

United Microelectronics Corporation 2019 Annual Report

Printed on February 26, 2020

UMC Annual Report Information Can Be Accessed from the Following Websites:

<http://www.umc.com>

<http://mops.twse.com.tw>



Annual Report 2019

TSE Code: 2303
NYSE Symbol: UMC

UMC

Spokesperson

Chitung Liu
Senior Vice President and
Chief Financial Officer
886 (2) 2658 9168
Chitung_Liu@umc.com

Acting Spokesperson(s)

Jinhong Lin
Finance Division
Director
886 (2) 2658 9168
Jinhong_Lin@umc.com

David Wong
Finance Division
Manager
886 (2) 2658 9168
David_Wong@umc.com

Headquarters

3 Li-Hsin 2nd Rd., Hsinchu
Science Park, Hsinchu, Taiwan
30078, R.O.C.
886 (3) 578 2258

Taipei Office

8F, 68 Sec. 1, Neihu Rd., Taipei,
Taiwan 11493, R.O.C.
886 (2) 2658 9168

Fab 8A

3, 5 Li-Hsin 2nd Rd., Hsinchu
Science Park, Hsinchu, Taiwan
30078, R.O.C.
886 (3) 578 2258

Fab 8C & Fab 8D

6, 8 Li-Hsin 3rd Rd., Hsinchu
Science Park, Hsinchu, Taiwan
30078, R.O.C.
886 (3) 578 2258

Fab 8E

17 Li-Hsin Rd., Hsinchu Science Park,
Hsinchu, Taiwan 30078, R.O.C.
886 (3) 578 2258

Fab 8F

3 Li-Hsin 6th Rd., Hsinchu Science Park,
Hsinchu, Taiwan 30078, R.O.C.
886 (3) 578 2258

Fab 8S

16 Creation 1st Rd., Hsinchu Science Park,
Hsinchu, Taiwan 30077, R.O.C.
886 (3) 578 2258

Fab 12A

18, 20 Nan-Ke 2nd Rd., & 57 Nan-Ke 3rd Rd.,
Southern Taiwan Science Park, Sinshih,
Tainan, Taiwan 74147, R.O.C.
886 (6) 505 4888

Singapore Branch

3 Pasir Ris Drive 12, Singapore 519528
65 6213 0018

Subsidiary in Mainland China

HJ
333 Xinghua St., Suzhou Industrial Park,
Suzhou, Jiangsu Province 215025, P.R.C.
0512 65931299

Subsidiary in Mainland China

USCXM
899 Wan Jia Chun Road, Xiang'an District,
Xiamen, Fujian Province, P.R.C.
0592 7687888

Subsidiary in Japan

USJC
3-1 Kinko-cho, Kanagawa-ku, Yokohama,
Kanagawa, Japan
81 45 620 2682

Wavetek

10 Chuangxin 1st Rd., Hsinchu Science Park,
Baoshan Township, Hsinchu,
Taiwan 30076, R.O.C.
886 (3) 578 1259

NexPower

2 Houke S. Rd., Central Taiwan Science Park,
Houli District, Taichung, Taiwan 42152, R.O.C.
886 (4) 2580 8888

Securities Dealing Institution

Horizon Securities Co., Ltd.
Stock Registration Department
3F, No.236 Hsin-Yi Rd. Sec. 4, Taipei,
Taiwan 10680, R.O.C.
886 (2) 2326 8818
<http://www.honsec.com.tw>

ADR Depositary and Registrar

J.P. Morgan Depositary Receipts
383 Madison Avenue, 11th Floor
New York, NY 10179, U.S.A.
General Contact : 1 (800) 990 1135
Outside the USA : 1 (651) 453 2128
<http://www.adr.com>

ADR Exchange Marketplace

NYSE Euronext
11 Wall Street,
New York, NY 10005, U.S.A.
1 (212) 656 3000
<http://www.nyse.com>
Ticker/Search Code: UMC

**Euro Convertible Bond Exchange
Marketplace**

Singapore Exchange Securities
Trading Limited
2 Shenton Way
#02-02 SGX Centre 1
Singapore 068804
65 6236 8888
<http://www.sgx.com>
ECB Search Code: ISIN XS1228110000

Auditors

Ernst & Young, Taiwan
Wan-Ju Chiu, Hsin-Min Hsu
9F, No. 333, Sec. 1 Keelung Road,
Taipei, Taiwan 11012, R.O.C.
886 (2) 2757 8888
<http://www.ey.com>

Corporate Website

<http://www.umc.com>

UNITED FOR EXCELLENCE

Table of Contents

Letter to Shareholders	4	Capital Overview	103
Corporate Profile	8	104 Capital and Shares	
9 Corporate Profile and Date of Establishment		109 Issuance of Corporate Bonds	
10 Corporate Milestones		115 Preferred Shares	
Corporate Governance Report	13	116 American Depositary Receipts	
14 Corporate Organization		118 Employee Stock Option Handling Status	
16 Directors' and Managers' Information		118 Issuance of New Restricted Employee Shares	
38 Corporate Governance Practices		118 Status of New Shares Issuance in Connection with Mergers and Acquisitions	
97 Certified Public Accountant (CPA) Fee Information		118 Financing Plans and Execution Status	
97 Information of CPA Change		Operations Overview	119
97 UMC's Chairman, Presidents, Chief Financial Officer, and Managers in Charge of Its Finance and Accounting Operations Did Not Hold Any Positions in UMC's Independent Auditing Firm or Its Affiliates in the Most Recent Year		120 Business Activities	
98 Change in Shareholding of Directors, Managers and Major Shareholders Who Own 10% or More of UMC Shares		127 Overview of Market, Production, and Sales	
100 Relationship Among the Top Ten Shareholders		133 Employees	
101 Shares Held by the Company, Directors, Managers and Companies Directly or Indirectly Controlled by the Company, and the Comprehensive Shareholding Ratio Based on Combined Calculation		134 Environmental Expenditure Information	
		134 Labor Relations	
		138 Major Contracts	

