	US\$ 4,053	N/A	US\$ 4,053	
	Phillips 66	-	"	-	US\$ 4,044	N/A	US\$ 4,044	
	Banco Bilbao Vizcaya Argentaria SA	-	"	-	US\$ 4,027	N/A	US\$ 4,027	
	Welltower Inc	-	"	-	US\$ 3,986	N/A	US\$ 3,986	
	BOC Aviation Ltd	-	"	-	US\$ 3,976	N/A	US\$ 3,976	
	VF Corp	-	"	-	US\$ 3,972	N/A	US\$ 3,972	
	Compass Bank	-	"	-	US\$ 3,950	N/A	US\$ 3,950	
	KeyBank NA/Cleveland OH	-	"	-	US\$ 3,920	N/A	US\$ 3,920	
	Vodafone Group PLC	-	"	-	US\$ 3,916	N/A	US\$ 3,916	
	Laboratory Corp of America Holdings	-	"	-	US\$ 3,888	N/A	US\$ 3,888	
	BG Energy Capital PLC	-	"	-	US\$ 3,853	N/A	US\$ 3,853	
	Reckitt Benckiser Treasury Services PLC	-	"	-	US\$ 3,805	N/A	US\$ 3,805	
	GE Capital Funding LLC	-	"	-	US\$ 3,761	N/A	US\$ 3,761	
	Monongahela Power Co	-	"	-	US\$ 3,737	N/A	US\$ 3,737	
	Cooperative Rabobank U/A	-	"	-	US\$ 3,698	N/A	US\$ 3,698	
	Verisk Analytics Inc	-	"	-	US\$ 3,677	N/A	US\$ 3,677	
	Diageo Capital PLC	-	"	-	US\$ 3,667	N/A	US\$ 3,667	
	Ameren Corp	-	"	-	US\$ 3,658	N/A	US\$ 3,658	
	UBS AG/London	-	"	-	US\$ 3,588	N/A	US\$ 3,588	
	Dominion Energy Inc	-	"	-	US\$ 3,586	N/A	US\$ 3,586	
	Pfizer Inc	-	"	-	US\$ 3,521	N/A	US\$ 3,521	
	AutoZone Inc	-	"	-	US\$ 3,456	N/A	US\$ 3,456	
	HSBC Bank Canada	-	"	-	US\$ 3,440	N/A	US\$ 3,440	
	Hewlett Packard Enterprise Co	-	"	-	US\$ 3,439	N/A	US\$ 3,439	
	Unilever Capital Corp	-	"	-	US\$ 3,394	N/A	US\$ 3,394	
	Swedbank AB	-	"	-	US\$ 3,388	N/A	US\$ 3,388	
	MassMutual Global Funding II	-	"	-	US\$ 3,369	N/A	US\$ 3,369	
	CNA Financial Corp	-	"	-	US\$ 3,316	N/A	US\$ 3,316	
	ONE Gas Inc	-	"	-	US\$ 3,310	N/A	US\$ 3,310	
	Texas Instruments Inc	-	"	-	US\$ 3,292	N/A	US\$ 3,292	
	Avangrid Inc	-	"	-	US\$ 3,262	N/A	US\$ 3,262	
	Ralph Lauren Corp	-	"	-	US\$ 3,207	N/A	US\$ 3,207	
	Oncor Electric Delivery Co LLC	-	"	-	US\$ 3,201	N/A	US\$ 3,201	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Royal Bank of Scotland Group PLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 3,199	N/A	US\$ 3,199
	Novartis Capital Corp	-	"	-	US\$ 3,199	N/A	US\$ 3,199
	Baidu Inc	-	"	-	US\$ 3,184	N/A	US\$ 3,184
	Raytheon Technologies Corp	-	"	-	US\$ 3,130	N/A	US\$ 3,130
	Valero Energy Corp	-	"	-	US\$ 3,109	N/A	US\$ 3,109
	Stryker Corp	-	"	-	US\$ 3,081	N/A	US\$ 3,081
	Walt Disney Co/The	-	"	-	US\$ 3,058	N/A	US\$ 3,058
	Zions Bancorp NA	-	"	-	US\$ 3,057	N/A	US\$ 3,057
	HCP Inc	-	"	-	US\$ 2,978	N/A	US\$ 2,978
	Penske Truck Leasing Co Lp / PTL Finance Corp	-	"	-	US\$ 2,967	N/A	US\$ 2,967
	American Electric Power Co Inc	-	"	-	US\$ 2,948	N/A	US\$ 2,948
	Xcel Energy Inc	-	"	-	US\$ 2,948	N/A	US\$ 2,948
	Ventas Realty LP	-	"	-	US\$ 2,942	N/A	US\$ 2,942
	Philip Morris International Inc	-	"	-	US\$ 2,933	N/A	US\$ 2,933
	Air Products and Chemicals Inc	-	"	-	US\$ 2,909	N/A	US\$ 2,909
	Berkshire Hathaway Energy Co	-	"	-	US\$ 2,877	N/A	US\$ 2,877
	Credit Suisse Group Funding Guernsey Ltd	-	"	-	US\$ 2,867	N/A	US\$ 2,867
	Equitable Financial Life Global Funding	-	"	-	US\$ 2,849	N/A	US\$ 2,849
	Ross Stores Inc	-	"	-	US\$ 2,837	N/A	US\$ 2,837
	Nuveen Finance LLC	-	"	-	US\$ 2,817	N/A	US\$ 2,817
	Ryder System Inc	-	"	-	US\$ 2,800	N/A	US\$ 2,800
	AvalonBay Communities Inc	-	"	-	US\$ 2,798	N/A	US\$ 2,798
	Quest Diagnostics Inc	-	"	-	US\$ 2,798	N/A	US\$ 2,798
	Kimco Realty Corp	-	"	-	US\$ 2,726	N/A	US\$ 2,726
	CMS Energy Corp	-	"	-	US\$ 2,717	N/A	US\$ 2,717
	Roche Holdings Inc	-	"	-	US\$ 2,702	N/A	US\$ 2,702
	Magellan Midstream Partners LP	-	"	-	US\$ 2,700	N/A	US\$ 2,700
	Nutrien Ltd	-	"	-	US\$ 2,687	N/A	US\$ 2,687
	PNC Financial Services Group Inc/The	-	"	-	US\$ 2,683	N/A	US\$ 2,683
	Pinnacle West Capital Corp	-	"	-	US\$ 2,669	N/A	US\$ 2,669
	Aetna Inc	-	"	-	US\$ 2,592	N/A	US\$ 2,592
	Empower Finance 2020 LP	-	"	-	US\$ 2,562	N/A	US\$ 2,562
	Nestle Holdings Inc	-	"	-	US\$ 2,533	N/A	US\$ 2,533
	Reynolds American Inc	-	"	-	US\$ 2,530	N/A	US\$ 2,530
	Berkshire Hathaway Inc	-	"	-	US\$ 2,513	N/A	US\$ 2,513
	Chevron USA Inc	-	"	-	US\$ 2,511	N/A	US\$ 2,511
	Georgia Power Co	-	"	-	US\$ 2,497	N/A	US\$ 2,497
	Northrop Grumman Corp	-	"	-	US\$ 2,491	N/A	US\$ 2,491
	State Street Corp	-	"	-	US\$ 2,487	N/A	US\$ 2,487
	SunTrust Bank/Atlanta GA	-	"	-	US\$ 2,486	N/A	US\$ 2,486
	Honeywell International Inc	-	"	-	US\$ 2,480	N/A	US\$ 2,480
	Enterprise Products Operating LLC	-	"	-	US\$ 2,470	N/A	US\$ 2,470
	Duke Energy Corp	-	"	-	US\$ 2,428	N/A	US\$ 2,428
	DuPont de Nemours Inc	-	"	-	US\$ 2,427	N/A	US\$ 2,427
	Suncor Energy Inc	-	"	-	US\$ 2,416	N/A	US\$ 2,416
	Union Pacific Corp	-	"	-	US\$ 2,398	N/A	US\$ 2,398
	O'Reilly Automotive Inc	-	"	-	US\$ 2,394	N/A	US\$ 2,394
	Public Service Electric and Gas Co	-	"	-	US\$ 2,321	N/A	US\$ 2,321
	Health Care Service Corp A Mutual Legal Reserve Co	-	"	-	US\$ 2,303	N/A	US\$ 2,303
	Magna International Inc	-	"	-	US\$ 2,291	N/A	US\$ 2,291
	BAT International Finance PLC	-	"	-	US\$ 2,287	N/A	US\$ 2,287
	Caterpillar Financial Services Corp	-	"	-	US\$ 2,284	N/A	US\$ 2,284

