TSMC 2018
Business Overview

Taiwan Semiconductor Manufacturing Company, Ltd.
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Vision, Mission & Core Values

**TSMC’s Vision**
Our vision is to be the most advanced and largest technology and foundry services provider to fabless companies and IDMs, and in partnership with them, to forge a powerful competitive force in the semiconductor industry.

To realize our vision, we must have a trinity of strengths:

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

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

**TSMC’s Core Values**

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

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

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

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

2018 was a year of important milestones for TSMC. 2018 was our seventh consecutive year of record revenue, net income and earnings per share. We ramped our 7-nanometer technology to high volume successfully, at least a full year ahead of any other semiconductor player. We have strong customer engagement and tape out activity across diversified applications. For the first time in history, a most advanced logic technology, as an open platform, was available for the whole semiconductor industry. With the strongest technology portfolio, the widest coverage of customers and the largest addressable market, we are poised in a better position than ever to catch the future growth opportunities for TSMC.

In today’s world, we see digital computation becoming increasingly ubiquitous. We see massive devices being connected, generating higher volumes of data. We see many new applications and products are all embedded with AI (artificial intelligence). Semiconductors are becoming ever more pervasive. The need for higher performance, lower power and a greater degree of system integration will drive further product advancements that TSMC will help enable.

The rapid ramp up of our 7-nanometer technology in 2018 allowed us to capture all leading smartphone launches and many more mobile and high performance computing applications. In 2018, our second generation 7-nanometer technology (N7+) entered risk production and is scheduled for volume production in 2019. N7+ will be the industry’s first commercially available EUV (extreme ultraviolet) process technology. At the same time, we continue our advanced technology development on 5-nanometer and target for volume production in the first half of 2020. Our advanced packaging solutions, with follow-on generations of InFO (Integrated Fan-Out) and CoWoS® (Chip on Wafer on Substrate), continue to lead the industry in providing the most advanced system-level solutions.

Highlights of TSMC’s accomplishments in 2018:

- Total wafer shipments increased 2.9 percent from 2017 to reach 10.8 million 12-inch equivalent wafers.
- Advanced technologies (28-nanometer and beyond) accounted for 63 percent of total wafer revenue, up from 58 percent in 2017.
- We deployed 261 distinct process technologies, and manufactured 10,436 products for 481 customers.
- TSMC’s market share in the total semiconductor foundry segment rose successively during the last nine years and reached 56 percent in 2018.
2018 Financial Performance

Consolidated revenue reached NT$1,031.47 billion, an increase of 5.5 percent over NT$977.45 billion in 2017. Net income was NT$351.13 billion and diluted earnings per share were NT$13.54. Both increased 2.3 percent from the 2017 level of NT$343.11 billion net income and NT$13.23 diluted EPS.

TSMC generated net income of US$11.64 billion on consolidated revenue of US$34.20 billion, which increased 3.3 percent and 6.5 percent respectively from the 2017 level of US$11.27 billion net income and US$32.11 billion consolidated revenue.

Gross profit margin was 48.3 percent compared with 50.6 percent in 2017, while operating profit margin was 37.2 percent compared with 39.4 percent a year earlier. Net profit margin was 34.0 percent, a decrease of 1.1 percentage points from 2017’s 35.1 percent.

TSMC further raised its cash dividend payment to NT$8.0 per share for 2017 profit distribution from NT$7.0 in the prior year.

Technological Developments

In 2018, we continued to increase our R&D investment to US$2.85 billion to expand our technology offerings and to extend our technology leadership.

We leveraged our leadership in technology at 28-nanometer and developed 22-nanometer technologies to further enhance performance and density in 2018. Our 22ULP (ultra-low power) and 22ULL (ultra-low leakage) technologies are suitable for a wide range of applications in IoT (Internet of Things), RF (Radio Frequency) and wearable devices. We also extended our 16-nanometer technologies to 12FFC, which provides further enhancement in power, performance, and density. On specialty technologies, 16FFC RF has proven to be able to provide the foundry’s first volume produced 5G mobile network chips based on FinFET in 2018.

In 2018, we successfully ramped up our 7-nanometer technology and set a new industry record in production ramp. More than 40 customer product tape-outs have been completed and we expect to receive more than 100 additional product tape-outs in 2019. The 7nm customer products include mobile devices, game consoles, AI, CPUs, GPUs and networking devices. Our second generation 7nm (N7+) technology entered risk production in August 2018, and will be the industry’s first commercially available EUV process technology.