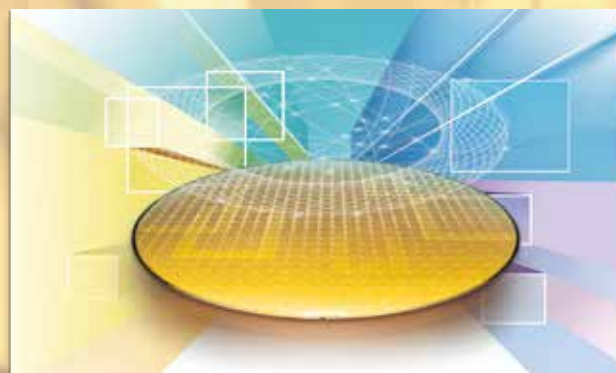
Review of Financial Position, Operating Results, Risk Management	140	Financial Review	183
141 Financial Position		184 Condensed Balance Sheets	
142 Financial Performance		186 Condensed Statements of Comprehensive Income	
143 Cash Flow		188 Financial Analysis	
143 Major Capital Expenditures from Recent Years and Impact on Company's Finance and Business		192 Audit Committee's Review Report	
143 Main Reasons and Improvement Plans for Recent Annual Reinvestment Policies and Profit or Loss, and Investment Plans for the Coming Year		193 Financial Statements – Consolidated	
144 Risk Management and Evaluation		269 Financial Statements – Parent Company	
153 Other Necessary Supplements			
Social Responsibility	154		
155 Description of Corporate Social Responsibility			
157 About Social Charity			
163 Environmental Protection, Safety and Health Management Instructions			
Special Disclosures	169		
170 Summary of Affiliated Enterprises			
182 Issuance of Private Placement Securities			
182 Acquisition or Disposal of UMC Shares by Subsidiaries			
182 Other Necessary Supplements			
182 Disclosures of Events Which May Have a Significant Influence on Stockholders' Equity or Share Price, in Compliance with Item 3, Paragraph 2 in Article 36 of the Securities and Exchange Law of the R.O.C.			

Letter to Shareholders

Dear Shareholders,

In 2019, geopolitical tension and a constantly changing environment surrounding international affairs resulted in a sharp decline in semiconductor demand. Although UMC continued to explore various avenues of growth to continue progressing our technologies, increase production capacity and cultivate new customer engagements, the difficult macro environment led to UMC's 2019 revenue declining slightly by 2% over the prior year. Our foundry segment shipped a total of 7.2 million 8-inch equivalent wafers for the year, with capacity utilization rate at 89%. From a consolidated basis, UMC's annual revenue was NT\$148.2 billion, gross profit margin was 14.4%, and operating profit margin was 3.2%. Profit attributable to the parent company was NT\$9.71 billion or an earnings per share of NT\$0.82. UMC's capital expenditure was US\$574 million, mainly invested towards new R&D process equipment and capacity deployment of Fab 12A in Southern Taiwan Science Park, Fab 12X in Xiamen and Fab 8N in Suzhou.

UMC is committed to providing customers with an extensive offering of process manufacturing solutions by collaborating with partners across the supply chain to develop process technologies and expand capacity. Future semiconductor demand will be driven by artificial intelligence (AI), Internet of Things (IoT), 5G communication (5G) and automotive electronics (AUTO). We will achieve business expansion by differentiating our logic and specialty technology solutions, with the latter being a core focus of UMC's continuous investment strategy. In response to market demand, UMC has diversified its 12-inch fabs to diversify risk, highlighted by the recent acquisition of USJC (United Semiconductor Japan Corporation). This 12-inch wafer fab that will bring operating synergies through enhanced productivity by joining UMC's network and supply chain ecosystem while driving our long-term growth in specialty technology segments.



Looking towards the future, UMC will proceed with the business strategy of strengthening our financial performance and securing future growth opportunities. UMC management team will focus on: (1) Integrating organizational effectiveness, developing technology, comprehensively improving quality and productivity, and pursuing excellence as the company's goal; (2) Working closely with the supply chain to improve product mix and market share to maintain stable profitability; (3) Continuing our dedication to customer service, strengthening synergies and providing added value, growing with customers, and creating win-win situations; (4) Enhancing the competitiveness of sustainable operations to protect shareholders' best interests.

Advanced Technology Development

Research and Development has always been the focus of UMC's operations. In 2019, UMC invested NT\$11.86 billion in R&D, continuing to recruit and develop new R&D talent, which led to fruitful results in the field of research and development within advanced and specialty technologies. Our 14FFC (14nm FinFET Compact) process technology development has fulfilled market requirements and has been introduced for 5G and networking applications. The

22nm ultra-low power consumption (22ULP) and ultra-low leakage current (22ULL) process platforms have now completed customer product verification, which can be applied for semiconductor applications including Internet of Things (IoT), mobile devices, automotive electronics, and technologies such as analog, mixed signal, and RF. In addition, our 28nm high-performance computing (28HPC+) process will provide new business opportunities in the field of image signal processors (ISP) found in smartphones; these ICs will be mass-produced in UMC's Taiwan fab in 2020. We also have a 28-nanometer millimeter-wave (mmWave) process that provides a low-power CMOS solution.