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	ITC Holdings Corp	-	Financial assets at fair value through other comprehensive income	-	US\$ 2,263	N/A	US\$ 2,263	
	East Ohio Gas Co/The	-	"	-	US\$ 2,261	N/A	US\$ 2,261	
	QUALCOMM Inc	-	"	-	US\$ 2,253	N/A	US\$ 2,253	
	Citizens Bank NA/Providence RI	-	"	-	US\$ 2,212	N/A	US\$ 2,212	
	Amphenol Corp	-	"	-	US\$ 2,201	N/A	US\$ 2,201	
	Bank of New Zealand	-	"	-	US\$ 2,196	N/A	US\$ 2,196	
	ASB Bank Ltd	-	"	-	US\$ 2,184	N/A	US\$ 2,184	
	Tucson Electric Power Co	-	"	-	US\$ 2,177	N/A	US\$ 2,177	
	Otis Worldwide Corp	-	"	-	US\$ 2,159	N/A	US\$ 2,159	
	WP Carey Inc	-	"	-	US\$ 2,103	N/A	US\$ 2,103	
	CNOOC Finance 2012 Ltd	-	"	-	US\$ 2,072	N/A	US\$ 2,072	
	PayPal Holdings Inc	-	"	-	US\$ 2,068	N/A	US\$ 2,068	
	Shinhan Financial Group Co Ltd	-	"	-	US\$ 2,024	N/A	US\$ 2,024	
	CK Hutchison International 16 Ltd	-	"	-	US\$ 2,016	N/A	US\$ 2,016	
	Regions Financial Corp	-	"	-	US\$ 2,007	N/A	US\$ 2,007	
	Kentucky Utilities Co	-	"	-	US\$ 1,994	N/A	US\$ 1,994	
	NetApp Inc	-	"	-	US\$ 1,982	N/A	US\$ 1,982	
	Sydney Airport Finance Co Pty Ltd	-	"	-	US\$ 1,968	N/A	US\$ 1,968	
	CRH America Inc	-	"	-	US\$ 1,965	N/A	US\$ 1,965	
	Evegy Kansas Central Inc	-	"	-	US\$ 1,937	N/A	US\$ 1,937	
	Burlington Northern Santa Fe LLC	-	"	-	US\$ 1,935	N/A	US\$ 1,935	
	ANZ New Zealand Int'l Ltd/London	-	"	-	US\$ 1,927	N/A	US\$ 1,927	
	Appalachian Power Co	-	"	-	US\$ 1,924	N/A	US\$ 1,924	
	Gulfstream Natural Gas System LLC	-	"	-	US\$ 1,913	N/A	US\$ 1,913	
	Public Service Enterprise Group Inc	-	"	-	US\$ 1,908	N/A	US\$ 1,908	
	Air Lease Corp	-	"	-	US\$ 1,882	N/A	US\$ 1,882	
	Discover Bank	-	"	-	US\$ 1,873	N/A	US\$ 1,873	
	Boston Properties LP	-	"	-	US\$ 1,840	N/A	US\$ 1,840	
	McCormick & Co Inc/MD	-	"	-	US\$ 1,837	N/A	US\$ 1,837	
	Infor Inc	-	"	-	US\$ 1,810	N/A	US\$ 1,810	
	International Business Machines Corp	-	"	-	US\$ 1,761	N/A	US\$ 1,761	
	Anheuser-Busch InBev Worldwide Inc	-	"	-	US\$ 1,759	N/A	US\$ 1,759	
	Emerson Electric Co	-	"	-	US\$ 1,750	N/A	US\$ 1,750	
	MetLife Inc	-	"	-	US\$ 1,681	N/A	US\$ 1,681	
	Duke Energy Florida LLC	-	"	-	US\$ 1,677	N/A	US\$ 1,677	
	Toyota Industries Corp	-	"	-	US\$ 1,672	N/A	US\$ 1,672	
	Exelon Generation Co LLC	-	"	-	US\$ 1,652	N/A	US\$ 1,652	
	Essex Portfolio LP	-	"	-	US\$ 1,650	N/A	US\$ 1,650	
	Midwest Connector Capital Co LLC	-	"	-	US\$ 1,641	N/A	US\$ 1,641	
	Brookfield Finance Inc	-	"	-	US\$ 1,641	N/A	US\$ 1,641	
	Suntory Holdings Ltd	-	"	-	US\$ 1,637	N/A	US\$ 1,637	
	Panasonic Corp	-	"	-	US\$ 1,619	N/A	US\$ 1,619	
	CK Hutchison International 19 Ltd	-	"	-	US\$ 1,603	N/A	US\$ 1,603	
	Marsh & McLennan Cos Inc	-	"	-	US\$ 1,592	N/A	US\$ 1,592	
	Marathon Petroleum Corp	-	"	-	US\$ 1,576	N/A	US\$ 1,576	
	Public Service Electric & Gas Co	-	"	-	US\$ 1,562	N/A	US\$ 1,562	
	AIA Group Ltd	-	"	-	US\$ 1,560	N/A	US\$ 1,560	
	NTT Finance Corp	-	"	-	US\$ 1,540	N/A	US\$ 1,540	
	ABN AMRO Bank NV	-	"	-	US\$ 1,527	N/A	US\$ 1,527	
	Alliant Energy Finance LLC	-	"	-	US\$ 1,526	N/A	US\$ 1,526	
	KEB Hana Bank	-	"	-	US\$ 1,504	N/A	US\$ 1,504	
	Virginia Electric & Power Co	-	"	-	US\$ 1,501	N/A	US\$ 1,501	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	Entergy Louisiana LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,472	N/A	US\$ 1,472
	Daiwa Securities Group Inc	-	"	-	US\$ 1,430	N/A	US\$ 1,430
	Citizens Financial Group Inc	-	"	-	US\$ 1,418	N/A	US\$ 1,418
	Andrew W Mellon Foundation/The	-	"	-	US\$ 1,418	N/A	US\$ 1,418
	Wells Fargo Bank NA	-	"	-	US\$ 1,416	N/A	US\$ 1,416
	CNOOC Curtis Funding No 1 Pty Ltd	-	"	-	US\$ 1,410	N/A	US\$ 1,410
	Siemens Financieringsmaatschappij NV	-	"	-	US\$ 1,410	N/A	US\$ 1,410
	Kilroy Realty LP	-	"	-	US\$ 1,402	N/A	US\$ 1,402
	Entergy Arkansas LLC	-	"	-	US\$ 1,349	N/A	US\$ 1,349
	Ontario Teachers' Cadillac Fairview Properties Trust	-	"	-	US\$ 1,339	N/A	US\$ 1,339
	Federal Realty Investment Trust	-	"	-	US\$ 1,306	N/A	US\$ 1,306
	General Dynamics Corp	-	"	-	US\$ 1,238	N/A	US\$ 1,238
	Santander UK Group Holdings PLC	-	"	-	US\$ 1,237	N/A	US\$ 1,237
	Lincoln National Corp	-	"	-	US\$ 1,227	N/A	US\$ 1,227
	PSEG Power LLC	-	"	-	US\$ 1,208	N/A	US\$ 1,208
	Schlumberger Finance Canada Ltd	-	"	-	US\$ 1,189	N/A	US\$ 1,189
	eBay Inc	-	"	-	US\$ 1,154	N/A	US\$ 1,154
	Cleveland Electric Illuminating Co/The	-	"	-	US\$ 1,149	N/A	US\$ 1,149
	APT Pipelines Ltd	-	"	-	US\$ 1,148	N/A	US\$ 1,148
	Alexandria Real Estate Equities Inc	-	"	-	US\$ 1,112	N/A	US\$ 1,112
	Southern California Edison Co	-	"	-	US\$ 1,105	N/A	US\$ 1,105
	Cooperative Rabobank UA/NY	-	"	-	US\$ 1,102	N/A	US\$ 1,102
	Baltimore Gas & Electric Co	-	"	-	US\$ 1,066	N/A	US\$ 1,066
	Entergy Mississippi LLC	-	"	-	US\$ 1,063	N/A	US\$ 1,063
	BBVA USA	-	"	-	US\$ 1,062	N/A	US\$ 1,062
	DH Europe Finance II Sart	-	"	-	US\$ 1,056	N/A	US\$ 1,056
	Loews Corp	-	"	-	US\$ 1,047	N/A	US\$ 1,047
	USAA Capital Corp	-	"	-	US\$ 1,046	N/A	US\$ 1,046
	Kinder Morgan Inc/DE	-	"	-	US\$ 1,046	N/A	US\$ 1,046
	Kaiser Foundation Hospitals	-	"	-	US\$ 1,039	N/A	US\$ 1,039
	Texas Eastern Transmission LP	-	"	-	US\$ 1,034	N/A	US\$ 1,034
	Simon Property Group LP	-	"	-	US\$ 1,030	N/A	US\$ 1,030
	Mondelez International Holdings Netherlands BV	-	"	-	US\$ 1,024	N/A	US\$ 1,024
	Toyota Motor Finance Netherlands BV	-	"	-	US\$ 1,008	N/A	US\$ 1,008
	MUFG Union Bank NA	-	"	-	US\$ 1,006	N/A	US\$ 1,006
	BHP Billiton Finance USA Ltd	-	"	-	US\$ 964	N/A	US\$ 964
	Southern California Gas Co	-	"	-	US\$ 959	N/A	US\$ 959
	QNB Finance Ltd	-	"	-	US\$ 954	N/A	US\$ 954
	Prudential Financial Inc	-	"	-	US\$ 933	N/A	US\$ 933
	Mitsubishi UFJ Lease & Finance Co Ltd	-	"	-	US\$ 927	N/A	US\$ 927
	Westpac Banking Corp	-	"	-	US\$ 879	N/A	US\$ 879
	Woolworths Group Ltd	-	"	-	US\$ 867	N/A	US\$ 867
	Niagara Mohawk Power Corp	-	"	-	US\$ 851	N/A	US\$ 851
	CenterPoint Energy Inc	-	"	-	US\$ 851	N/A	US\$ 851
	Visa Inc	-	"	-	US\$ 845	N/A	US\$ 845
	Sinopec Capital 2013 Ltd	-	"	-	US\$ 835	N/A	US\$ 835
	Natwest Group PLC	-	"	-	US\$ 815	N/A	US\$ 815
	Sky Ltd	-	"	-	US\$ 779	N/A	US\$ 779
	Xylem Inc/NY	-	"	-	US\$ 774	N/A	US\$ 774
	DR Horton Inc	-	"	-	US\$ 772	N/A	US\$ 772
	Nationwide Financial Services Inc	-	"	-	US\$ 758	N/A	US\$ 758
	Canadian Natural Resources Ltd	-	"	-	US\$ 758	N/A	US\$ 758

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Warner Media LLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 752	N/A	US\$ 752	
	BNZ International Funding Ltd/London	-	"	-	US\$ 743	N/A	US\$ 743	
	Sinopec Group Overseas Development 2017 Ltd	-	"	-	US\$ 717	N/A	US\$ 717	
	Abbott Laboratories	-	"	-	US\$ 705	N/A	US\$ 705	
	Digital Realty Trust LP	-	"	-	US\$ 679	N/A	US\$ 679	
	Cummins Inc	-	"	-	US\$ 664	N/A	US\$ 664	
	Carlisle Cos Inc	-	"	-	US\$ 658	N/A	US\$ 658	
	Glencore Funding LLC	-	"	-	US\$ 645	N/A	US\$ 645	
	Western Union Co/The	-	"	-	US\$ 644	N/A	US\$ 644	
	Republic Services Inc	-	"	-	US\$ 637	N/A	US\$ 637	
	American Water Capital Corp	-	"	-	US\$ 633	N/A	US\$ 633	
	OneBeacon US Holdings Inc	-	"	-	US\$ 623	N/A	US\$ 623	
	Sinopec Group Overseas Development 2012 Ltd	-	"	-	US\$ 622	N/A	US\$ 622	
	Ohio Power Co	-	"	-	US\$ 604	N/A	US\$ 604	
	Arizona Public Service Co	-	"	-	US\$ 592	N/A	US\$ 592	
	Duke Energy Progress LLC	-	"	-	US\$ 590	N/A	US\$ 590	
	ViacomCBS Inc	-	"	-	US\$ 579	N/A	US\$ 579	
	Energy Inc	-	"	-	US\$ 566	N/A	US\$ 566	
	Fifth Third Bank/Cincinnati OH	-	"	-	US\$ 565	N/A	US\$ 565	
	United Parcel Service Inc	-	"	-	US\$ 552	N/A	US\$ 552	
	Aflac Inc	-	"	-	US\$ 552	N/A	US\$ 552	
	PACCAR Financial Corp	-	"	-	US\$ 552	N/A	US\$ 552	
	ABC Inc	-	"	-	US\$ 525	N/A	US\$ 525	
	TTX Co	-	"	-	US\$ 524	N/A	US\$ 524	
	Baker Hughes a GE Co LLC / Baker Hughes Co-Obligor Inc	-	"	-	US\$ 522	N/A	US\$ 522	
	Realty Income Corp	-	"	-	US\$ 521	N/A	US\$ 521	
	Hanwha Energy USA Holdings Corp	-	"	-	US\$ 514	N/A	US\$ 514	
	Danone SA	-	"	-	US\$ 506	N/A	US\$ 506	
	United Overseas Bank Ltd	-	"	-	US\$ 459	N/A	US\$ 459	
	Target Corp	-	"	-	US\$ 455	N/A	US\$ 455	
	Starbucks Corp	-	"	-	US\$ 430	N/A	US\$ 430	
	GlaxoSmithKline Capital PLC	-	"	-	US\$ 426	N/A	US\$ 426	
	Comerica Bank	-	"	-	US\$ 425	N/A	US\$ 425	
	Banco del Estado de Chile	-	"	-	US\$ 423	N/A	US\$ 423	
	CBS Corp	-	"	-	US\$ 413	N/A	US\$ 413	
	Fidelity National Information Services Inc	-	"	-	US\$ 413	N/A	US\$ 413	
	Komatsu Finance America Inc	-	"	-	US\$ 413	N/A	US\$ 413	
	Truist Financial Corp	-	"	-	US\$ 410	N/A	US\$ 410	
	Newmont Goldcorp Corp	-	"	-	US\$ 404	N/A	US\$ 404	
	AXA Equitable Holdings Inc	-	"	-	US\$ 403	N/A	US\$ 403	
	PepsiCo Inc	-	"	-	US\$ 400	N/A	US\$ 400	
	StantCorp Financial Group Inc	-	"	-	US\$ 388	N/A	US\$ 388	
	Canadian Pacific-Railway Co	-	"	-	US\$ 378	N/A	US\$ 378	
	Enbridge Inc	-	"	-	US\$ 378	N/A	US\$ 378	
	Principal Financial Group Inc	-	"	-	US\$ 372	N/A	US\$ 372	
	Permco Ricard SA	-	"	-	US\$ 364	N/A	US\$ 364	
	First Republic Bank/CA	-	"	-	US\$ 360	N/A	US\$ 360	
	Archer-Daniels-Midland Co	-	"	-	US\$ 353	N/A	US\$ 353	
	WEC Energy Group Inc	-	"	-	US\$ 351	N/A	US\$ 351	
	Ventas Realty LP / Ventas Capital Corp	-	"	-	US\$ 349	N/A	US\$ 349	
	Amgen Inc	-	"	-	US\$ 347	N/A	US\$ 347	
	Allstate Corp/The	-	"	-	US\$ 332	N/A	US\$ 332	