Our 5-nanometer technology development is well on-track for risk production in the second quarter of 2019. We have made significant progress in transistor and interconnect performance, yield learning and reliability qualification. Customer product tape-outs are scheduled in the first half of 2019, with volume production next year. We expect to see a significant number of customers leverage our 5-nanometer to establish leadership positions for their products. Furthermore, our 3-nanometer technology has entered the full development stage.

TSMC has been offering advanced packaging technology to integrate advanced SoCs, high bandwidth memories, and integrated passive device to enhance system-level performance. In 2018, we offered the 4th generation InFO solutions with finer interconnect line width and spacing to enable both mobile and high performance computing products. TSMC’s CoWoS® offers a platform for heterogeneous integration with increasing interposer sizes. In May 2018, we announced TSMC-SolIC™ (System-on-Integrated Chips) solution, a clear industry-leading 3D IC packaging solution, integrating multiple heterogeneous chiplets with close proximity to deliver even higher system performance.

TSMC’s ecosystem, the Open Innovation Platform®, is an important factor in empowering customers to unleash their innovations with fast time-to-market. In October 2018, we launched our virtual design environment (VDE) that allows our customers to conduct their design activities in a secure and safe cloud environment that significantly increases their design productivity. We continued to work with our ecosystem partners to expand our libraries and silicon IP portfolio to more than 20,000 items. More than 9,000 technology files and over 300 process design kits are available to customers via TSMC-Online which saw more than 100,000 customer downloads in 2018.

Corporate Developments

After having led the company for over 31 years, TSMC’s Founder, Dr. Morris Chang, retired from the Company after the Annual Shareholders’ Meeting on June 5, 2018. At the meeting, TSMC shareholders elected a new Board of Directors, which then convened to elect Dr. Mark Liu as Chairman and Dr. C.C. Wei as Chief Executive Officer (CEO) and Vice Chairman.

Honors and Awards

TSMC received recognition for achievements in innovation, business information disclosure, corporate governance, sustainability, investor relations and overall excellence in management from organizations including Forbes, Fortune Magazine, CommonWealth Magazine, The Nikkei, Thomson Reuters, PricewaterhouseCoopers, RobecoSAM and the Taiwan Stock Exchange. TSMC continued to receive multiple awards from Institutional Investor Magazine and IR Magazine. We were chosen once again as a component of the Dow Jones Sustainability Indices, becoming the only semiconductor company to...
be selected for 18 consecutive years. TSMC was also rated “Prime” by Institutional Shareholder Services, and “Leader” by Sustainalytics for our performance in sustainability. Meanwhile, we remained a major component in both MSCI ESG and FTSE4Good Emerging Index, reflecting our ongoing commitment to sustainability and corporate social responsibility.

Outlook

2019 is a year we face business headwinds from weakening global macroeconomic conditions and trade tensions between countries. TSMC will be working on the fundamentals of our business and will accelerate our technology differentiation. We will also strengthen our cybersecurity and proprietary information protection. When the clouds pass, we resolve to emerge as a stronger semiconductor force.

We believe the ongoing megatrend of 5G and AI will fuel the future growth of the semiconductor industry. With the broadest and most advanced technology portfolios, the relentless pursuit of manufacturing excellence and trusted customer relationships, TSMC is best-positioned to lead the industry to provide the most advanced and comprehensive solutions for future applications in the semiconductor sector.

TSMC’s four core values of Integrity, Commitment, Innovation and Customer Trust remain as the cornerstone of our Company culture. They will continue to guide our every aspect in the way we do business as we navigate towards future opportunities. We will continue to commit to world-class governance, sustainability, and good returns to our shareholders. We thank you for your trust and commitment to us, and look forward to a long and profitable future together.
### 7nm Technology Highlights

7nm FinFET technology entered volume production in the second quarter of 2018. Customer adoption was strong and with more than 40 product tape-outs received by the end of 2018. It also set a new Company record in terms of production ramp-up speed. In addition, 7nm FinFET Plus (N7+) entered volume production in the first half of 2019, making it the first commercially available EUV-enabled foundry process technology in the world. Compared to 7nm FinFET technology, N7+ offers approximately 20% greater logic density and 10% power reduction.

### Specialty Technology Highlights

16FFC RF led the foundry segment with volume production of fifth generation (5G) mobile network chips for customers in the first half of 2018. This technology has been extended to the next generation Wireless Local Area Network (WLAN 802.11ax) and Millimeter Wave (mmWave) applications, as well as to wireless connectivity applications such as smartphones using 5G mobile networks.

22nm ultra-low leakage (22ULL) technology development entered risk production in fourth quarter of 2018 as planned. It supports IoT and wearable devices applications with lower power consumption. In addition, 22nm ultra-low power (22ULP) technology completed all process qualifications in the fourth quarter of 2018 and provides 10% area reduction with more than 30% speed gain or more than 30% power reduction versus TSMC’s 28HPC technology for applications including image processing and digital TVs.