Specialty Technology Development

In specialty technology applications, UMC's 28nm high-voltage technology entered volume production in 2019. UMC also introduced the industry's first 40nm high-voltage driver IC process technology designed to complement organic light-emitting displays (AMOLED). In addition, the development of 22nm high-voltage technology (22eHV) is in line with our customers' expectations. Our world-class Radio Frequency Insulated Semiconductor (RFSOI) process technologies fulfill the stringent requirements of RF switches found in 4G & 5G mobile phones. At present, UMC's 0.13 micron, 0.11 micron and 90nm RFSOI processes have entered mass production. We have started developing a 55nm RFSOI platform to ensure future growth momentum in this area. Utilizing embedded flash memory technology (eFlash), 55nm MCUs have entered mass production while UMC's 40nm customer, SST, has completed yield and reliability verification. 28nm SST R&D progress is also in line with expectations, targeted to fulfill IoT applications. In emerging memory, 40nm Resistive Random Access Memory (ReRAM) has entered the small-volume production stage. On our 22nm, Resistive Memory (ReRAM) technology and Embedded Magneto Resistive

Random Access Memory (eMRAM) process platforms can be applied to related products such as AI Internet of Things (AIoT). Lastly, UMC is actively investing in the development of gallium nitride (GaN) semiconductors to facilitate entry into high-performance power market segments.

Patents and Intellectual Property Rights

Facing an intensely competitive landscape, UMC has fortified the company’s patent portfolio to protect intellectual property rights. The total number of patents granted to UMC over the years reached 13,507, strengthening UMC strong foundation in process technology knowledge and intellectual property.

In 2019, a total of 515 domestic and foreign patents were obtained, including 345 US patents, 94 patents in Taiwan and 76 patents in mainland China. The growing number of technology patents will continue to create additional competitive advantages for UMC to enhance value in the semiconductor supply chain.

Corporate Social Responsibility

Focus, development and continuity are the core beliefs of UMC to ensure corporate sustainability, corporate governance and corporate social responsibility. To preserve the best interests of our shareholders, UMC’s Board of Directors established the “Remuneration Committee,” “Audit Committee,” “Capital Budget Committee” and “Nomination Committee” to deliver objective performance evaluations to enhance transparency and operational supervision. In 2019, UMC was recognized through a number of distinguished awards and honors from domestic and foreign institutions and government agencies, highlighting UMC’s continuous commitment in the path of sustainable foundry operations.

Awards and Recognitions received in environmental protection, safety and health:

Selected as a “DJSI-World” constituent on the Dow Jones Sustainability Indices for the 12th consecutive year
Awarded highest honors in Corporate Governance
Achieved Leadership Status on CDP’s Climate Change Assessment Program for four consecutive years
Achieved the highest Platinum honors for the “Top 50 Corporate Sustainability Report Award” and the first “English Reportage Award.” Awarded the “National Enterprise Environmental Protection Award” by the Environmental Protection Administration of Executive Yuan, R.O.C for seventeen consecutive years
Awarded “Energy Saving Leadership Award” by Bureau of Energy, Ministry of Economic Affairs

We have strived to enhance UMC’s financial structure, diversify our customer base, and enhance development with world-class manufacturing capabilities. We are convinced that the implementation of the company’s strategy will elevate UMC’s competitiveness. With the joint effort of all our colleagues, the team will continue to provide better foundry services to improve the company’s operating performance and maximize benefits for UMC shareholders. We would like to express our deepest gratitude to all shareholders and wish everyone happiness and health.



Chairman: Stan Hung



President: SC Chien



President: Jason Wang

Corporate Profile

9	Corporate Profile and Date of Establishment
10	Corporate Milestones

Corporate Profile and Date of Establishment

UMC is a leading global semiconductor foundry. The Company provides high quality IC production with a focus on both logic and specialty technologies to serve every major sector of the electronics industry. UMC's comprehensive technology and manufacturing solutions include logic/RF, embedded high voltage, embedded flash, RFSOI/BCD on 8" & 12" wafers and IATF-16949 automotive manufacturing certification for all wafer fabs.

Founded in 1980 as Taiwan's first semiconductor company, UMC is a foundry leader. UMC's comprehensive foundry solutions enable chip designers to leverage the strength of the company's leading-edge processes, which include 28-nanometer High-K/Metal Gate, 14-nanometer FinFET, mixed signal/RFCMOS, and a wide range of specialty technologies.

UMC led the development of the commercial semiconductor industry in Taiwan. It was the first local company to offer foundry services, as well as the first semiconductor company to list on the Taiwan Stock Exchange (1985). UMC has an extensive network of service offices in Taiwan, China, Europe, Japan, Korea, Singapore, and the United States to meet the needs of its global customer base. UMC will continue to provide customers with robust process technologies and comprehensive foundry solutions, enabling customers to continuously strengthen their competitive advantage in today's rapidly changing industry.

UMC has 12 wafer fabs located throughout Asia, including four advanced 12-inch fabs. Fab 12A was Taiwan's first 12-inch fab, and has been in volume production for customer products since 2002. This advanced facility consists of Phases 1-6 and is currently manufacturing customer products using 28-nanometer High-K/Metal gate and 14-nanometer FinFET technologies. UMC's second 12-inch fab, Fab 12i, is located in Singapore. This facility is our specialty technologies center that provides highly specialized processes on 12-inch manufacturing to serve a diverse range of product applications. United Semi, located in Xiamen, China, is southern China's first 12-inch foundry fab and began volume production in 2016. United Semi serves China's vast IC market and provides high quality, geographically diversified manufacturing for our foundry customers. Japan-based USJC, fully acquired in October of 2019, is UMC's fourth 300mm fab. USJC offers foundry volume production for mature specialty nodes ranging from 90-nanometer to 40-nanometer.