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Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	BP Capital Markets PLC	-	Financial assets at fair value through other comprehensive income	-	US\$ 329	N/A	US\$ 329
	CommonSpirit Health	"	"	-	US\$ 322	N/A	US\$ 322
	Total Capital International SA	-	"	-	US\$ 320	N/A	US\$ 320
	Southern Co/The	-	"	-	US\$ 318	N/A	US\$ 318
	Anthem Inc	-	"	-	US\$ 314	N/A	US\$ 314
	Chubb INA Holdings Inc	-	"	-	US\$ 313	N/A	US\$ 313
	America Movil SAB de CV	-	"	-	US\$ 311	N/A	US\$ 311
	Alibaba Group Holding Ltd	-	"	-	US\$ 306	N/A	US\$ 306
	Aon Corp	-	"	-	US\$ 300	N/A	US\$ 300
	Johnson Controls International plc	-	"	-	US\$ 298	N/A	US\$ 298
	Mondelez International Inc	-	"	-	US\$ 284	N/A	US\$ 284
	Southern Natural Gas Co LLC / Southern Natural Issuing Corp	-	"	-	US\$ 277	N/A	US\$ 277
	Coca-Cola Co/The	-	"	-	US\$ 275	N/A	US\$ 275
	Huntington National Bank/The	-	"	-	US\$ 257	N/A	US\$ 257
	EI du Pont de Nemours and Co	-	"	-	US\$ 255	N/A	US\$ 255
	Capital One Bank USA NA	-	"	-	US\$ 254	N/A	US\$ 254
	Waste Management Inc	-	"	-	US\$ 251	N/A	US\$ 251
	Aon PLC	-	"	-	US\$ 246	N/A	US\$ 246
	Nasdaq Inc	-	"	-	US\$ 220	N/A	US\$ 220
	Deere & Co	-	"	-	US\$ 217	N/A	US\$ 217
	Saudi Arabian Oil Co	-	"	-	US\$ 202	N/A	US\$ 202
	Nucor Corp	-	"	-	US\$ 189	N/A	US\$ 189
	Dow Chemical Co/The	-	"	-	US\$ 135	N/A	US\$ 135
	Columbia Property Trust Operating Partnership LP	-	"	-	US\$ 105	N/A	US\$ 105
	Wells Fargo & Company	-	Financial assets at amortized cost	-	US\$ 180,487	N/A	US\$ 182,212
	Citigroup Global Market Inc.	-	"	-	US\$ 99,965	N/A	US\$ 100,488
	JPMorgan Chase & Co.	-	"	-	US\$ 95,058	N/A	US\$ 95,567
	Goldman Sachs Group Inc/The	-	"	-	US\$ 14,930	N/A	US\$ 15,140
	Government bond	-	Financial assets at fair value through other comprehensive income	-	US\$ 472,618	N/A	US\$ 472,618
	United States Treasury Note/Bond	-	"	-	US\$ 5,023	N/A	US\$ 5,023
	Abu Dhabi Government International Bond	-	"	-	US\$ 1,396	N/A	US\$ 1,396
	Qatar Government International Bond	-	"	-			
	Agency bonds/Agency mortgage-backed securities	-	Financial assets at fair value through other comprehensive income	-	US\$ 518,729	N/A	US\$ 518,729
	Fannie Mae Pool	-	"	-	US\$ 297,578	N/A	US\$ 297,578
	Ginnie Mae II Pool	-	"	-	US\$ 134,588	N/A	US\$ 134,588
	Fannie Mae REMICS	-	"	-	US\$ 128,111	N/A	US\$ 128,111
	Freddie Mac REMICS	-	"	-	US\$ 121,514	N/A	US\$ 121,514
	Freddie Mac Pool	-	"	-	US\$ 110,508	N/A	US\$ 110,508
	Fannie Mae or Freddie Mac	-	"	-	US\$ 99,267	N/A	US\$ 99,267
	Ginnie Mae	-	"	-	US\$ 80,113	N/A	US\$ 80,113
	Freddie Mac Gold Pool	-	"	-	US\$ 35,743	N/A	US\$ 35,743
	Government National Mortgage Association	-	"	-	US\$ 19,416	N/A	US\$ 19,416
	Fannie Mae-Aces	-	"	-	US\$ 3,760	N/A	US\$ 3,760
	Freddie Mac Strips	-	"	-	US\$ 3,605	N/A	US\$ 3,605
	State Board of Administration Finance Corp	-	"	-	US\$ 1,947	N/A	US\$ 1,947
	University of California	-	"	-	US\$ 1,942	N/A	US\$ 1,942
	Korea Hydro & Nuclear Power Co Ltd	-	"	-	US\$ 1,159	N/A	US\$ 1,159
	Federal National Mortgage Association	-	"	-	US\$ 1,029	N/A	US\$ 1,029
	Denver City & County Housing Authority	-	"	-			

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	Ginnie Mae I Pool	-	Financial assets at fair value through other comprehensive income	-	US\$ 976	N/A	US\$ 976	
	Oregon Health & Science University	-	"	-	US\$ 826	N/A	US\$ 826	
	FRESB 2019-SB61 Mortgage Trust	-	"	-	US\$ 623	N/A	US\$ 623	
	Freddie Mac Multifamily Structured Pass Through Certificates	-	"	-	US\$ 596	N/A	US\$ 596	
	State of Hawaii	-	"	-	US\$ 556	N/A	US\$ 556	
	FHLMC-GNMA	-	"	-	US\$ 535	N/A	US\$ 535	
	State of Wisconsin	-	"	-	US\$ 526	N/A	US\$ 526	
	Brazos Higher Education Authority Inc	-	"	-	US\$ 480	N/A	US\$ 480	
	FRESB 2019-SB60 Mortgage Trust	-	"	-	US\$ 412	N/A	US\$ 412	
	Freddie Mac Non Gold Pool	-	"	-	US\$ 300	N/A	US\$ 300	
	Sales Tax Securitization Corp	-	"	-	US\$ 252	N/A	US\$ 252	
	Fannie Mae Benchmark REMIC	-	"	-	US\$ 97	N/A	US\$ 97	
	Asset-backed securities							
	JPMBB Commercial Mortgage Securities Trust 2014-C24	-	Financial assets at fair value through other comprehensive income	-	US\$ 8,013	N/A	US\$ 8,013	
	Wells Fargo Commercial Mortgage Trust 2016-BNK1	-	"	-	US\$ 7,881	N/A	US\$ 7,881	
	BANK 2020-BNK26	-	"	-	US\$ 7,325	N/A	US\$ 7,325	
	Citigroup Commercial Mortgage Trust 2014-GC21	-	"	-	US\$ 6,888	N/A	US\$ 6,888	
	CGDDB Commercial Mortgage Trust 2017-BIOC	-	"	-	US\$ 6,854	N/A	US\$ 6,854	
	Hyundai Auto Receivables Trust 2017-A	-	"	-	US\$ 6,742	N/A	US\$ 6,742	
	Benchmark 2019-B11 Mortgage Trust	-	"	-	US\$ 6,533	N/A	US\$ 6,533	
	Wells Fargo Commercial Mortgage Trust 2016-C35	-	"	-	US\$ 6,388	N/A	US\$ 6,388	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C29	-	"	-	US\$ 6,074	N/A	US\$ 6,074	
	UBS-Barclays Commercial Mortgage Trust 2012-C2	-	"	-	US\$ 5,743	N/A	US\$ 5,743	
	WFRBS Commercial Mortgage Trust 2013-C13	-	"	-	US\$ 5,663	N/A	US\$ 5,663	
	BBCMS 2018-TALL Mortgage Trust	-	"	-	US\$ 5,403	N/A	US\$ 5,403	
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C30	-	"	-	US\$ 5,372	N/A	US\$ 5,372	
	COMM 2015-CGRE24 Mortgage Trust	-	"	-	US\$ 5,333	N/A	US\$ 5,333	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C10	-	"	-	US\$ 5,071	N/A	US\$ 5,071	
	MRCDD 2019-MARK Mortgage Trust	-	"	-	US\$ 4,917	N/A	US\$ 4,917	
	BANK 2019-BNK22	-	"	-	US\$ 4,583	N/A	US\$ 4,583	
	Mercedes-Benz Auto Lease Trust 2019-B	-	"	-	US\$ 4,333	N/A	US\$ 4,333	
	BANK 2017-BNK5	-	"	-	US\$ 4,272	N/A	US\$ 4,272	
	JPMBCC Commercial Mortgage Securities Trust 2017-JP7	-	"	-	US\$ 4,261	N/A	US\$ 4,261	
	BANK 2017-BNK6	-	"	-	US\$ 4,254	N/A	US\$ 4,254	
	UBS Commercial Mortgage Trust 2018-C10	-	"	-	US\$ 4,248	N/A	US\$ 4,248	
	BANK 2019-BNK17	-	"	-	US\$ 4,234	N/A	US\$ 4,234	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C7	-	"	-	US\$ 4,024	N/A	US\$ 4,024	
	JP Morgan Chase Commercial Mortgage Securities Trust 2012-LC9	-	"	-	US\$ 4,020	N/A	US\$ 4,020	
	Enterprise Fleet Financing 2020-1 LLC	-	"	-	US\$ 3,870	N/A	US\$ 3,870	
	JPMBB Commercial Mortgage Securities Trust 2015-C28	-	"	-	US\$ 3,620	N/A	US\$ 3,620	
	Benchmark 2018-B2 Mortgage Trust	-	"	-	US\$ 3,482	N/A	US\$ 3,482	
	UBS-Barclays Commercial Mortgage Trust 2013-C6	-	"	-	US\$ 3,321	N/A	US\$ 3,321	
	GS Mortgage Securities Trust 2012-GC6	-	"	-	US\$ 3,188	N/A	US\$ 3,188	
	Ford Credit Auto Lease Trust 2019-B	-	"	-	US\$ 3,139	N/A	US\$ 3,139	
	Wells Fargo Commercial Mortgage Trust 2017-C40	-	"	-	US\$ 3,063	N/A	US\$ 3,063	
	Morgan Stanley Capital I Trust 2017-H1	-	"	-	US\$ 3,051	N/A	US\$ 3,051	
	Citigroup Commercial Mortgage Trust 2016-P5	-	"	-	US\$ 3,017	N/A	US\$ 3,017	
	Hyundai Auto Receivables Trust 2018-A	-	"	-	US\$ 2,942	N/A	US\$ 2,942	
	Nissan Auto Lease Trust 2019-B	-	"	-	US\$ 2,899	N/A	US\$ 2,899	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020			Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	
TSMC Global	GS Mortgage Securities Corp Trust 2018-R1VR	-	Financial assets at fair value through other comprehensive income	-	US\$ 2,873	N/A	US\$ 2,873
	Ford Credit Auto Lease Trust 2020-B	-	"	-	US\$ 2,869	N/A	US\$ 2,869
	UBS-Bardays Commercial Mortgage Trust 2012-C3	-	"	-	US\$ 2,865	N/A	US\$ 2,865
	BANK 2019-BNK24	-	"	-	US\$ 2,829	N/A	US\$ 2,829
	Citigroup Commercial Mortgage Trust 2016-C3	-	"	-	US\$ 2,781	N/A	US\$ 2,781
	Enterprise Fleet Financing 2019-2 LLC	-	"	-	US\$ 2,770	N/A	US\$ 2,770
	BX Commercial Mortgage Trust 2018-IND	-	"	-	US\$ 2,760	N/A	US\$ 2,760
	GS Mortgage Securities Trust 2013-GC12	-	"	-	US\$ 2,717	N/A	US\$ 2,717
	Wells Fargo Commercial Mortgage Trust 2020-C55	-	"	-	US\$ 2,638	N/A	US\$ 2,638
	Ford Credit Auto Owner Trust 2020-REV1	-	"	-	US\$ 2,635	N/A	US\$ 2,635
	GM Financial Consumer Automobile Receivables Trust 2017-2	-	"	-	US\$ 2,524	N/A	US\$ 2,524
	American Express Credit Account Master Trust	-	"	-	US\$ 2,519	N/A	US\$ 2,519
	BBCMS Mortgage Trust 2020-C8	-	"	-	US\$ 2,478	N/A	US\$ 2,478
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C6	-	"	-	US\$ 2,470	N/A	US\$ 2,470
	Citibank Credit Card Issuance Trust	-	"	-	US\$ 2,304	N/A	US\$ 2,304
	UBS Commercial Mortgage Trust 2018-C11	-	"	-	US\$ 2,243	N/A	US\$ 2,243
	Morgan Stanley Capital I Trust 2018-H3	-	"	-	US\$ 2,240	N/A	US\$ 2,240
	Morgan Stanley Capital I Trust 2018-H3	-	"	-	US\$ 2,165	N/A	US\$ 2,165
	COMM 2013-CCRE12 Mortgage Trust	-	"	-	US\$ 2,163	N/A	US\$ 2,163
	BENCHMARK 2018-B4	-	"	-	US\$ 2,126	N/A	US\$ 2,126
	JPMDDB Commercial Mortgage Securities Trust 2017-C7	-	"	-	US\$ 2,103	N/A	US\$ 2,103
	Citigroup Commercial Mortgage Trust 2017-P8	-	"	-	US\$ 2,096	N/A	US\$ 2,096
	Ford Credit Auto Owner Trust 2019-A	-	"	-	US\$ 2,068	N/A	US\$ 2,068
	Morgan Stanley Bank of America Merrill Lynch Trust 2016-C31	-	"	-	US\$ 2,015	N/A	US\$ 2,015
	JPMBB Commercial Mortgage Securities Trust 2014-C19	-	"	-	US\$ 1,913	N/A	US\$ 1,913
	Hyundai Auto Receivables Trust 2016-B	-	"	-	US\$ 1,866	N/A	US\$ 1,866
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C8	-	"	-	US\$ 1,716	N/A	US\$ 1,716
	Wells Fargo Commercial Mortgage Trust 2012-LC5	-	"	-	US\$ 1,586	N/A	US\$ 1,586
	Wells Fargo Commercial Mortgage Trust 2015-C28	-	"	-	US\$ 1,578	N/A	US\$ 1,578
	WFRBS Commercial Mortgage Trust 2013-C17	-	"	-	US\$ 1,568	N/A	US\$ 1,568
	COMM 2014-CCRE17 Mortgage Trust	-	"	-	US\$ 1,563	N/A	US\$ 1,563
	JPMBB Commercial Mortgage Securities Trust 2013-C12	-	"	-	US\$ 1,535	N/A	US\$ 1,535
	COMM 2020-CBM Mortgage Trust	-	"	-	US\$ 1,497	N/A	US\$ 1,497
	ARI Fleet Lease Trust 2019-A	-	"	-	US\$ 1,476	N/A	US\$ 1,476
	GS Mortgage Securities Trust 2014-GC22	-	"	-	US\$ 1,411	N/A	US\$ 1,411
	Wells Fargo Commercial Mortgage Trust 2016-C36	-	"	-	US\$ 1,385	N/A	US\$ 1,385
	Honda Auto Receivables 2017-3 Owner Trust	-	"	-	US\$ 1,341	N/A	US\$ 1,341
	Toyota Auto Receivables 2018-D Owner Trust	-	"	-	US\$ 1,299	N/A	US\$ 1,299
	DBGS 2018-BIOD Mortgage Trust	-	"	-	US\$ 1,243	N/A	US\$ 1,243
	Nissan Auto Lease Trust 2019-A	-	"	-	US\$ 1,231	N/A	US\$ 1,231
	Chase Issuance Trust	-	"	-	US\$ 1,218	N/A	US\$ 1,218
	GM Financial Automobile Leasing Trust 2019-4	-	"	-	US\$ 1,188	N/A	US\$ 1,188
	Morgan Stanley Capital I Trust 2019-H6	-	"	-	US\$ 1,178	N/A	US\$ 1,178
	Benchmark 2019-B14 Mortgage Trust	-	"	-	US\$ 1,168	N/A	US\$ 1,168
	GS Mortgage Securities Trust 2014-GC24	-	"	-	US\$ 1,165	N/A	US\$ 1,165
	Hyundai Auto Receivables Trust 2019-B	-	"	-	US\$ 1,138	N/A	US\$ 1,138
	GM Financial Consumer Automobile Receivables Trust 2018-1	-	"	-	US\$ 1,072	N/A	US\$ 1,072
	GS Mortgage Securities Trust 2019-GSA1	-	"	-	US\$ 1,047	N/A	US\$ 1,047
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C12	-	"	-	US\$ 1,025	N/A	US\$ 1,025
	Ford Credit Auto Owner Trust 2017-REV1	-	"	-	US\$ 1,013	N/A	US\$ 1,013
	COMM 2013-LC6 Mortgage Trust	-	"	-	US\$ 1,013	N/A	US\$ 1,013
	Ford Credit Auto Lease Trust 2019-A	-	"	-	US\$ 1,013	N/A	US\$ 1,013