### Advanced Packaging Highlights

InFO-PoP (Integrated Fan-Out Package-on-Package) technology, which integrates 7nm SoC (System-on-Chip) and DRAM (dynamic random access memory) for advanced mobile device applications, began volume production in the second quarter of 2018. In addition, InFO-oS (Integrated Fan-Out on Substrate) technology integrating multiple 16nm SoC chips began production in the first quarter of 2018.

CoWoS® (Chip on Wafer on Substrate) technology saw the successful technology qualification of heterogeneous integration of integration of a 7nm SoC with second-generation high bandwidth memory (HBM2). Production began in the second half of 2018 for high performance computing applications.

### Financial Highlights

Since becoming a publicly listed company in 1994, TSMC has consistently delivered value to shareholders, maintained a strong balance sheet, and kept one of the highest credit ratings not only among all Taiwan companies but also among semiconductor companies globally.

### Charts and Graphs

- **Revenue**
  - 2014: 763 billion
  - 2015: 843 billion
  - 2016: 944 billion
  - 2017: 1,031 billion
  - 2018: N/A

- **Net Income**
  - 2014: 264 billion
  - 2015: 307 billion
  - 2016: 314 billion
  - 2017: 343 billion
  - 2018: 351 billion

- **Market Capitalization – Year End**
  - 2014: 3,660 billion
  - 2015: 3,750 billion
  - 2016: 4,728 billion
  - 2017: 5,850 billion
  - 2018: N/A

- **Assets and Stockholders’ Equity – Year End**
  - Total Assets: 1,495 billion, 1,046 billion, 1,658 billion, 1,223 billion, 1,886 billion
  - Stockholders’ Equity: 1,884 billion, 1,390 billion, 1,992 billion, 1,523 billion, 2,090 billion

- **Capital Expenditures**
  - 2014: 289 billion
  - 2015: 258 billion
  - 2016: 322 billion
  - 2017: 331 billion
  - 2018: N/A

- **R&D Expenditures**
  - 2014: 57 billion
  - 2015: 66 billion
  - 2016: 71 billion
  - 2017: 81 billion
  - 2018: N/A
3. Market Overview

TSMC is positioned in the industry as the worldwide semiconductor foundry leader for both advanced and specialty process technologies, commanding a 56% total semiconductor foundry market share in 2018. Advanced technologies (28nm and below) accounted for 63% of total wafer revenue, up from 58% in 2017.

TSMC estimates that the worldwide semiconductor market excluding memory in 2018 was US$334 billion in revenue, representing a healthy 8% year-over-year growth, after a strong year in 2017. In the foundry segment of the semiconductor industry, total wafer revenue was US$61 billion in 2018, up 6% year-over-year and slightly below the 8% growth achieved in 2017.

Back-to-back years of growth in the foundry segment were driven mainly by healthy market demand. For 2019, TSMC forecasts the total semiconductor market excluding memory growth to be flat or slightly down. Over the longer term, however, fueled by increasing semiconductor content in electronic devices, continuing market share gains by fabless companies, gradual 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 compound annual growth rate projected for the overall Semiconductor market excluding memory from 2018 through 2023.

In light of the rapid growth in the four major markets of mobile, high performance computing, automotive electronics, and the Internet of Things, as well as a shift in customer focus from process technology to product application, TSMC has constructed four different technology platforms to provide 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.

Mobile platform

TSMC offers leading process technologies such as 5nm FinFET, 7nm FinFET Plus, 7nm FinFET, 10nm FinFET, 16nm FinFET Plus (16FF+), and 20nm SoC logic process technologies, as well as comprehensive IPs for premium product applications to further enhance chip performance, reduce power consumption, and decrease chip size.

Furthermore, TSMC offers the most competitive, leading-edge specialty technologies, including RF, embedded flash memory, emerging memory technologies, power management, sensors, and display chips as well as advanced packaging technologies such as the leading Integrated Fan-Out (InFO) technology.
TSMC’s Trinity of Strengths

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

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

Technology Leadership

As a semiconductor industry leader, TSMC’s technology offerings possess the breadth of specialty technologies to suit the needs of a broad array of customers, and our leading-edge technology development has the depth to give customers a head start in the next wave of fast-growing product segments as Moore’s Law continues to advance. We commit considerable resources to development has the depth to give customers a head start in the next wave of fast-growing technologies to suit the needs of a broad array of customers, and our leading-edge technology development has the depth to give customers a head start in the next wave of fast-growing product segments as Moore’s Law continues to advance. We commit considerable resources to maintain this competitive advantage in technology. In 2018, TSMC employed more than 5,609 engineers and scientists in R&D, while spending in R&D totaled approximately US$2.85 billion, or 8% of revenues.