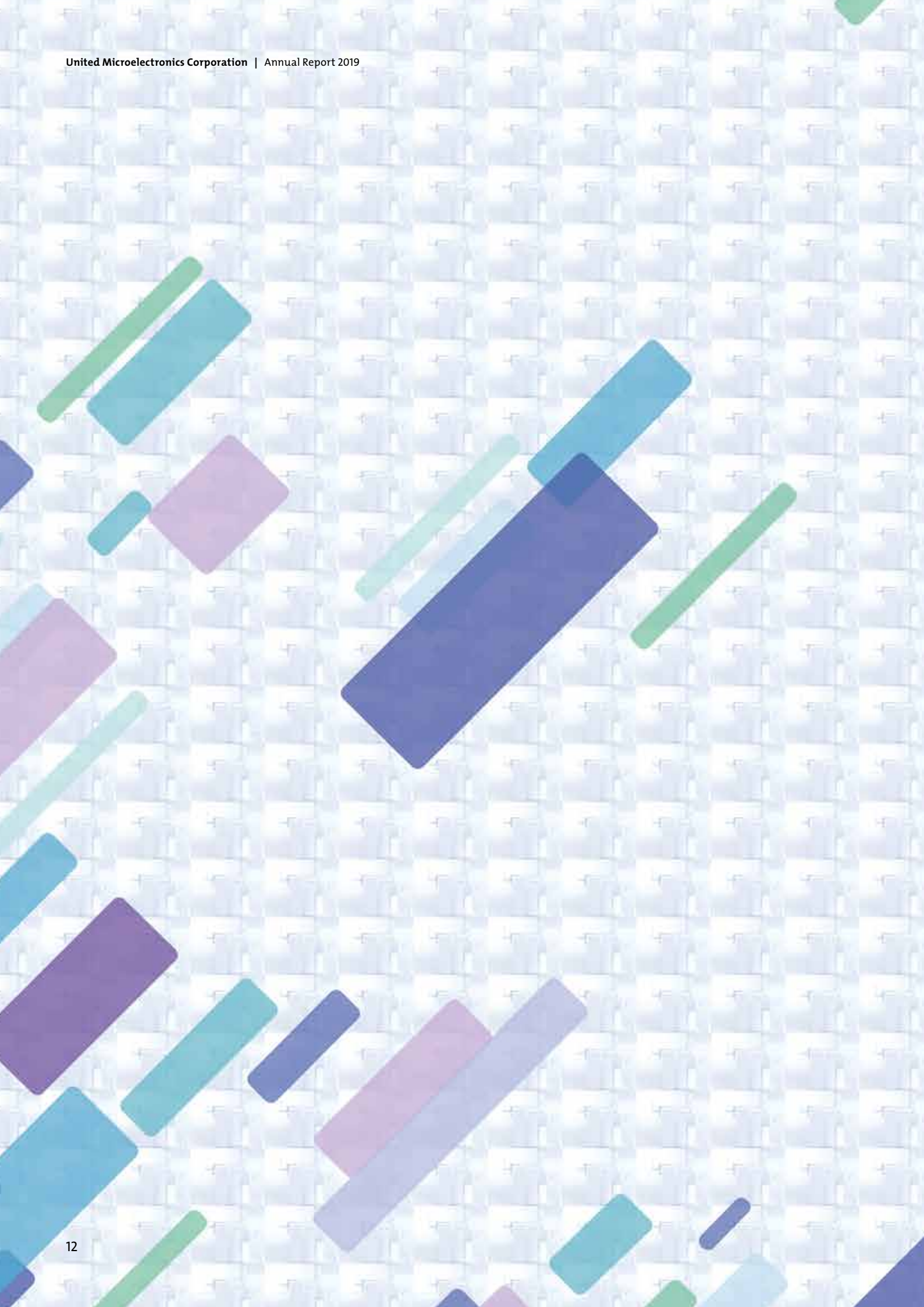
In addition, UMC's manufacturing expertise and 40 years experience ensure industry-leading cycle times and defect densities. Comprehensive process control systems with advanced methodologies and a strong engineering team support fast product ramp. UMC's advanced automation, mature defect density, fast cycle times and ample capacity enable UMC to provide the most competitive manufacturing advantages for our foundry customers.

Company establishment date: May 22, 1980.

Corporate Milestones

May, 1980	Established
July, 1985	Officially listed on the TWSE
July, 1995	Transformed into a Pure-play Foundry Company
July-September, 1995	Formed joint ventures with 11 IC design houses from North America to establish three foundry companies
September, 1995	8-inch fab started mass production
January, 1996	0.35-micron technology process started production
October, 1997	0.25-micron technology process started production
April, 1998	Acquired Holtek Semiconductor fab (now known as Fab 8E)
December, 1998	Acquired Nippon Steel Semiconductor Corp. fab (renamed UMCJ in 2001)
March, 1999	0.18-micron technology process started production
November, 1999	Official construction began for UMC's 12-inch fab in Tainan Science Park
January, 2000	UMC Group 5-in-1 Millennium (Consolidated UMC, United Semiconductor Corp. (USC), United Integrated Circuits Corp. (UICC), United Silicon, Inc. (USIC) and UTEK Semiconductor Corp. into a single UMC)
March, 2000	Manufactured first IC using all-copper interconnects
May, 2000	Manufactured first 0.13-micron process IC
September, 2000	Listed on the New York Stock Exchange
December, 2000	Groundbreaking for the world's most advanced 12-inch fab in Singapore (UMCi)
January, 2003	UMCi announced 12-inch fab equipment move-in
March, 2003	Manufactured the First 90nm Process IC
March, 2004	UMCi started mass production
May, 2004	90nm process was fully verified and started mass production
July, 2004	UMC acquired SiS Microelectronics (now known as Fab 8S)
December, 2004	Acquired its subsidiary UMCi and changed its name to Fab 12i