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
TSMC Global	WFRBS Commercial Mortgage Trust 2011-C4	-	Financial assets at fair value through other comprehensive income	-	US\$ 1,006	N/A	US\$ 1,006	
	Benchmark 2019-B9 Mortgage Trust	-	"	-	US\$ 980	N/A	US\$ 980	
	Citigroup Commercial Mortgage Trust 2013-GC11	-	"	-	US\$ 977	N/A	US\$ 977	
	Citigroup Commercial Mortgage Trust 2015-GC27	-	"	-	US\$ 970	N/A	US\$ 970	
	Hyundai Auto Lease Securitization Trust 2019-A	-	"	-	US\$ 964	N/A	US\$ 964	
	Morgan Stanley Bank of America Merrill Lynch Trust 2013-C13	-	"	-	US\$ 952	N/A	US\$ 952	
	COMM 2012-CCRE5 Mortgage Trust	-	"	-	US\$ 934	N/A	US\$ 934	
	Toyota Auto Receivables 2020-A Owner Trust	-	"	-	US\$ 928	N/A	US\$ 928	
	Wells Fargo Commercial Mortgage Trust 2015-LC20	-	"	-	US\$ 919	N/A	US\$ 919	
	BBCMS MORTGAGE TRUST 2017-C1	-	"	-	US\$ 895	N/A	US\$ 895	
	Benchmark 2019-B15 Mortgage Trust	-	"	-	US\$ 841	N/A	US\$ 841	
	280 Park Avenue 2017-280P Mortgage Trust	-	"	-	US\$ 830	N/A	US\$ 830	
	GM Financial Automobile Leasing Trust 2019-2	-	"	-	US\$ 826	N/A	US\$ 826	
	BANK 2017-BNK7	-	"	-	US\$ 818	N/A	US\$ 818	
	Cantor Commercial Real Estate Lending 2019-CF1	-	"	-	US\$ 797	N/A	US\$ 797	
	Ford Credit Auto Lease Trust	-	"	-	US\$ 790	N/A	US\$ 790	
	Citigroup Commercial Mortgage Trust 2014-GC23	-	"	-	US\$ 778	N/A	US\$ 778	
	Citigroup Commercial Mortgage Trust 2015-GC35	-	"	-	US\$ 773	N/A	US\$ 773	
	Toyota Auto Receivables 2017-A Owner Trust	-	"	-	US\$ 764	N/A	US\$ 764	
	BANK 2019-BNK23	-	"	-	US\$ 741	N/A	US\$ 741	
	Morgan Stanley Capital I Trust 2019-H7	-	"	-	US\$ 733	N/A	US\$ 733	
	COMM 2013-CCRES Mortgage Trust	-	"	-	US\$ 716	N/A	US\$ 716	
	Wells Fargo Commercial Mortgage Trust 2015-NXS3	-	"	-	US\$ 696	N/A	US\$ 696	
	GM Financial Automobile Leasing Trust 2019-1	-	"	-	US\$ 672	N/A	US\$ 672	
	GM Financial Automobile Leasing Trust 2019-3	-	"	-	US\$ 655	N/A	US\$ 655	
	COMM 2015-CCRE22 Mortgage Trust	-	"	-	US\$ 627	N/A	US\$ 627	
	Mercedes-Benz Auto Lease Trust 2019-A	-	"	-	US\$ 617	N/A	US\$ 617	
	GS Mortgage Securities Corp Trust 2020-LUPTN	-	"	-	US\$ 602	N/A	US\$ 602	
	CD 2016-CD2 Mortgage Trust	-	"	-	US\$ 503	N/A	US\$ 503	
	JPMDB Commercial Mortgage Securities Trust 2019-COR6	-	"	-	US\$ 500	N/A	US\$ 500	
	JP Morgan Chase Commercial Mortgage Securities Trust 2015-JP1	-	"	-	US\$ 492	N/A	US\$ 492	
	Citigroup Commercial Mortgage Trust 2014-GC19	-	"	-	US\$ 444	N/A	US\$ 444	
	Chesapeake Funding II LLC	-	"	-	US\$ 403	N/A	US\$ 403	
	DBUS 2011-LC2 Mortgage Trust	-	"	-	US\$ 392	N/A	US\$ 392	
	WFRBS Commercial Mortgage Trust 2014-C25	-	"	-	US\$ 385	N/A	US\$ 385	
	GS Mortgage Securities Trust 2014-GC26	-	"	-	US\$ 383	N/A	US\$ 383	
	UBS-Barclays Commercial Mortgage Trust 2013-C5	-	"	-	US\$ 370	N/A	US\$ 370	
	Mercedes-Benz Auto Lease Trust 2018-B	-	"	-	US\$ 368	N/A	US\$ 368	
	Morgan Stanley Bank of America Merrill Lynch Trust 2012-C5	-	"	-	US\$ 197	N/A	US\$ 197	
	Honda Auto Receivables 2020-2 Owner Trust	-	"	-	US\$ 166	N/A	US\$ 166	
	COMM 2015-DC1 Mortgage Trust	-	"	-	US\$ 165	N/A	US\$ 165	
	BANK 2020-BNK28	-	"	-	US\$ 156	N/A	US\$ 156	
	Toyota Auto Receivables 2018-B Owner Trust	-	"	-	US\$ 132	N/A	US\$ 132	
	BBCMS Mortgage Trust 2020-C7	-	"	-	US\$ 110	N/A	US\$ 110	
	CFCRE Commercial Mortgage Trust 2011-C1	-	"	-	US\$ 73	N/A	US\$ 73	
	COMM 2014-CCRE15 Mortgage Trust	-	"	-	US\$ 46	N/A	US\$ 46	
	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\$ 81,161	4	US\$ 81,161	

(Continued)

Held Company Name	Marketable Securities Type and Name	Relationship with the Company	Financial Statement Account	December 31, 2020				Note
				Shares/Units (In Thousands)	Carrying Value (Foreign Currencies in Thousands)	Percentage of Ownership (%)	Fair Value (Foreign Currencies in Thousands)	
VTAF II	Non-publicly traded equity investments Aether Systems, Inc.	-	Financial assets at fair value through other comprehensive income	1,085	US\$ 386	20	US\$ 386	
	5V Technologies, Inc.	-	"	4	-	-	-	
VTAF III	Publicly traded stocks Sentelic Corporation	-	Financial assets at fair value through other comprehensive income	1,019	US\$ 1,778	3	US\$ 1,778	
	Non-publicly traded equity investments LiquidLeads Lighting Corp.	-	Financial assets at fair value through other comprehensive income	1,952	US\$ 800	14	US\$ 800	
Growth Fund	Neoconix, Inc.	-	"	4,147	US\$ 174	-	US\$ 174	
	Non-publicly traded equity investments Innovium, Inc.	-	Financial assets at fair value through other comprehensive income	230	US\$ 1,863	-	US\$ 1,863	
	Innovium, Inc.	-	"	221	US\$ 1,793	-	US\$ 1,793	
	CNEX Labs, Inc.	-	"	237	US\$ 479	-	US\$ 479	
	Astera Labs, Inc.	-	"	127	US\$ 250	-	US\$ 250	

(Concluded)