Comprehensive Technology Portfolio

TSMC provides customers with leading process technologies such as 5nm FinFET, 7nm FinFET Plus, 7nm FinFET and 16nm FinFET, as well as comprehensive IPs including high-speed interconnect IPs, to meet customers’ high performance computing and communication requirements. TSMC also offers multiple advanced packaging technologies such as CoWoS®, InFO, and 3D IC technologies to enable homogeneous and heterogeneous chip integration to meet customers’ performance, power, and system footprint requirements. TSMC will continue to optimize its high performance computing platform offerings to help customers capture market growth driven by artificial intelligence, cloud computing, and other application innovations.

Automotive Electronics Platform

TSMC offers industry’s leading automotive technology to support three automotive industry megatrends—safety, connectivity and green. TSMC is the industry leader in providing a robust automotive IP ecosystem, which covers 16nm FinFET and extends to 7nm FinFET, for advanced driver-assistance systems (ADAS), the most computationally demanding system in the automotive industry today. In addition, TSMC’s advanced logic technologies are supported by broad and competitive specialty technologies, including 40nm embedded flash memory, 28nm and 22nm mmWave RF, high sensitivity CMOS Image/LiDAR sensors, and power management IC technologies. All these automotive technologies are applied to TSMC’s automotive process qualification standards based on AEC-Q100 standards.

Internet of Things Platform

TSMC provides an industry-leading and comprehensive ultra-low power (ULP) technology platform to support innovations for IoT and wearable applications. TSMC’s offerings, including 55nm ULP, 40nm ULP, 28nm ULP, 22nm ULP/low leakage (ULL), have been widely adopted by various IoT and wearable applications. At the same time, TSMC is extending its low-Vdd (Low Operating Voltage) offerings for extreme low-power applications. To support the ever-increasing demand in IoT edge computing and wireless connectivity, TSMC offers the most competitive and comprehensive leading-edge specialty technologies in RF, embedded flash memory, emerging memory, sensors, and display chips, as well as multiple advanced packaging technologies including InFO.
TSMC has focused its R&D efforts on enabling the Company to continually offer its customers first-to-market, leading-edge technologies and design solutions that contribute to their product success. In 2018, following the volume ramp-up of the industry leading 7nm technology, the R&D organization completed the transfer to manufacturing of the 7nm+ technology, an enhanced version of 7nm, and entered volume production in the first half of 2019. At the same time, the R&D organization continues to fuel the pipeline of technological innovation and maintains industry leadership. TSMC’s 5nm technology, the fifth generation of technology to make use of 3D FinFET transistors, entered risk production in first quarter 2019. TSMC’s 3nm technology has entered full development stage while the definition and intensive early development efforts have been progressing for nodes beyond 3nm.

In addition to CMOS logic, TSMC conducts R&D on a wide range of other semiconductor technologies that provide the functionality required by customers for mobile SoC and other applications. Highlights in 2018 include: high-volume production of Gen-3 Integrated Fan-Out Package (InFO-PoP) for mobile application processor packaging; successful qualification of Gen-4 InFO-PoP advanced packaging technology for mobile applications and Integrated Fan-Out on Substrate (InFO-os) for HPC applications; development of unique 90nm BCD (Bipolar-CMOS-DMOS) technology offering leading-edge 5-16V power devices and dense logic integration with competitive cost, as the next generation mobile Power Management IC (PMIC) solution; stable yield and reliability demonstration of 28nm node eflash for high performance mobile computing and high performance low-leakage platforms with expected technical qualification for automobile electronics and micro controller units (MCU) in 2019; mass production launch of new generation CMOS image sensors of sub-micron pixel for mobile applications and development of Ge-on-Si sensor for three dimensional range sensing applications with superior performance.

TSMC’s Technology Development team also provides customers with comprehensive design support to optimize their design productivity and reduce their cycle time, enabling their products to go from the designer’s desk to the marketplace as short a time as possible. Our design support includes design flows for electronic design automation (EDA), silicon-proven IP building blocks, process design kits (PDKs), and technology files. As of 2018, TSMC provides more than 9,000 technology files and more than 300 PDKs via TSMC-Online. Together with our third party IP partners, we offer more than 20,000 IP titles in our library, a 25% increase over 2017.