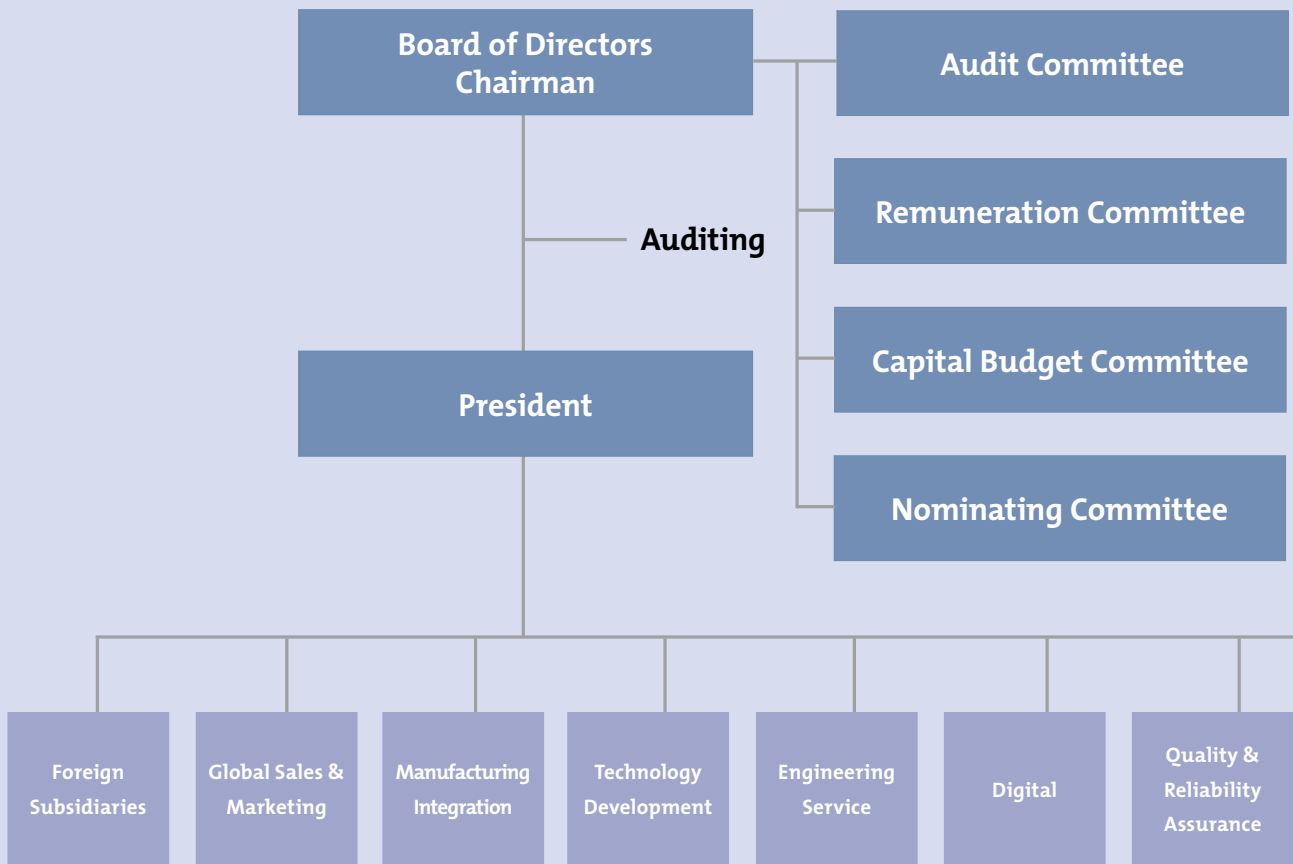
June, 2005	Manufactured the first 65nm customer IC
August, 2005	90nm wafer shipments exceeded 100,000
June, 2006	Became the first semiconductor manufacturer in the world to complete QC-080000 IECQ HSPM certification for all company-wide sites
November, 2006	Manufactured the first 45nm IC
January, 2007	Expanded production site and completed a New R&D building in Tainan Science Park
September, 2008	Listed as a constituent stock by Dow Jones Sustainability Indexes
October, 2008	Announced foundry industry's first 28nm SRAMs
April, 2009	Delivered customer ICs produced on its high performance 40nm logic technology
December, 2009	Announced completion of tender offer to UMC Japan
May, 2010	Celebrated 30th Anniversary
December, 2010	12-inch fab Fab 12A Phase 3 began production
October, 2011	28nm process began pilot production
May, 2012	Groundbreaking ceremony for Fab 12A's new Phase 5 & 6 in Tainan Science Park
March, 2013	Acquired Hejian Fab based in Suzhou, China
May, 2013	Established its Specialty Technology Center of Excellence in Singapore
August, 2014	Joined Fujitsu's new foundry company
March, 2015	Groundbreaking of United Semi (Xiamen) Fab
November, 2016	Held grand opening ceremony for new 12-inch fab in Xiamen, China and the fab started mass production
February, 2017	Entered mass production for 14nm customer ICs
June, 2018	Board approved 100% acquisition of MIFS fab in Japan from Fujitsu
September, 2019	Selected as a DJSI Global Component for 12th Consecutive Year
October, 2019	Acquired 100% of MIFS 300mm fab, renamed USJC



Corporate Governance Report

14	Corporate Organization
16	Directors' and Managers' Information
38	Corporate Governance Practices
97	Certified Public Accountant (CPA) Fee Information
97	Information of CPA Change
97	UMC's Chairman, Presidents, Chief Financial Officer, and Managers in Charge of Its Finance and Accounting Operations Did Not Hold Any Positions in UMC's Independent Auditing Firm or Its Affiliates in the Most Recent Year
98	Change in Shareholding of Directors, Managers and Major Shareholders Who Own 10% or More of UMC Shares
100	Relationship Among the Top Ten Shareholders
101	Shares Held by the Company, Directors, Managers and Companies Directly or Indirectly Controlled by the Company, and the Comprehensive Shareholding Ratio Based on Combined Calculation

Corporate Organization



Organizational Functions

Foreign Subsidiaries

- Responsible for client and regional market development in the Americas, Europe, and Asia, and provide technical support and services.

Global Sales and Marketing

- Responsible for global customer and operational management and market development, and provide technical support and services.
- Undertake UMC's objectives, analyze market information and integrate UMC's internal resources and external competition. Formulate technical development blueprints, strategic recommendations and advanced market development to serve as reference for UMC's future business direction.

Manufacturing Integration

- Responsible for managing 8-inch and 12-inch operations, product manufacturing, manufacturing technology development, and integration of production and services.

Technology Development

- Design, develop and manage intellectual property core for customer product needs.
- Research and develop advanced process technology platforms, and develop and apply advanced material technology platforms.
- Research and develop technologies for various mature and special process platforms.