TABLE 4

Taiwan Semiconductor Manufacturing Company Limited and Investees

MARKETABLE SECURITIES ACQUIRED AND DISPOSED OF AT COSTS OR PRICES OF AT LEAST NT\$300 MILLION OR 20% OF THE PAID-IN CAPITAL FOR THE YEAR ENDED DECEMBER 31, 2020
(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)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount
TSMC Global	Corporate bond Bank of America Corp	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 46,084	-	US\$ 35,954	-	US\$ 25,078	US\$ 23,832	US\$ 58,724
	Mitsubishi UFJ Financial Group Inc	"	-	-	-	US\$ 21,332	-	US\$ 16,408	-	US\$ 3,583	US\$ 3,565	US\$ 34,946
	AbnVie Inc	"	-	-	-	US\$ 31,425	-	US\$ 30,755	-	US\$ 30,437	US\$ 30,223	US\$ 33,716
	Goldman Sachs Group Inc/The	"	-	-	-	US\$ 25,789	-	US\$ 18,529	-	US\$ 15,109	US\$ 14,762	US\$ 29,809
	JPMorgan Chase & Co	"	-	-	-	US\$ 20,825	-	US\$ 11,988	-	US\$ 4,033	US\$ 4,000	US\$ 29,759
	Wells Fargo & Co	"	-	-	-	US\$ 11,864	-	US\$ 17,277	-	US\$ 4,109	US\$ 3,956	US\$ 26,074
	Metropolitan Life Global Funding I	"	-	-	-	US\$ 8,222	-	US\$ 22,410	-	US\$ 9,691	US\$ 9,427	US\$ 21,597
	Bristol-Myers Squibb Co	"	-	-	-	US\$ 21,666	-	US\$ 26,225	-	US\$ 27,630	US\$ 27,393	US\$ 21,090
	Mizuho Financial Group Inc	"	-	-	-	US\$ 10,307	-	US\$ 14,034	-	US\$ 3,862	US\$ 3,774	US\$ 20,795
	Toyota Motor Credit Corp	"	-	-	-	US\$ -	-	US\$ 18,775	-	US\$ -	US\$ -	US\$ 19,401
	HSBC Holdings PLC	"	-	-	-	US\$ 20,102	-	US\$ 9,759	-	US\$ 14,126	US\$ 13,853	US\$ 16,113
	Hyundai Capital America	"	-	-	-	US\$ 3,187	-	US\$ 12,872	-	US\$ 406	US\$ 400	US\$ 15,983
	Santander UK PLC	"	-	-	-	US\$ 8,272	-	US\$ 11,560	-	US\$ 4,480	US\$ 4,322	US\$ 15,704
	Volkswagen Group of America Finance LLC	"	-	-	-	US\$ 3,896	-	US\$ 13,134	-	US\$ 1,777	US\$ 1,754	US\$ 15,417
	National Securities Clearing Corp	"	-	-	-	US\$ 15,211	-	US\$ 15,211	-	US\$ 1,473	US\$ 1,449	US\$ 14,129
	Lloyds Banking Group PLC	"	-	-	-	US\$ 2,359	-	US\$ 10,734	-	US\$ -	US\$ -	US\$ 13,428
	AT&T Inc	"	-	-	-	US\$ 26,140	-	US\$ 15,881	-	US\$ 30,123	US\$ 28,835	US\$ 13,180
	Chevron Corp	"	-	-	-	US\$ -	-	US\$ 13,770	-	US\$ 1,574	US\$ 1,530	US\$ 12,771
	Royal Bank of Canada	"	-	-	-	US\$ 1,004	-	US\$ 15,844	-	US\$ 5,082	US\$ 4,983	US\$ 12,271
	Guardian Life Global Funding	"	-	-	-	US\$ 1,502	-	US\$ 10,601	-	US\$ -	US\$ -	US\$ 12,187
	US Bancorp	"	-	-	-	US\$ 2,028	-	US\$ 11,094	-	US\$ 2,000	US\$ 1,953	US\$ 11,651
	American Honda Finance Corp	"	-	-	-	US\$ -	-	US\$ 11,210	-	US\$ -	US\$ -	US\$ 11,354
	Amazon.com Inc	"	-	-	-	US\$ 1,018	-	US\$ 10,687	-	US\$ 1,054	US\$ 976	US\$ 10,846
	TJX Cos Inc/The	"	-	-	-	US\$ -	-	US\$ 12,500	-	US\$ 3,429	US\$ 3,150	US\$ 10,563
	Verizon Communications Inc	"	-	-	-	US\$ 14,058	-	US\$ 9,489	-	US\$ 13,490	US\$ 12,509	US\$ 10,558
	Equinor ASA	"	-	-	-	US\$ -	-	US\$ 11,811	-	US\$ 3,052	US\$ 2,889	US\$ 9,635
	Exxon Mobil Corp	"	-	-	-	US\$ -	-	US\$ 17,331	-	US\$ 10,272	US\$ 10,025	US\$ 7,576
	CVS Health Corp	"	-	-	-	US\$ 22,242	-	US\$ 4,205	-	US\$ 21,034	US\$ 20,205	US\$ 5,981
	Fox Corp	"	-	-	-	US\$ 7,331	-	US\$ 10,171	-	US\$ 12,216	US\$ 12,059	US\$ 5,483
	ERAC USA Finance LLC	"	-	-	-	US\$ 11,904	-	US\$ 3,659	-	US\$ 11,312	US\$ 11,159	US\$ 4,298
	JPMorgan Chase & Co	"	-	-	-	US\$ 7,849	-	US\$ 11,950	-	US\$ 11,819	US\$ 11,819	US\$ 3,981
	Hewlett Packard Enterprise Co	"	-	-	-	US\$ 10,661	-	US\$ 3,863	-	US\$ 11,564	US\$ 11,142	US\$ 3,439
	Walt Disney Co/The	"	-	-	-	US\$ 3,246	-	US\$ 23,391	-	US\$ 25,026	US\$ 23,723	US\$ 3,058
	General Dynamics Corp	"	-	-	-	US\$ 6,297	-	US\$ 9,418	-	US\$ 15,546	US\$ 14,412	US\$ 1,238
	Wells Fargo & Co	Financial assets at amortized cost	-	-	-	US\$ 160,098	-	US\$ 20,630	-	US\$ -	US\$ -	US\$ 180,487
	Citigroup Global Market Inc.	"	-	-	-	US\$ 100,000	-	US\$ -	-	US\$ -	US\$ -	US\$ 99,965
	JPMorgan Chase & Co.	"	-	-	-	US\$ 84,967	-	US\$ 10,111	-	US\$ -	US\$ -	US\$ 95,058
	Goldman Sachs Group Inc/The	"	-	-	-	US\$ -	-	US\$ 14,930	-	US\$ -	US\$ -	US\$ 14,930

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal		Ending Balance (Note)		
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Carrying Value	Gain/Loss on Disposal	Shares/Units (In Thousands)
TSMC Global	Government bond United States Treasury Note/Bond	Financial assets at fair value through other comprehensive income	-	-	-	US\$ 419,942	-	US\$ 683,985	-	US\$ 836,067	US\$ 817,467	US\$ 18,600	US\$ 287,012
	United States Treasury Note/Bond	"	-	-	-	US\$ -	-	US\$ 243,371	-	US\$ 60,688	US\$ 60,688	US\$ -	US\$ 182,533
	Agency bonds/Agency mortgage-backed securities Fannie Mae or Freddie Mac	Financial assets at fair value through other comprehensive income	-	-	-	US\$ -	-	US\$ 671,704	-	US\$ 630,072	US\$ 628,929	US\$ 1,143	US\$ 42,872
	Ginnie Mae	"	-	-	-	US\$ -	-	US\$ 371,076	-	US\$ 329,867	US\$ 329,505	US\$ 362	US\$ 41,775
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 31,529	-	US\$ 77	US\$ 81	US\$ (4)	US\$ 31,812
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 31,618	-	US\$ -	US\$ -	US\$ -	US\$ 31,787
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 31,658	-	US\$ -	US\$ -	US\$ -	US\$ 31,756
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 31,057	-	US\$ 5	US\$ 5	US\$ -	US\$ 31,174
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 30,824	-	US\$ 2,420	US\$ 2,406	US\$ 14	US\$ 28,723
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 28,376	-	US\$ -	US\$ -	US\$ -	US\$ 28,537
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 28,251	-	US\$ 243	US\$ 253	US\$ (10)	US\$ 28,188
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 28,496	-	US\$ 3,626	US\$ 3,632	US\$ (6)	US\$ 24,963
	FNMA TBA 30 Yr 4	"	-	-	-	US\$ 17,372	-	US\$ 413,102	-	US\$ 409,695	US\$ 409,435	US\$ 260	US\$ 21,036
	Freddie Mac Pool	"	-	-	-	US\$ -	-	US\$ 26,913	-	US\$ 6,834	US\$ 6,806	US\$ 28	US\$ 20,247
	FNMA TBA 30 Yr 3.5	"	-	-	-	US\$ 9,259	-	US\$ 538,814	-	US\$ 528,608	US\$ 528,389	US\$ 219	US\$ 19,673
	GNMA II TBA 30 Yr 3.5	"	-	-	-	US\$ 10,517	-	US\$ 405,941	-	US\$ 397,904	US\$ 397,624	US\$ 280	US\$ 18,900
	Ginnie Mae	"	-	-	-	US\$ -	-	US\$ 150,623	-	US\$ 132,937	US\$ 132,781	US\$ 156	US\$ 17,896
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 18,793	-	US\$ 1,872	US\$ 1,994	US\$ (122)	US\$ 17,503
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 17,435	-	US\$ -	US\$ -	US\$ -	US\$ 17,474
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 16,176	-	US\$ 209	US\$ 220	US\$ (11)	US\$ 15,890
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 15,207	-	US\$ 917	US\$ 959	US\$ (42)	US\$ 14,294
	GNMA II TBA 30 Yr 3	"	-	-	-	US\$ 15,095	-	US\$ 546,063	-	US\$ 547,550	US\$ 546,840	US\$ 710	US\$ 14,249
	Freddie Mac	"	-	-	-	US\$ 696	-	US\$ 15,872	-	US\$ 2,904	US\$ 3,119	US\$ (193)	US\$ 13,631
	Freddie Mac Gold Pool	"	-	-	-	US\$ -	-	US\$ 12,610	-	US\$ 2,926	US\$ 3,043	US\$ (139)	US\$ 9,723
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 17,468	-	US\$ 8,915	US\$ 8,946	US\$ (31)	US\$ 8,515
	FNMA TBA 30 Yr 4.5	"	-	-	-	US\$ 20,165	-	US\$ 369,946	-	US\$ 382,027	US\$ 381,698	US\$ 329	US\$ 8,394
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ 987	-	US\$ 207,006	-	US\$ 202,126	US\$ 201,841	US\$ 285	US\$ 6,155
	GNMA II TBA 30 Yr 4.5	"	-	-	-	US\$ 7,496	-	US\$ 56,467	-	US\$ 58,653	US\$ 58,590	US\$ 63	US\$ 5,381
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 13,115	-	US\$ 8,732	US\$ 8,752	US\$ (20)	US\$ 4,377
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 28,040	-	US\$ 24,518	US\$ 24,461	US\$ 57	US\$ 3,592
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 720,211	-	US\$ 718,892	US\$ 716,978	US\$ 1,914	US\$ 3,253
	GNMA II TBA 30 Yr 4	"	-	-	-	US\$ -	-	US\$ 36,042	-	US\$ 35,090	US\$ 34,978	US\$ 112	US\$ 1,067
	Fannie Mae or Freddie Mac	"	-	-	-	US\$ -	-	US\$ 25,440	-	US\$ 24,718	US\$ 24,658	US\$ 60	US\$ 782
	Fannie Mae Pool	"	-	-	-	US\$ 16,230	-	US\$ 16,413	-	US\$ 16,413	US\$ 16,148	US\$ 265	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 11,962	-	US\$ -	-	US\$ 12,079	US\$ 11,900	US\$ 179	US\$ -
	Freddie Mac Gold Pool	"	-	-	-	US\$ 19,392	-	US\$ -	-	US\$ 19,677	US\$ 19,135	US\$ 542	US\$ -
	Freddie Mac Pool	"	-	-	-	US\$ -	-	US\$ 30,881	-	US\$ 30,624	US\$ 30,845	US\$ (221)	US\$ -
	Freddie Mac Pool	"	-	-	-	US\$ -	-	US\$ 11,321	-	US\$ 11,441	US\$ 11,320	US\$ 121	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 29,463	-	US\$ -	-	US\$ 29,873	US\$ 29,355	US\$ 518	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 13,261	-	US\$ -	-	US\$ 12,741	US\$ 12,622	US\$ 119	US\$ -
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 29,498	-	US\$ 29,527	US\$ 29,476	US\$ 51	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 40,438	-	US\$ -	-	US\$ 40,787	US\$ 40,399	US\$ 388	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 42,143	-	US\$ 42,162	US\$ 42,119	US\$ 43	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ 22,677	-	US\$ -	-	US\$ 23,181	US\$ 22,349	US\$ 832	US\$ -
	Fannie Mae Pool	"	-	-	-	US\$ -	-	US\$ 12,810	-	US\$ 12,807	US\$ 12,809	US\$ (2)	US\$ -
	Ginnie Mae II Pool	"	-	-	-	US\$ -	-	US\$ 19,016	-	US\$ 18,664	US\$ 19,009	US\$ (345)	US\$ -

(Continued)