Manufacturing Excellence

As “everyone’s foundry”, TSMC served 481 active customers in 2018, and manufactured over 10,436 different products using 261 different technologies, making it the world’s most diversified and largest provider of logic IC capacity. TSMC’s unique manufacturing system is tailored to manage the diverse manufacturing requirements of each customer, product, and technology without compromising speed, precision, and flexibility to adapt to changing circumstances. At the same time, our people and systems deliver these results in the leanest and most efficient way possible to support TSMC’s profitability.

For each new technology node, TSMC has always been the first effective capacity provider in the foundry segment with the best yield and the fastest ramping speed, enabling customers’ early time to market. Recently, TSMC has focused on advancing our fab operations from “automated” to “intelligent”. We are building an infrastructure with high-performance computing capability to collect the vast amounts and wide range of data generated by our fabs, from tool tuning, to process control, to device optimization. Combined with our foundry domain knowledge, big data analytics and proprietary machine learning algorithms, we forge an intelligent manufacturing environment that helps drive productivity improvement, efficiency gains and cost reductions that leads to better overall manufacturing efficiency and engineering quality.

TSMC’s engineers are highly skilled at bringing new capacity on line, and set a new company record for the speed at which they ramped our 7nm technology. Compared with a 2017 baseline, our combined 10nm/7nm capacity doubled in 2018, and is set to triple in 2019.

Customer Trust

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

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

TSMC’s engagement with customers begins at the earliest stages of R&D to understand their technology needs, and continues through to design support, mask making, manufacturing, and packaging and testing. Along the way, customers can call on the support of a dedicated customer service team, as well as 24-hour a day, seven-day-a-week access to real-time information through TSMC-Online, a suite of web-based applications that facilitates design, engineering, and logistics collaboration. From the fundamental tenets of TSMC’s business model to the fine-grained details of doing business together, customers can be assured that TSMC is committed to winning together with them.
TSMC advocates and acts upon the principles of operational transparency and respect for shareholder rights. We believe that the basis for successful corporate governance is a sound and effective Board of Directors. In line with this principle, the TSMC Board delegates various responsibilities and authority to two Board Committees, the Audit Committee and the Compensation Committee. Each Committee has a written charter approved by the Board. Each Committee’s chairperson regularly reports to the Board on the activities and actions of the relevant committee.

Board of Directors

As of the end of 2018, TSMC’s Board of Directors consists of nine 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. Five of those nine members are Independent Directors: former British Telecommunications Chief Executive Officer, Sir Peter L. Bonfield; Co-Founder and Chairman Emeritus of the Acer Group, Mr. Stan Shih; former Texas Instruments Inc. Chairman of the Board, Mr. Thomas J. Engibous; former Chairman of the National Performing Arts Center and former Advisor of Executive Yuan, R.O.C., Ms. Kok-Choo Chen; and former Chairman of Applied Materials, Inc., Mr. Michael R. Splinter. The number of Independent Directors exceeds 50% of the total number of Directors, and two Directors are female.

Mr. Thomas J. Engibous resigned as Independent Director, Audit Committee member and Compensation Committee member of TSMC due to health reasons, effective January 1, 2019. There will be a by-election for one Independent Director at the 2019 Annual Shareholders’ Meeting. The Board has approved the nomination of Mr. Moshe N. Gavrielov as a candidate for Independent Director at its meeting in the first quarter of 2019. The number of Independent Directors will continue to exceed 50% of the total number of Directors.

Inheriting the spirit of TSMC’s Founder, Dr. Morris Chang’s philosophy on corporate governance, and 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 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 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. Each quarter, TSMC’s management reports to the Board on a variety of subjects. 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.
TSMC believes a company’s corporate social responsibility is to uplift society. The “TSMC Corporate Social Responsibility Procedure” defines TSMC’s CSR scope, the roles and responsibilities of CSR Committee members and management to fulfill the vision and carry out the mission to be a good corporate citizen.

**TSMC Corporate Social Responsibility Policy**

Since its establishment, TSMC has not only strived for the highest achievements in its core business of dedicated IC foundry services but has also actively developed positive relationships with all stakeholders including shareholders, employees, customers, suppliers, and society in general to fulfill its responsibility as a corporate citizen and to pursue a sustainable future.

**Vision**
- To Uplift Society

**Mission**
- Acting with Integrity
- Strengthening Environmental Protection
- Caring for the Disadvantaged

**Guiding Principles**

**Acting with Integrity:** TSMC believes in acting ethically, following the law, and balancing the interests of all stakeholders. The Company endeavors to use the experience of developing a sustainable business to drive the industry and supply chain into a positive cycle and to act together with them as an uplifting force in society.