Engineering Service

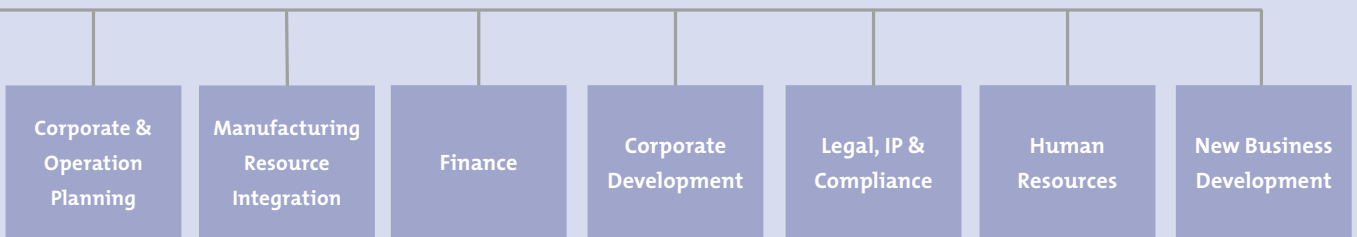
- Responsible for product engineering, malfunction and material analysis, product introduction and yield improvement for all fabs.
- Provide company-wide photomask service, management, quality control and improvements.
- Provide company-wide back-end encapsulation testing, quality control and improvements.

Digital

- Through innovative digital technologies, combined IoT, big data and artificial intelligence and integrated semiconductor expertise (OT) and information technology (IT). Construct data-driven advanced semiconductor smart manufacturing systems to improve product quality and yield. Improve and optimize production efficiency and production costs to achieve world-class quality of production services. Ensure information security and service quality to achieve customer satisfaction, company operational efficiency, and research and development momentum.

Quality and Reliability Assurance

- Responsible for comprehensive quality management, strengthening quality awareness and improving product reliability testing to meet customer demand for quality and improve quality control for mass products.



Corporate and Operation Planning

- Develop capacity plans and operational resource integration, and assist in production and sales coordination.

Manufacturing Resource Integration

- Responsible for company-wide plant operations, plant expansion planning and environmental safety and risk management.

Finance

- Responsible for UMC's finances and accounting management, and serve as spokesperson for UMC.

Corporate Development

- Responsible for corporate development and strategy planning.

Legal, Intellectual Property and Compliance

- Responsible for domestic and international intellectual property rights management, legal affairs, and compliance with domestic and foreign laws and regulations.

Human Resources

- Responsible for the selection, utilization, cultivation and retention of human resource and ensuring a suitable working environment for employees.
- Responsible for ensuring the physical safety of UMC's personnel, affairs and objects through tangible actions.

New Business Development

- Responsible for developing, assessing and managing new ventures.

Auditing

- Responsible for assisting the Board of Directors and managers to independently and objectively assess the effectiveness of designs and implementation of internal control system. Provide timely recommendations for improvement to ensure compliance with UMC's policies and relevant laws and regulations.

Directors' and Managers' Information

Directors' Information

Title	Nationality /Place of Incorporation	Name	Gender	Date Elected (Date Assumed) <Date First Elected>	Term Expires	Shareholding When Elected		Present Shareholding	
						Common Shares	%	Common Shares	%
Chairman	R.O.C.	Stan Hung	Male	2018.06.12 <2008.07.16>	2021.06.11	16,341,452	0.13	39,916,452	0.34
Independent Director	R.O.C.	Cheng-Li Huang	Male	2018.06.12 <2009.06.10>	2021.06.11	0	0	0	0
Independent Director	R.O.C.	Wenyi Chu	Female	2018.06.12 <2015.06.09>	2021.06.11	0	0	0	0
Independent Director	R.O.C.	Lih J. Chen	Male	2018.06.12 <2018.06.12>	2021.06.11	0	0	0	0
Independent Director	R.O.C.	Jyuo-Min Shyu	Male	2018.06.12 <2018.06.12>	2021.06.11	0	0	0	0

Spouse & Minor Shareholding		Experience (Education)	Selected Current Position at UMC and Other Companies
Common Shares	%		
1,269,435	0.01	Chairman, UMC Bachelor in Accounting, Tamkang University	Chairman & Chief Strategic Officer, UMC; Chairman, Fortune Venture Capital Corp.; Chairman, TLC Capital Co., Ltd.; Chairman, Faraday Technology Corporation; Director, Triknight Capital Corporation; Chairman, UMC Capital Corp.; Director, United Microelectronics (Europe) B.V.; Director, UMC Capital (USA); Director, UnitedDS Semiconductor (Shandong) Co., Ltd.
0	0	Certified Public Accountant, Zheng Ji Accounting Firm Professor, Department of Accounting, Tamkang University Ph.D. of Business School, the University of Warwick	None
0	0	Professor, Department of Business Administration, National Taiwan University Ph.D. of London Business School	None
0	0	Academician, Academia Sinica Distinguished Chair Professor, National Tsing Hua University Ph.D. in Physics, University of California, Berkeley	None
0	0	Emeritus Professor, National Tsing Hua University Minister, Ministry of Science and Technology President, Industrial Technology Research Institute Ph.D. in Electrical Engineering and Computer Science, University of California, Berkeley	Independent Director, Inventec Corporation; Director, Iridium Medical Technology Co., Ltd.; Director, GeoThings, Inc.; Director, Modern Classic Limited

Directors' Information (Continue)