Company Name	Marketable Securities Type and Name	Financial Statement Account	Counterparty	Nature of Relationship	Beginning Balance		Acquisition		Disposal		Gain/Loss on Disposal	Ending Balance (Note)	
					Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount	Shares/Units (In Thousands)	Amount		Carrying Value	Shares/Units (In Thousands)
TSMC Global	Fannie Mae Pool	Financial assets at fair value through other comprehensive income	-	-	US\$ -	-	US\$ 27,694	-	US\$ 27,598	US\$ 27,659	US\$ (61)	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 26,299	-	US\$ 27,107	US\$ 26,265	US\$ 842	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 43,455	-	US\$ -	-	US\$ 43,789	US\$ 43,333	US\$ 456	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 6,072	-	US\$ 4,451	-	US\$ 10,551	US\$ 10,512	US\$ 39	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 16,122	-	US\$ -	-	US\$ 16,194	US\$ 16,095	US\$ 99	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 28,876	-	US\$ 28,743	US\$ 28,875	US\$ (132)	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 25,431	-	US\$ 26,008	US\$ 25,393	US\$ 615	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 30,971	-	US\$ 31,136	US\$ 30,964	US\$ 172	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 11,248	-	US\$ -	-	US\$ 11,350	US\$ 11,003	US\$ 347	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 19,901	-	US\$ -	-	US\$ 20,081	US\$ 19,418	US\$ 663	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 40,590	-	US\$ 41,110	US\$ 40,555	US\$ 555	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 13,065	-	US\$ 13,073	US\$ 13,044	US\$ 29	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 12,107	-	US\$ 12,146	US\$ 12,080	US\$ 66	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ 12,628	-	US\$ -	-	US\$ 12,111	US\$ 11,994	US\$ 117	-	US\$ -
	FNMA TBA 30 Yr 5	"	-	-	US\$ 3,603	-	US\$ 62,210	-	US\$ 65,896	US\$ 65,813	US\$ 83	-	US\$ -
	FNMA TBA 30 Yr 3	"	-	-	US\$ 2,028	-	US\$ 17,223	-	US\$ 17,315	US\$ 17,223	US\$ 92	-	US\$ -
	FNMA TBA 15 Yr 3	"	-	-	US\$ 3,073	-	US\$ 721,017	-	US\$ 723,739	US\$ 722,965	US\$ 774	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 9,656	-	US\$ 12,739	US\$ 12,724	US\$ 15	-	US\$ -
	Freddie Mac Pool	"	-	-	US\$ -	-	US\$ 19,031	-	US\$ 19,456	US\$ 19,002	US\$ 454	-	US\$ -
	Ginnie Mae II Pool	"	-	-	US\$ 12,480	-	US\$ -	-	US\$ 12,551	US\$ 12,132	US\$ 419	-	US\$ -
	Ginnie Mae II Pool	"	-	-	US\$ 513	-	US\$ 13,356	-	US\$ 13,853	US\$ 13,849	US\$ 4	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 35,024	-	US\$ 35,439	US\$ 34,994	US\$ 445	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 12,270	-	US\$ 12,345	US\$ 12,262	US\$ 83	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 12,751	-	US\$ 12,782	US\$ 12,731	US\$ 51	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 31,593	-	US\$ 31,900	US\$ 31,554	US\$ 346	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 16,331	-	US\$ 16,375	US\$ 16,327	US\$ 48	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ 6,284	-	US\$ 49,131	-	US\$ 48,934	US\$ 49,083	US\$ (149)	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 7,821	-	US\$ 14,163	US\$ 14,070	US\$ 93	-	US\$ -
	GNMA II Pool MA6090	"	-	-	US\$ 16,840	-	US\$ 30,870	-	US\$ 30,603	US\$ 30,863	US\$ (260)	-	US\$ -
	GNMA II Pool MA6155	"	-	-	US\$ 23,932	-	US\$ -	-	US\$ 23,946	US\$ 24,029	US\$ (83)	-	US\$ -
	Ginnie Mae II Pool	"	-	-	US\$ 5,285	-	US\$ 16,418	-	US\$ 21,492	US\$ 21,683	US\$ (191)	-	US\$ -
	Fannie Mae Pool	"	-	-	US\$ -	-	US\$ 19,011	-	US\$ 19,004	US\$ 19,004	US\$ -	-	US\$ -

Note: The ending balance includes the amortization of premium/discount on bonds investments and other related adjustment.

(Concluded)

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, 2020

(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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities	February 11, 2020 (Note 1)	\$ 47,500,000 (Note 1)	Based on the terms in the purchase order	80 counterparties (Note 1), 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. China Steel Structure Co., Ltd. Chun Yuan Steel Industry Co., Ltd. Cica-Huntek Chemical Technology Taiwan Co., Ltd. Confederate Technology Co., Ltd. Da-Cin Construction Co., Ltd. Desiccant Technology Corporation EDS International Evergreen Steel Corporation Exyte Taiwan Co., Ltd. Fortune Electric 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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities				Fu Tsu Construction Co., Ltd. Hantech Engineering Co., Ltd. Hsieh Kun Co., Ltd. Hueng Luei Process Industry Co., Ltd. Ingersoll-Rand Southeast Asia (Pre) 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. Kedje Construction Co., Ltd. Kinetics Technology Corporation L&K Engineering Co., Ltd. Lead-Fu Industrials Corporation Mandartech Interiors Inc. Marktech International Corp. Mega Union Technology Incorporated Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation San Fu Chemical Co., Ltd. Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. TASA Construction Corporation Techgo Industrial Co., Ltd. Trusval Technology Co., Ltd.								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities	May 12, 2020 (Note 1)	\$ 66,600,000 (Note 1)	Based on the terms in the purchase order	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 Wholtech System Hitech Limited Yang Lung-Shih Architect & Associates Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp. 84 counterparties (Note 1), 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.	-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities				<p>Cica-Huntek Chemical Technology Taiwan Co., Ltd.</p> <p>Confederate Technology Co., Ltd.</p> <p>Da-Cin Construction Co., Ltd.</p> <p>Desiccant Technology Corporation</p> <p>Evergreen Steel Corporation</p> <p>Exyte Taiwan Co., Ltd.</p> <p>Fortune Electric Co., Ltd.</p> <p>Fu Tsu Construction Co., Ltd.</p> <p>Hantech Engineering Co., Ltd.</p> <p>Hsieh Kun Co., Ltd.</p> <p>Hueng Luei Process Industry Co., Ltd.</p> <p>Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore)</p> <p>J.C. Yang Architect and Associates</p> <p>JG Environmental Technology Co., Ltd.</p> <p>JJmr-Clean-Air Solution Tech.Services Co., Ltd.</p> <p>Jusun Instruments Co., Ltd.</p> <p>Kedge Construction Co., Ltd.</p> <p>Kinetics Technology Corporation</p> <p>L&K Engineering Co., Ltd.</p> <p>Lead-Fu Industrials Corporation</p> <p>Lee Ming Construction Co., Ltd.</p> <p>Li Jin Engineering Co., Ltd.</p> <p>Mandartech Interiors Inc.</p> <p>Marketch International Corp.</p> <p>Mega Union Technology Incorporated</p> <p>Obayashi Corporation</p> <p>Organo Technology Co., Ltd.</p> <p>Ovivo Taiwan Co., Ltd.</p>								

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities				<p>Pan Asia (Engineers & Constructors) Corporation San Fu Chemical Co., Ltd. San Min Construction Development Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. 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 Wholtech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp.</p>								
TSMC	Fab construction & installation of fab facilities	August 11, 2020 (Note 2)	\$ 57,700,000 (Note 2)	Based on the terms in the purchase order	102 counterparties (Note 2), including: ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd.	-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms		
							Owner	Relationships	Transfer Date	Amount					
TSMC	Fab construction & installation of fab facilities				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. 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.										

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms		
							Owner	Relationships	Transfer Date	Amount					
TSMC	Fab construction & installation of fab facilities				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 Obayashi Corporation Optimax Technology Corporation Organo Technology Co., Ltd. Ovivo Taiwan Co., Ltd. Pan Asia (Engineers & Constructors) Corporation San Fu Chemical Co., Ltd. San Min Construction Development Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Swift Engineering Co., Ltd. Taiwan Gleno Enterprise Co., Ltd. Taiwan Puritic Corp. 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.										

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Fab construction & installation of fab facilities				Versum Materials Taiwan Co., Ltd. Weltall Technology Corporation Wholtech System Hitech Limited Yangtech Engineering Co., Ltd. Yankey Engineering Co., Ltd. Ying Pao Technology Inc. Zhao-Cheng Corp. E-Ton Solar Tech Co., LTD	-	N/A	N/A	N/A				
TSMC	Buildings and facilities	August 20, 2020	\$ 860,000	Based on the terms in the purchase order	99 counterparties (Note2), including : ABB Ltd. Accudevice Co., Ltd. Air Liquide Far Eastern Ltd. Allis Electric Co., Ltd. Am-Power Machine International Enterprise Co., Ltd. Arizona State Land Department Atlas Copco Taiwan Ltd. Atlas Technology Corp. Capital Machinery Limited Central Taiwan Science Park Bureau, Ministry of Science and Technology 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.	-	N/A	N/A	N/A	Price comparison and price negotiation Price comparison and price negotiation	Manufacturing purpose Manufacturing purpose	None None	
	Real estate	November 10, 2020 (Note2)	229,600,000 (Note 2)	Based on the terms in the purchase order									

(Continued)

Company Name	Types of Property	Transaction Date	Transaction Amount (Foreign Currencies in Thousands)	Payment Term	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				<p>Cica-Huntek Chemical Technology Taiwan Co., Ltd.</p> <p>Confederate Technology Co., Ltd.</p> <p>Da-Cin Construction Co., Ltd.</p> <p>Desiccant Technology Corporation</p> <p>Evergreen Steel Corporation</p> <p>Exyte Taiwan Co., Ltd.</p> <p>Fortune Electric Co., Ltd.</p> <p>Fu Tsu Construction Co., Ltd.</p> <p>Hantech Engineering Co., Ltd.</p> <p>Hsieh Kun Co., Ltd.</p> <p>Hueng Luei Process Industry Co., Ltd.</p> <p>Ingersoll-Rand Southeast Asia (Pte) Ltd. Taiwan Branch (Singapore)</p> <p>J.C. Yang Architect and Associates</p> <p>JG Environmental Technology Co., Ltd.</p> <p>Jjmr-Clean-Air Solution Tech.Services Co., Ltd.</p> <p>Jusun Instruments Co., Ltd.</p> <p>Kedge Construction Co., Ltd.</p> <p>Kinetics Technology Corporation</p> <p>L&K Engineering Co., Ltd.</p> <p>Lead-Fu Industrials Corporation</p> <p>Lee Ming Construction Co., Ltd.</p> <p>Li Jim Engineering Co., Ltd.</p> <p>Mandartech Interiors Inc.</p> <p>Marketch International Corp.</p> <p>Mega Union Technology Incorporated</p> <p>Organo Technology Co., Ltd.</p> <p>Ovivo Taiwan Co., Ltd.</p> <p>Pan Asia (Engineers & Constructors) Corporation</p> <p>San Fu Chemical Co., Ltd.</p>	-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
TSMC	Real estate				Schneider Electric Taiwan Co., Ltd. Shihlin Electric & Engineering Corporation Siemens Limited Solomon Technology Corporation Southern Taiwan Science Park Bureau, Ministry of Science and Technology 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. Ying Pao Technology Inc. Zhao-Cheng Corp. Li Jin Engineering Co., Ltd.								
VisEra	Fab construction & installation of fab facilities	July 17, 2020	\$ 1,680,000	Based on the terms in the purchase order		-	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	Counter-party	Nature of Relationships	Prior Transaction of Related Counter-party				Price Reference	Purpose of Acquisition	Other Terms
							Owner	Relationships	Transfer Date	Amount			
VisEra	Fab construction & installation of fab facilities	December 7, 2020	\$ 1,930,000	Based on the terms in the purchase order	Acter Group Corporation Limited	-	N/A	N/A	N/A	Price comparison and price	Manufacturing purpose	None	

Note 1: The disclosures are expected information based on the capital appropriation approved by the Board of Directors. The actual information shall be subject to the final purchase order of TSMC.