Integrity is the foremost of TSMC’s four core values. Our culture of integrity is encapsulated in TSMC’s Code of Ethics and Business Conduct, which applies to the Company and its subsidiaries. The Code requires that each employee bear a heavy personal responsibility to preserve and to protect TSMC’s ethical values and reputation and to comply with various applicable laws and regulations. Not only do we provide training on the Code to incoming employees, we perform regular promotion, and offer advanced training in subjects including corruption, proprietary information protection, and insider trading. Adherence to the code is enforced through annual self-assessments, internal auditing, and a number of whistleblowing channels including the functional head of Human Resources, the corporate Vice President overseeing the Ombudsmen system, or directly to the Chairman of the Board of Directors’ Audit Committee. Externally, we require all of our suppliers, vendors, and contractors to declare in writing that they will not engage in any fraud or any unethical conduct when dealing with us, our officers, or employees.

**Strengthening Environmental Protection:** TSMC believes in doing sustainable business and practices green manufacturing and green supply chain management. The Company seeks the most efficient use of energy and resources and is committed to reducing waste and preventing pollution. TSMC actively shares its environmental experience and expertise and aims to collaborate with government, academia, and all of society to address the challenges of climate change.
TSMC has set long-term targets for water conservation, waste recycling, energy saving, and greenhouse gas emissions to minimize our environmental impact, and continues to make progress each year towards these goals.

In water conservation, we have set a goal of reducing water consumption per 8-inch equivalent layer to 30% below 2010 levels by 2020. As of 2018, we achieved a reduction of 24.7%, on track with our 2020 goal.

In waste reduction, our target is less than 0.30 kg of waste output per 8-inch equivalent layer by 2025. In 2018, we reached 0.35 kg.

In energy conservation, our plan is to accumulate more than 2.8 billion kWh in energy savings from 2016 to 2025 with new conservation measures, and by the end of 2018, we conserved approximately 900 million kWh.

In greenhouse gas emissions, our goal is to reduce emissions per 8-inch equivalent layer to 18% below 2010 levels by 2020, and we achieved a 16% reduction in 2018.

In addition, TSMC’s process technologies also contribute significantly to the development of green electronics products. We support our IC design customers in providing advanced, power efficient and ecologically sound products, such as lower-power-consumption chips for mobile devices, high-efficiency LED driver chips for flat panel display backlighting and indoor/outdoor solid state LED lighting, and “Energy Star” certified low standby AC-DC adapts chips. By leveraging TSMC’s superior energy-efficient technologies, these chips are used for supporting sustainable city infrastructure, greener vehicles, smart grids, and more.

Caring for the Disadvantaged: TSMC believes in equality, justice, and a safe and prosperous society. Through the TSMC Charity Foundation, the TSMC Education and Culture Foundation, and the TSMC i-Charity platform, TSMC hopes to provide the disadvantaged in our society with opportunities, long-term support, material aid, and emergency relief.

The TSMC Charity Foundation was established in June 2017 to coordinate the company’s numerous volunteer programs and social engagement efforts, as well as to expand the scope of charity projects. The Foundation’s projects include supporting a network of hospitals around Taiwan providing care to elderly people living alone, working with the Ministry of Education to promote the traditional Chinese value of filial piety, and coordinating the diverse volunteer work of TSMC employees.

The TSMC Education and Culture Foundation was founded in 1998 to aid the educationally disadvantaged as well as to support public engagement with arts and culture. In 2018, the foundation spent nearly NT$13 million to sponsor multiple educational programs in response to the needs of different communities, including outreach programs to address Taiwan’s urban/rural divide in education. This comes in to the existing scholarship programs, donations of education resources to schools in remote townships, and regular tours of Taiwan’s National Palace Museum for rural schoolchildren.

“TSMC i-Charity” is an interactive online platform launched in 2014 for employees to proactively take part in philanthropic activities and give back to society. This intranet platform opens a channel for TSMC employees to propose projects, share results, suggest new ideas, and donate time and money. In 2018, more than 19,000 volunteers joined projects for earthquake relief in Taiwan’s Hualien county, supported rural education initiatives, and raised NT$30 million in financial contributions.