Title	Nationality /Place of Incorporation	Name	Gender	Date Elected (Date Assumed) <Date First Elected>	Term Expires	Shareholding When Elected		Present Shareholding	
						Common Shares	%	Common Shares	%
Director	R.O.C. U.S.A.	Chung Laung Liu	Male	2018.06.12 <2006.06.12>	2021.06.11	0	0	0	0
Director	R.O.C.	Ting-Yu Lin	Male	2018.06.12 <2009.06.10>	2021.06.11	12,547,222	0.10	12,547,222	0.11
Director	R.O.C.	Hsun Chieh Investment Co., Ltd.	N/A	2018.06.12 <1995.06.21>	2021.06.11	441,371,000	3.50	441,371,000	3.76
	R.O.C.	Representative: Male SC Chien		2018.06.12 <2016.03.01>	2021.06.11	1,894,648	0.02	7,894,648	0.07
Director	R.O.C.	Silicon Integrated Systems Corp.	N/A	2018.06.12 <2005.06.13>	2021.06.11	315,380,424	2.50	285,380,424	2.43
	U.S.A.	Representative: Male Jason Wang		2018.06.12 <2015.06.09>	2021.06.11	0	0	10,200,000	0.09

Note 1: Present shareholding figures are actual number of shares held on January 31, 2020.

Note 2: Directors' election date is the same date they assumed their positions.

Note 3: Directors are not spouses or relatives within the second degree of kinship of other managers and directors.

Spouse & Minor Shareholding		Experience (Education)	Selected Current Position at UMC and Other Companies
Common Shares	%		
0	0	Academician, Academia Sinica Honorary Chair Professor, National Tsing Hua University Sc.D. of Massachusetts Institute of Technology	Chairman, TrendForce Corp.; Independent Director, Microelectronics Technology Inc.; Independent Director, Powerchip Technology Corporation; Independent Director, Far EasTone Telecommunications Co., Ltd.; Independent Director, Accton Technology Corporation; Director, Macronix International Co., Ltd.; Director, UBI Pharma Inc.; Director, GeoThings, Inc.
0	0	Chairperson, Sunrox International Inc. Master in International Finance, Meiji University	None
N/A	N/A	N/A	N/A
0	0	Director, UMC Bachelor in Chemical Engineering, National Taiwan University	President, UMC; Director, Fortune Venture Capital Corp.; Director, TLC Capital Co., Ltd.; Director, Wavetek Microelectronics Corporation; Director, UMC Capital Corp.
N/A	N/A	N/A	N/A
0	0	Director, UMC Business Administration, San Jose State University	President, UMC; Director, Fortune Venture Capital Corp.; Director, TLC Capital Co., Ltd.; Director, Wavetek Microelectronics Corporation; Director, UMC Group (USA); Director, United Microelectronics (Europe) B.V.; Director, UMC Capital Corp.; Director & President, UMC Capital (USA); Director, United Microtechnology Corporation (New York); Director, United Microtechnology Corporation (California); Director, Sino Paragon Limited

Note 4: Directors did not hold shares through other parties.

Note 5: Present Shareholding figures consist of shares under Trust with Discretion Reserved.

Note 6: Presidents and Chairman are not the same person, spouses or relatives within the first degree of kinship.

Major Shareholders of UMC's Institutional Shareholders

Name of Institutional Shareholders	Major Shareholders (Holding Percentage)
Hsun Chieh Investment Co., Ltd.	Shieh Yong Capital Co., Ltd. (63.48%); UMC (36.49%)
Silicon Integrated Systems Corp.	UMC (20.20%); Hsun Chieh Investment Co., Ltd. (1.54%); Hsing-Sen Liu (1.43%); JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds (1.13%); Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds (0.75%); Liang Xun Investment Co., Ltd. (0.63%); Zhi-Wei Wu (0.59%); De-Chang Wu (0.54%); Hua-Rong Lian (0.54%); Wen-Chi Chen (0.52%)

Major Shareholders of UMC's Major Institutional Shareholders

Name of Institutional Shareholders	Major Shareholders (Holding Percentage)
Shieh Yong Capital Co., Ltd.	Unimicron Technology Corp. (16.67%); Silicon Integrated Systems Corp. (16.67%); Novatek Microelectronics Corp. (15.15%); Faraday Technology Corporation (12.12%); King Yuan Electronics Co., Ltd. (7.58%)
Liang Xun Investment Co., Ltd.	Tsai-Feng Hou (23.42%); Chi-Chuan Huang (23.42%); Liang-Hsun Huang (17.72%); Hsiang-Shu Huang (17.72%); Liang-Hsuan Huang (17.72%)

Directors' Professional Knowledge and Independence Information

Name	Criteria	Five or More Years Experience or Professional Qualification			Independence Status (Note)												Number of Companies also Serves as Independent Director for	
		Lecturer or Above in Business, Law, Finance, Accounting or Corporate Business Related Fields	Qualification of Justice, Procurator, Attorney, CPA, Specialist or Technician of National Examination in Corporate Business Related Fields	Experience in Business, Law, Finance, Accounting or Corporate Business Related Fields	1	2	3	4	5	6	7	8	9	10	11	12		
Stan Hung		Yes		Yes	-	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
SC Chien		Yes		Yes	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	0
Jason Wang		Yes		Yes	-	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	0
Cheng-Li Huang	Yes		Yes	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Wenyi Chu	Yes		Yes	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Lih J. Chen	Yes		Yes	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0
Jyuo-Min Shyu	Yes		Yes	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1
Chung Laung Liu	Yes		Yes	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	4
Ting-Yu Lin		Yes		Yes	✓	✓	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0

Note: For those directors who match the condition listed below during and two years before assuming period, "✓" is marked in the appropriate space.