Note 2: 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, 2020
(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)	
TSMC	TSMC North America	Subsidiary	Sales	\$ 824,139,751	61	Net 30 days from invoice date (Note)	-	(Note)	\$ 101,467,381	74
	GUC	Associate	Sales	5,607,239	-	Net 30 days from the end of the month of when invoice is issued	-	-	313,064	-
	TSMC China	Subsidiary	Purchases	19,971,901	19	Net 30 days from the end of the month of when invoice is issued	-	-	(1,643,070)	4
	TSMC Nanjing	Subsidiary	Purchases	16,933,672	16	Net 30 days from the end of the month of when invoice is issued	-	-	(1,889,906)	4
	WaferTech	Indirect subsidiary	Purchases	8,015,129	7	Net 30 days from the end of the month of when invoice is issued	-	-	(697,756)	2
	SSMC	Associate	Purchases	4,110,449	4	Net 30 days from the end of the month of when invoice is issued	-	-	(400,765)	1
	VIS	Associate	Purchases	3,494,631	3	Net 30 days from the end of the month of when invoice is issued	-	-	(311,406)	1
	TSMC North America	GUC	Associate of TSMC	Sales	1,572,476 (US\$ 53,406)	-	Net 30 days from invoice date	-	-	57,354 (US\$ 2,041)
VisEra Tech	Xintec	Associate of TSMC	Sales	898,091	13	Net 30 days from the end of the month of when invoice is issued	-	-	187,488	20

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, 2020

(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 TSMC Nanjing GUC	Subsidiary Subsidiary Associate	\$ 102,858,283 203,209 313,064	41 Note 2 25	- - -	- - -	\$ - - -	- - -
TSMC China	TSMC Nanjing	The same parent company	20,710,244	Note 2	-	-	-	-
	TSMC	Parent company	(RMB 4,820,484) (RMB 382,438)	28	-	-	-	-
TSMC Nanjing	TSMC	Parent company	1,889,906 (RMB 439,891)	34	-	-	-	-
VisEra Tech	Xintec	Associate of TSMC	187,488	31	-	-	-	-
TSMC Technology	TSMC	The ultimate parent of the Company	444,021 (US\$ 15,803)	Note 2	-	-	-	-
WaterTech	TSMC	The ultimate parent of the Company	697,756 (US\$ 24,834)	41	-	-	-	-
	TSMC Development	Parent company	103,033 (US\$ 3,667)	Note 2	-	-	-	-

Note 1: The calculation of turnover days excludes other receivables from related parties.

Note 2: The ending balance is primarily consisted of other receivables, which is not applicable for the calculation of turnover days.

TABLE 8

Taiwan Semiconductor Manufacturing Company Limited and Investees

NAMES, LOCATIONS, AND RELATED INFORMATION OF INVESTEE OVER WHICH THE COMPANY EXERCISES SIGNIFICANT INFLUENCE (EXCLUDING INFORMATION ON INVESTMENT IN MAINLAND CHINA) FOR THE YEAR ENDED DECEMBER 31, 2020
(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, 2020	Percentage of Ownership	Carrying Value (Foreign Currencies in Thousands)	Net Income (Losses) of the Investee (Foreign Currencies in Thousands)	Share of Profits/Losses of Investee (Foreign Currencies in Thousands)	Note
TSMC	TSMC Global TSMC Partners	Tortola, British Virgin Islands Tortola, British Virgin Islands	Investment activities Investing in companies involved in the design, manufacture, and other related business in the semiconductor industry and other investment activities	December 31, 2020 (Foreign Currencies in Thousands)	Shares (In Thousands)	100	\$ 382,229,039	\$ 7,668,014	7,668,014	Subsidiary
				December 31, 2019 (Foreign Currencies in Thousands)	988,268	100	52,649,936	2,273,717	2,273,717	Subsidiary
	VIS	Hsin-Chu, Taiwan	Manufacturing, selling, packaging, testing and computer-aided design of integrated circuits and other semiconductor devices and the manufacturing and design service of masks	10,180,677	464,223	28	9,029,890	6,305,519	1,780,829	Associate
	VisEra Tech	Hsin-Chu, Taiwan	Engaged in manufacturing electronic spare parts and in researching, developing, designing, manufacturing, selling, packaging and testing of color filter	5,005,171	253,120	87	6,363,099	2,090,545	1,817,520	Subsidiary
	SSMC	Singapore	Manufacturing and selling of integrated circuits and other semiconductor devices	5,120,028	314	39	5,900,245	2,106,093	816,954	Associate
	TSMC North America	San Jose, California, U.S.A	Selling and marketing of integrated circuits and other semiconductor devices	333,718	11,000	100	4,568,059	294,316	294,316	Subsidiary
	Xineec	Taoyuan, Taiwan	Wafer level chip size packaging and wafer level post passivation interconnection service	1,988,317	111,282	41	2,554,123	1,727,445	709,125	Associate
	GUC	Hsin-Chu, Taiwan	Researching, developing, manufacturing, testing and marketing of integrated circuits	386,568	46,688	35	1,328,620	850,007	296,142	Associate
	TSMC Arizona	Phoenix, Arizona, U.S.A.	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	855,599	30	100	842,745	(196)	(196)	Subsidiary
	TSMC Europe	Amsterdam, the Netherlands	Customer service and supporting activities	15,749	-	100	537,737	60,142	60,142	Subsidiary
	TSMC JDC	Yokohama, Japan	Engineering support activities	302,560	11	100	292,266	(8,070)	(8,070)	Subsidiary
	VTAF III	Cayman Islands	Investing in new start-up technology companies	1,318,846	1,318,846	98	214,881	(14,453)	(14,163)	Subsidiary
	TSMC Japan	Yokohama, Japan	Customer service and supporting activities	83,760	6	100	144,784	3,361	3,361	Subsidiary
	VTAF II	Cayman Islands	Investing in new start-up technology companies	260,300	260,300	98	82,441	(2,066)	(2,024)	Subsidiary
	TSMC Korea	Seoul, Korea	Customer service and supporting activities	13,656	13,656	100	42,395	1,598	1,598	Subsidiary
TSMC Partners	TSMC Development	Delaware, U.S.A	Investing in companies involved in the manufacturing related business in the semiconductor industry	December 31, 2020 (US\$ 586,939)	29,493,929	100	(US\$1,049,718)	1,626,764	Note 2	Subsidiary
				December 31, 2019 (US\$ 586,939)	(US\$ 586,939)	100	(US\$ 55,150)	55,150	55,150	Subsidiary
				401,282	769,414	100	(US\$ 27,384)	147,271	Note 2	Subsidiary
	TSMC Technology	Delaware, U.S.A	Engineering support activities	14,282	-	100	256,777	(5,024)	5,024	Subsidiary
	TSMC Canada	Ontario, Canada	Engineering support activities	64,623	2,300	100	(US\$ 9,139)	27,379	Note 2	Subsidiary
VTAF III	Growth Fund	Cayman Islands	Investing in new start-up technology companies	December 31, 2020 (US\$ 2,504)	70,348	100	123,940	(1,280)	Note 2	Subsidiary
				December 31, 2019 (US\$ 2,504)	2,504	100	(US\$ 4,411)	(43)	(43)	Subsidiary
	Mutual-Pak	New Taipei, Taiwan	Manufacturing of electronic parts, wholesaling and retailing of electronic materials, and researching, developing and testing of RFID	44,768	4,693	28	28,183	(36,461)	Note 2	Associate
	WaterTech	Washington, U.S.A	Manufacturing, selling and testing of integrated circuits and other semiconductor devices	1,593	293,637	100	(US\$ 1,003)	(US\$ 1,209)	Note 2	Subsidiary
TSMC Development				-	-		4,610,909	1,394,261	Note 2	Subsidiary
				-	(US\$ 164,107)		(US\$ 47,293)	(US\$ 47,293)		

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.

Taiwan Semiconductor Manufacturing Company Limited and Investees

INFORMATION ON INVESTMENT IN MAINLAND CHINA
FOR YEAR ENDED DECEMBER 31, 2020

(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, 2020 (US\$ in Thousands)	Investment Flows		Accumulated Outflow of Investment from Taiwan as of December 31, 2020 (US\$ in Thousands)	Net Income (Losses) of the Investee Company	Percentage of Ownership	Share of Profits/Losses	Carrying Amount as of December 31, 2020	Accumulated Inward Remittance of Earnings as of December 31, 2020
					Outflow (US\$ in Thousands)	Inflow						
TSMC China	Manufacturing, selling, 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)	\$ 7,200,634	100%	\$ 6,999,772 (Note 2)	\$ 64,243,766	\$ -
TSMC Nanjing	Manufacturing, selling, 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)	12,143,866	100%	12,205,157 (Note 2)	33,573,482	-

Accumulated Investment in Mainland China as of December 31, 2020 (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)	\$ 1,110,373,199 (Note 3)

Note 1: TSMC directly invested US\$596,000 thousand in TSMC China and US\$1,000,000 thousands in TSMC Nanjing.

Note 2: Amount was recognized based on the audited financial statements.

Note 3: The upper limit on investment in mainland China is determined by sixty percent (60%) of the Company's consolidated net worth.

TABLE 10

Taiwan Semiconductor Manufacturing Company Limited

**INFORMATION ON MAJOR SHAREHOLDERS
DECEMBER 31, 2020**

Shareholders (Note)	Shares	
	Total Shares Owned	Ownership Percentage
ADR-Taiwan Semiconductor Manufacturing Company, Ltd.	5,321,819,398	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, 2020****(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)**

Item	Description	Amount
Cash		
Petty cash		\$ 400
Cash in banks		
Checking accounts and demand deposits		29,250,907
Foreign currency deposits	Including US\$1,058,998 thousand @28.097, JPY33,254,815 thousand @0.2729 and EUR10,148 thousand @34.587	39,180,918
Time deposits	From 2020.09.03 to 2021.12.25, interest rates at 0.00%-0.80%, including NT\$205,907,397 thousand, US\$550,023 thousand @28.097 and JPY49,000,000 thousand @0.2729	<u>234,733,492</u>
Total		<u>\$ 303,165,717</u>

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF NOTES AND ACCOUNTS RECEIVABLE, NET

DECEMBER 31, 2020

(In Thousands of New Taiwan Dollars)

Client Name	Amount
Client A	\$ 7,081,325
Client B	3,122,124
Client C	3,032,759
Client D	2,773,917
Others (Note)	<u>18,844,700</u>
	34,854,825
Less: Loss allowance	<u>(243,710)</u>
Total	<u>\$ 34,611,115</u>

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, 2020

(In Thousands of New Taiwan Dollars)

Client Name	Amount
TSMC North America	\$ 101,467,381
Others (Note)	<u>313,793</u>
Total	<u>\$ 101,781,174</u>

Note: The amount of individual client included in others does not exceed 5% of the account balance.