Financial Statements
Taiwan Semiconductor Manufacturing Company Limited and Subsidiaries
Consolidated Condensed Balance Sheets
December 31, 2014 - 2018
In Millions of New Taiwan Dollars (NTD) and U.S. Dollars (USD)

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<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>USD</td>
<td>NTD</td>
<td>USD</td>
<td>NTD</td>
<td>USD</td>
</tr>
<tr>
<td>ASSETS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and Cash Equivalents</td>
<td>$18,797</td>
<td>$577,815</td>
<td>$553,392</td>
<td>$541,254</td>
<td>$562,689</td>
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<tr>
<td>Investments in Marketable Financial Instruments</td>
<td>$2,818</td>
<td>$172,367</td>
<td>$99,967</td>
<td>$90,835</td>
<td>$22,474</td>
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<tr>
<td>Accounts Receivable</td>
<td>$4,201</td>
<td>$129,198</td>
<td>$122,317</td>
<td>$129,305</td>
<td>$85,165</td>
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<tr>
<td>Inventories</td>
<td>$3,358</td>
<td>$103,231</td>
<td>$73,881</td>
<td>$48,682</td>
<td>$67,052</td>
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<tr>
<td>Other Current Assets</td>
<td>$702</td>
<td>$24,089</td>
<td>$11,646</td>
<td>$7,633</td>
<td>$7,966</td>
</tr>
<tr>
<td>Total Current Assets</td>
<td>$39,869</td>
<td>$591,668</td>
<td>$587,203</td>
<td>$517,729</td>
<td>$474,746</td>
</tr>
<tr>
<td>Non-current Assets</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Long-term Investments</td>
<td>$952</td>
<td>$29,305</td>
<td>$41,569</td>
<td>$46,154</td>
<td>$34,994</td>
</tr>
<tr>
<td>Property, Plant and Equipment</td>
<td>$34,875</td>
<td>$1,072,050</td>
<td>$1,062,545</td>
<td>$997,718</td>
<td>$833,470</td>
</tr>
<tr>
<td>Intangible and Other Non-current Assets</td>
<td>$1,207</td>
<td>$37,099</td>
<td>$20,547</td>
<td>$24,794</td>
<td>$23,020</td>
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<tr>
<td>Total Non-current Assets</td>
<td>$37,002</td>
<td>$1,109,148</td>
<td>$1,134,609</td>
<td>$1,066,726</td>
<td>$910,774</td>
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<tr>
<td>Total Assets</td>
<td>$47,871</td>
<td>$1,690,814</td>
<td>$1,713,852</td>
<td>$1,584,455</td>
<td>$1,455,460</td>
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<tr>
<td>LIABILITIES AND SHAREHOLDERS' EQUITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Liabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Short-term Loans</td>
<td>$2,887</td>
<td>$88,775</td>
<td>$63,767</td>
<td>$57,958</td>
<td>$39,474</td>
</tr>
<tr>
<td>Accounts Payable</td>
<td>$1,118</td>
<td>$34,287</td>
<td>$30,089</td>
<td>$27,325</td>
<td>$19,725</td>
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<tr>
<td>Payables to Contractors and Equipment Suppliers</td>
<td>$4,403</td>
<td>$43,394</td>
<td>$53,724</td>
<td>$63,145</td>
<td>$26,012</td>
</tr>
<tr>
<td>Accrued Expenses and Other Current Liabilities</td>
<td>$5,353</td>
<td>$129,397</td>
<td>$150,746</td>
<td>$171,746</td>
<td>$103,500</td>
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<tr>
<td>Total Current Liabilities</td>
<td>$11,778</td>
<td>$360,544</td>
<td>$408,707</td>
<td>$418,239</td>
<td>$212,220</td>
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<tr>
<td>Non-current Liabilities</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Bonds Payable</td>
<td>$1,851</td>
<td>$56,900</td>
<td>$91,900</td>
<td>$153,094</td>
<td>$191,965</td>
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<tr>
<td>Other Non-current Liabilities</td>
<td>$496</td>
<td>$15,189</td>
<td>$18,595</td>
<td>$25,071</td>
<td>$30,050</td>
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<tr>
<td>Total Non-current Liabilities</td>
<td>$2,347</td>
<td>$72,089</td>
<td>$110,495</td>
<td>$178,165</td>
<td>$222,056</td>
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<tr>
<td>Total Liabilities</td>
<td>$14,125</td>
<td>$432,632</td>
<td>$419,202</td>
<td>$496,404</td>
<td>$424,884</td>
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<tr>
<td>Equity Attributable to Shareholders of the Parent</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital Stock at Par Value</td>
<td>$8,435</td>
<td>$299,304</td>
<td>$299,304</td>
<td>$299,304</td>
<td>$299,304</td>
</tr>
<tr>
<td>Capital Surplus</td>
<td>$1,352</td>
<td>$56,316</td>
<td>$56,310</td>
<td>$56,272</td>
<td>$56,300</td>
</tr>
<tr>
<td>Legal Capital Reserve</td>
<td>$8,880</td>
<td>$273,034</td>
<td>$241,723</td>
<td>$208,298</td>
<td>$177,641</td>
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<tr>
<td>Special Capital Reserve</td>
<td>$875</td>
<td>$26,907</td>
<td>$26,907</td>
<td>$26,907</td>
<td>$26,907</td>
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<tr>
<td>Unappropriated Earnings</td>
<td>$34,929</td>
<td>$1,072,706</td>
<td>$991,639</td>
<td>$863,710</td>
<td>$716,653</td>
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<tr>
<td>Others</td>
<td>$(502)</td>
<td>$(15,455)</td>
<td>$(26,918)</td>
<td>$(16,644)</td>
<td>$(11,774)</td>
</tr>
<tr>
<td>Equity Attributable to Shareholders of the Parent</td>
<td>$54,549</td>
<td>$1,676,817</td>
<td>$1,522,058</td>
<td>$1,389,248</td>
<td>$1,221,672</td>
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<tr>
<td>Noncontrolling Interests</td>
<td>$22</td>
<td>$697</td>
<td>$703</td>
<td>$800</td>
<td>$962</td>
</tr>
<tr>
<td>Total Shareholders’ Equity</td>
<td>$54,571</td>
<td>$1,677,494</td>
<td>$1,522,760</td>
<td>$1,399,051</td>
<td>$1,222,634</td>
</tr>
<tr>
<td>Total Liabilities &amp; Shareholders’ Equity</td>
<td>$67,994</td>
<td>$2,001,128</td>
<td>$1,991,862</td>
<td>$1,886,455</td>
<td>$1,657,518</td>
</tr>
</tbody>
</table>