STATEMENT 4**Taiwan Semiconductor Manufacturing Company Limited****STATEMENT OF INVENTORIES****DECEMBER 31, 2020****(In Thousands of New Taiwan Dollars)**

Item	Amount	
	Cost	Net Realizable Value
Finished goods	\$ 21,338,980	\$ 50,098,692
Work in process	88,575,222	350,472,186
Raw materials	13,758,417	12,962,429
Supplies and spare parts	<u>6,625,417</u>	<u>6,759,866</u>
Total	<u>\$ 130,298,036</u>	<u>\$ 420,293,173</u>

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGES IN INVESTMENTS ACCOUNTED FOR USING EQUITY METHOD

FOR THE YEAR ENDED DECEMBER 31, 2020

(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)

Investees	Balance, January 1, 2020		Additions in Investment		Decrease in Investment		Increase (Decrease) in Using the Equity Method		Balance, December 31, 2020		Market Value or Net Assets Value		Collateral	
	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Shares (In Thousands)	Amount	Amount	Amount	Shares (In Thousands)	%	Amount	Unit Price (NT\$)		Total Amount
Stocks														
TSMC Global	11	\$ 397,737,270	-	\$ -	-	\$ -	\$(15,508,231)	11	100	\$ 382,229,039	\$ -	\$ 382,229,039	Nil	
TSMC Partners	988,268	53,388,267	-	-	-	-	(738,331)	988,268	100	52,649,936	-	52,649,936	Nil	
VIS	464,223	9,027,572	-	-	-	-	2,318	464,223	28	9,029,890	116 (Note 1)	53,849,925	Nil	
VisEra Tech	253,120	4,541,741	-	-	-	-	1,821,358	253,120	87	6,363,099	-	6,331,697	Nil	
SSMC	314	6,502,174	-	-	-	-	(601,929)	314	39	5,900,245	-	5,692,841	Nil	
TSMC North America	11,000	4,569,825	-	-	-	-	(1,766)	11,000	100	4,568,059	-	4,568,059	Nil	
Xintec	111,282	1,846,145	-	-	-	-	707,978	111,282	41	2,554,123	184 (Note 1)	20,420,233	Nil	
GUC	46,688	1,284,377	-	-	-	-	44,243	46,688	35	1,328,620	339 (Note 1)	15,827,184	Nil	
TSMC Arizona	-	-	30	855,599	-	-	(12,854)	30	100	842,745	-	842,745	Nil	
TSMC Europe	-	462,479	-	-	-	-	75,258	-	100	537,737	-	537,737	Nil	
TSMC JDC	-	-	11	302,560	-	-	(10,294)	11	100	292,266	-	292,266	Nil	
TSMC Japan	6	142,620	-	-	-	-	2,164	6	100	144,784	-	144,784	Nil	
TSMC Korea	80	40,727	-	-	-	-	1,668	80	100	42,395	-	42,395	Nil	
Subtotal		479,543,197		1,158,159		-	(14,218,418)			466,482,938		543,471,763		
Capital														
TSMC China	-	57,289,154	-	-	-	-	6,954,612	-	100	64,243,766	-	64,492,719	Nil	
TSMC Nanjing	-	21,364,939	-	-	-	-	12,208,543	-	100	33,573,482	-	33,587,786	Nil	
VTAF III	-	231,504	-	-	-	-	(16,623)	-	98	214,881	-	191,606	Nil	
VTAF II	-	75,095	-	-	-	-	7,346	-	98	82,441	-	76,195	Nil	
Subtotal		78,960,692		-		-	19,153,878			98,114,570		98,348,306		
Total		\$ 558,503,889		\$ 1,158,159		\$ -	\$ 4,935,460			\$ 564,597,508		\$ 641,820,069		

Note 1: : The unit price is calculated by closing price of the Taipei Exchange or the TWSE as of December 31, 2020.

Note 2: : Mainly including share of profit or loss of subsidiaries and associates, share of other comprehensive income of subsidiaries and associates, cash dividends received from subsidiaries and associates, etc.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF CHANGE IN RIGHT-OF-USE ASSETS
FOR THE YEAR ENDED DECEMBER 31, 2020

(In Thousands of New Taiwan Dollars)

Item	Land	Buildings	Machinery and Equipment	Office Equipment	Total	Remark
Cost						
Balance at January 1, 2020	\$ 14,768,551	\$ 508,709	\$ 1,939,524	\$ 30,564	\$ 17,247,348	
Additions	12,518,687	19,564	-	20,543	12,558,794	
Deductions	(186,988)	(7,878)	(1,939,524)	(9,328)	(2,143,718)	
Balance at December 31, 2020	<u>\$ 27,100,250</u>	<u>\$ 520,395</u>	<u>\$ -</u>	<u>\$ 41,779</u>	<u>\$ 27,662,424</u>	
Accumulated depreciation						
Balance at January 1, 2020	\$ 938,352	\$ 105,873	\$ 1,163,715	\$ 9,388	\$ 2,217,328	
Additions	1,298,315	131,436	775,809	13,612	2,219,172	
Deductions	(11,007)	-	(1,939,524)	(8,372)	(1,958,903)	
Balance at December 31, 2020	<u>\$ 2,225,660</u>	<u>\$ 237,309</u>	<u>\$ -</u>	<u>\$ 14,628</u>	<u>\$ 2,477,597</u>	
Carrying amounts at December 31, 2020	<u>\$ 24,874,590</u>	<u>\$ 283,086</u>	<u>\$ -</u>	<u>\$ 27,151</u>	<u>\$ 25,184,827</u>	

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF SHORT-TERM LOANS
DECEMBER 31, 2020
(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	\$ 88,559,026	2020.09.24-2021.02.26	(0.54)-0.33	USD 3,400,000 EUR 1,000,000	Nil	-
Related parties TSMC Global	<u>87,100,700</u>	2019.07.18-2022.07.17	-	USD 3,100,000	Nil	Note
Total	<u>\$ 175,659,726</u>					

Note: The loan are repayable on related parties' demand.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCOUNTS PAYABLES

DECEMBER 31, 2020

(In Thousands of New Taiwan Dollars)

Accounts payables was NT\$36,238,637 thousand. 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, 2020****(In Thousands of New Taiwan Dollars)**

Vendor Name	Amount
TSMC Nanjing	\$ 1,889,906
TSMC China	1,643,070
Xintec	1,358,624
WaferTech	697,756
TSMC Technology, Inc.	444,021
SSMC	400,765
Others (Note)	<u>583,481</u>
Total	<u>\$ 7,017,623</u>

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, 2020****(In Thousands of New Taiwan Dollars)**

Vendor Name	Amount
Vendor A	\$ 54,343,056
Vendor B	20,368,832
Vendor C	11,972,002
Vendor D	10,478,183
Others (Note)	<u>59,180,384</u>
Total	<u>\$ 156,342,457</u>

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, 2020

(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	0.48-0.94	\$ 19,550,141
Buildings	Mainly for the use of offices	2 to 6 years	0.54-0.71	281,676
Office equipment	For operation use	2 to 3 years	0.28-0.71	<u>27,391</u>
				19,859,208
Less: Current portion				<u>(1,379,097)</u>
Noncurrent portion				<u>\$ 18,480,111</u>

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF ACCRUED EXPENSES AND OTHER CURRENT LIABILITIES

DECEMBER 31, 2020

(In Thousands of New Taiwan Dollars)

Item	Amount
Refund liability	\$ 30,995,223
Contract liabilities	9,365,661
Utilities	3,408,672
Others (Note)	<u>23,118,681</u>
Total	<u>\$ 66,888,237</u>

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, 2020
(In Thousands of New Taiwan Dollars)

Bonds Name	Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Total Amount	Repayment paid	Amount			Collateral	
							Balance, End of Year	Premiums (Discounts)	Carrying Value		Unamortized Repayment
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	Taipei Fubon Commercial Bank Co., Ltd.	2013.01.04	On 01.04 annually	1.35	10,000,000	10,000,000	-	-	-	Bullet repayment	Nil
-B	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
-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	Taipei Fubon Commercial Bank Co., Ltd.	2013.02.06	On 02.06 annually	1.38	11,600,000	11,600,000	-	-	-	Bullet repayment	Nil
-B	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
-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	Taipei Fubon Commercial Bank Co., Ltd.	2013.07.16	On 07.16 annually	1.50	10,200,000	10,200,000	-	-	-	Bullet repayment	Nil
-A	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
-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	Taipei Fubon Commercial Bank Co., Ltd.	2013.09.25	On 09.25 annually	1.85	2,600,000	-	2,600,000	-	2,600,000	Bullet repayment	Nil
-D	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
-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	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.58	3,000,000	-	3,000,000	(2,641)	2,997,359	Bullet repayment	Nil
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.03.23	On 03.23 annually	0.62	10,500,000	-	10,500,000	(9,721)	10,490,279	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	(10,079)	10,489,921	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	(10,079)	10,489,921	Bullet repayment	Nil
Domestic unsecured bonds-109-2	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.52	5,900,000	-	5,900,000	(5,196)	5,894,804	Bullet repayment	Nil
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.04.15	On 04.15 annually	0.58	10,400,000	-	10,400,000	(9,586)	10,390,414	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	(9,586)	10,390,414	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	(5,054)	5,294,946	Bullet repayment	Nil
Domestic unsecured bonds-109-3	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.55	4,500,000	-	4,500,000	(4,148)	4,495,852	Bullet repayment	Nil
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.05.29	On 05.29 annually	0.60	7,500,000	-	7,500,000	(7,172)	7,492,828	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	(7,172)	7,492,828	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	(2,363)	2,397,637	Bullet repayment	Nil
Domestic unsecured bonds-109-4	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.58	5,700,000	-	5,700,000	(5,347)	5,694,653	Two equal installments in last two years	Nil
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.07.14	On 07.14 annually	0.65	6,300,000	-	6,300,000	(6,119)	6,293,881	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	(6,119)	6,293,881	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	(1,894)	1,898,106	Two equal installments in last two years	Nil
Domestic unsecured bonds-109-5	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.50	4,800,000	-	4,800,000	(4,635)	4,795,365	Two equal installments in last two years	Nil
-A	Taipei Fubon Commercial Bank Co., Ltd.	2020.09.03	On 09.03 annually	0.58	8,000,000	-	8,000,000	(7,905)	7,992,095	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	(7,905)	7,992,095	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	(2,817)	2,797,183	Two equal installments in last two years	Nil

Bonds Name	Trustee	Issuance Date	Interest Payment Date	Coupon Rate (%)	Total Amount	Repayment paid	Balance, End of Year	Premiums (Discounts)	Carrying Value	Unamortized	
										Repayment	Collateral
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	\$ (1,779)	\$ 1,598,221	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	(6,249)	5,593,751	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	(5,378)	4,794,622	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	(1,965)	1,898,035	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	(10,530)	10,189,470	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	(6,611)	6,393,389	Two equal installments in last two years	Nil
Domestic bonds-109-1	US\$ unsecured Mega International Commercial Bank Co., Ltd.	2020.09.22	On 09.22 annually	2.70	28,097,000	-	28,097,000	(29,066)	28,067,934	Bullet repayment (callable on the 5th anniversary of the issue date and every anniversary thereafter)	Nil
TOTAL					\$204,997,000	\$ 31,800,000	\$ 173,197,000	\$ (146,255)	173,050,745		
Less: current portion									(2,600,000)		
									\$ 170,450,745		

(Concluded)

Taiwan Semiconductor Manufacturing Company Limited

**STATEMENT OF NET REVENUE
FOR THE YEAR ENDED DECEMBER 31, 2020
(In Thousands of New Taiwan Dollars, Unless Specified Otherwise)**

Item	Shipments (Piece) (Note)	Amount
Wafer	12,330,845	\$ 1,161,829,728
Other		<u>152,963,285</u>
Net revenue		<u>\$ 1,314,793,013</u>

Note: 12-inch equivalent wafers.

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF COST OF REVENUE FOR THE YEAR ENDED DECEMBER 31, 2020 (In Thousands of New Taiwan Dollars)

Item	Amount
Raw materials used	
Balance, beginning of year	\$ 15,046,116
Raw material purchased	52,544,726
Raw materials, end of year	(13,758,417)
Transferred to manufacturing or operating expenses	(8,754,326)
Others	<u>(229,837)</u>
Subtotal	44,848,262
Direct labor	16,052,096
Manufacturing expenses	<u>598,258,250</u>
Manufacturing cost	659,158,608
Work in process, beginning of year	49,268,466
Work in process, end of year	(88,575,222)
Transferred to manufacturing or operating expenses	<u>(31,212,918)</u>
Cost of finished goods	588,638,934
Finished goods, beginning of year	8,533,179
Finished goods purchased	55,090,585
Finished goods, end of year	(21,338,980)
Transferred to manufacturing or operating expenses	(15,849,741)
Scrapped	<u>(389,449)</u>
Subtotal	614,684,528
Others	<u>18,088,080</u>
Total	<u>\$ 632,772,608</u>

Taiwan Semiconductor Manufacturing Company Limited

STATEMENT OF OPERATING EXPENSES FOR THE YEAR ENDED DECEMBER 31, 2020 (In Thousands of New Taiwan Dollars)

Item	Research and Development Expenses	General and Administrative Expenses	Marketing Expenses
Payroll and related expense	\$ 37,368,383	\$ 9,657,107	\$ 2,912,623
Consumables	29,818,550	241,693	429
Depreciation expense	23,236,302	1,312,862	36,464
Repair and maintenance expense	5,167,078	1,364,661	3,666
Management fees of the Science Park Administration	-	2,433,954	-
Patents	-	2,008,393	-
Commission	-	-	1,209,848
Others (Note)	<u>13,023,476</u>	<u>9,293,615</u>	<u>196,406</u>
Total	<u>\$ 108,613,789</u>	<u>\$ 26,312,285</u>	<u>\$ 4,359,436</u>

Note: The amount of each item in others does not exceed 5% of the account balance.



**Taiwan Semiconductor
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Taiwan Semiconductor Manufacturing Company, Ltd.



Mark Liu, Chairman