Note:
(1) 2014-2018 financial statements were prepared in accordance with 2013 Taiwan-IFRSs version. Financial statements of 2014 were adjusted to retrospectively apply newly effected GAAP.
(2) Amounts in New Taiwan dollars have been translated into U.S. dollars at the rate of NT$30.740 as of December 31, 2018.
Note:
(1) 2014-2018 financial statements were prepared in accordance with 2013 Taiwan-IFRSs version. Financial statements of 2014 were adjusted to retrospectively apply newly effected
GAAP.
(2) Amounts in New Taiwan dollars have been translated into U.S. dollars at the weighted average rate of NT$30.163 for the year ended December 31, 2018.

(1) 2014-2018 financial statements were prepared in accordance with 2013 Taiwan-IFRSs version. Financial statements of 2014 were adjusted to retrospectively apply newly effected
GAAP.
(2) Amounts in New Taiwan dollars have been translated into U.S. dollars at the weighted average rate of NT$30.163 for the year ended December 31, 2018.
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Tel: +1-408-3828000

TSMC Spokesperson
Title: Senior Vice President & CFO
TSMC Deputy Spokesperson/Corporate Communications
Name: Elizabeth Sun
Title: Senior Director, TSMC Corporate Communications

Auditors
Company: Deloitte & Touche
Auditors: Mei-Hsiang, Yu-Feng Huang
Address: 20F, No. 100, Songren Rd., Xinyi Dist., Taipei 11073
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, No. 83, Sec. 1, Chung-Chung S. Rd., Taipei 10008
Taiwan, R.O.C.
Tel: +886-2-66365666 Fax: +886-2-23116723
Website: http://www.ctbcbank.com

ADR Depositary Bank
Company: Citibank, N.A.
Depositary Receipts Services
Address: 388 Greenwich Street, New York, NY 10013, U.S.A.
Website: http://www.citi.com/dr
Tel: +1-877-2484227 (toll free)
Tel: +1-781-5754555 (out of US)
Fax: +1-201-3424284
Email: citibank@shareholders-online.com

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

Safe Harbor Notice:
The statements included in this business overview that are not historical in nature are “forward-looking statements” within the meaning of the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. TSMC cautions readers that forward-looking statements are subject to significant risks and uncertainties and are based on TSMC’s current expectations. Actual results may differ materially from those contained in such forward-looking statements for a variety of reasons including, among others, risks associated with cyclicality and market conditions in the semiconductor industry; demand and supply for TSMC’s foundry manufacturing capacity in particular and for foundry manufacturing capacity in general; intense competition; the failure of one or more significant customers to continue to place the same level of orders with us; TSMC’s ability to remain a technological leader in the semiconductor industry; TSMC’s ability to manage its capacity; TSMC’s ability to obtain, preserve and defend its intellectual property rights; natural disasters and other unexpected events which may disrupt production; and exchange rate fluctuations. Additional information as to these and other risk factors that may cause TSMC’s actual results to differ materially from TSMC’s forward-looking statements may be found in TSMC’s Annual Report on Form 20-F, filed with the United States Securities and Exchange Commission (the “SEC”) on April 17, 2019, and such other documents as TSMC may file with, or submit to, the SEC from time to time. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.