- (1) Is not an employee of the Company or its affiliates.
- (2) Is not a director or supervisor of the Company or its affiliates (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (3) Does not directly or indirectly own more than 1% of the Company's outstanding shares, nor is one of the top ten non-institutional shareholders of the Company.
- (4) Is not a spouse, relative within the second degree of kinship or lineal relative within the third degree of kinship of managers specified in the column (1) or any person specified in the column (2) and (3).
- (5) Is not a director, supervisor or employee of a legal entity which directly owns more than 5% of the Company's issued shares or are the top five owners of the Company's issued shares, nor a director, supervisor or employee of a legal entity which designates a representative to serve as a director or supervisor of the Company in accordance with Article 27, paragraph 1 or 2 of the Company Act (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (6) Is not a director, supervisor or employee of other company, and more than half of directors or voting shares of other company are controlled by the same person (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (7) Is not a director, supervisor or employee of other company, and Chairman, President or Manager with equivalent position of other company are the same person or spouse (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (8) Is not a director, supervisor, or manager of a company which has a business relationship with the Company, nor a shareholder who owns more than 5% of such a company (the same does not apply, however, in cases where a company owns more than 20% but less than 50% of the Company's issued shares and the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (9) Is not an owner, partner, director, supervisor, manager or spouse of any sole proprietor business, partnership, company or institution which has provided the Company and its affiliates with auditing or services of finance, business consult and legal affairs for which the accumulated remuneration in the past two years does not exceed NTD 500,000, provided that this restriction does not apply to any member of the compensation committee, public tender offer review committee, or special committee on mergers and acquisitions who exercises powers pursuant to related regulation such as the "Securities and Exchange Act" or the "Business Mergers And Acquisitions Act."
- (10) Is not a spouse or relative within the second degree of kinship of any of the directors.
- (11) Is not under any condition pursuant to Article 30 of the Company Act.
- (12) Is not a legal entity owner or its representative pursuant to Article 27 of the Company Act.

Managers' Information

Title	Nationality	Name	Gender	Date Elected (Date Assumed)	Present Shareholding		Spouse & Minor Shareholding	
					Common Shares	%	Common Shares	%
Chairman & Chief Strategic Officer	R.O.C.	Stan Hung	Male	2008.07.16	39,916,452	0.34	1,269,435	0.01
President	R.O.C.	SC Chien	Male	2004.11.23	7,894,648	0.07	0	0
President	U.S.A.	Jason Wang	Male	2014.12.24	10,200,000	0.09	0	0
Executive Vice President	R.O.C.	Ming Hsu	Male	2015.06.08	1,873,000	0.02	0	0
Senior Vice President	R.O.C.	Oliver Chang	Male	2020.02.26	462,589	0.00	0	0
Senior Vice President & Chief Financial Officer	R.O.C.	Chitung Liu	Male	2005.10.20	3,340,217	0.03	0	0
Senior Vice President & General Counsel	R.O.C.	Lucas S Chang	Male	2018.01.01	900,000	0.01	0	0
Vice President	R.O.C.	TS Wu	Male	2013.01.01	1,009,809	0.01	304	0.00
Vice President	R.O.C.	C C Hsu	Male	2013.01.01	1,152,068	0.01	0	0
Vice President	R.O.C.	M C Lai	Male	2015.03.30	1,526,863	0.01	0	0
Vice President	R.O.C.	G C Hung	Male	2015.01.28	1,500,791	0.01	0	0
Vice President	R.O.C.	Wenchi Ting	Male	2017.01.03	1,350,000	0.01	0	0

Experience/Education	Selected Current Position at Other Companies
Chairman & Chief Strategic Officer, UMC Bachelor in Accounting, Tamkang University	Chairman, Fortune Venture Capital Corp.; Chairman, TLC Capital Co., Ltd.; Chairman, Faraday Technology Corporation; Director, Triknight Capital Corporation; Chairman, UMC Capital Corp.; Director, United Microelectronics (Europe) B.V.; Director, UMC Capital (USA); Director, UnitedDS Semiconductor (Shandong) Co., Ltd.
President, UMC Bachelor in Chemical Engineering, National Taiwan University	Director, Fortune Venture Capital Corp.; Director, TLC Capital Co., Ltd.; Director, Wavetek Microelectronics Corporation; Director, UMC Capital Corp.
President, UMC Business Administration, San Jose State University	Director, Fortune Venture Capital Corp.; Director, TLC Capital Co., Ltd.; Director, Wavetek Microelectronics Corporation; Director, UMC Group (USA); Director, United Microelectronics (Europe) B.V.; Director, UMC Capital Corp.; Director & President, UMC Capital (USA); Director, United Microtechnology Corporation (New York); Director, United Microtechnology Corporation (California); Director, Sino Paragon Limited
Executive Vice President, UMC Master in Science Electrical Engineering, University of Southern California	Director, United Semiconductor Japan Co., Ltd.
Senior Vice President, UMC Bachelor in Physics, Chinese Culture University	None
Senior Vice President & Chief Financial Officer, UMC EMBA in Business Administration, National Taiwan University	Director, Fortune Venture Capital Corp.; Director, TLC Capital Co., Ltd.; Director, Unimicron Technology Corp.; Director, Novatek Microelectronics Corp.; Director, HeJian Technology (Suzhou) Co., Ltd.; Director, UMC Group (USA); Director, Green Earth Limited; Director, ECP Vita Pte. Ltd.; Director, Omni Global Limited; Director, UMC Capital Corp.; Director, United Microchip Corporation; Director, Sino Paragon Limited; Director, United Semiconductor Japan Co., Ltd.
Senior Vice President & General Counsel, UMC J.D. in Law, University of Santa Clara	Director, Alpha and Omega Semiconductor Limited
Vice President, UMC Master in Electronic Engineering, National Chiao Tung University	None
Vice President, UMC Master in Materials Science & Engineering, National Tsing Hua University	Vice Chairman, United Semiconductor (Xiamen) Co., Ltd.
Vice President, UMC Bachelor in Materials Science & Engineering, National Tsing Hua University	Director, HeJian Technology (Suzhou) Co., Ltd.
Vice President, UMC Master in Chemical Engineering, National Taiwan University	None
Vice President, UMC Ph.D. in Computer Information Science, University of Texas at Austin	Director, Asia Pacific Microsystems, Inc.

Managers' Information (Continue)

Title	Nationality	Name	Gender	Date Elected (Date Assumed)	Present Shareholding		Spouse & Minor Shareholding	
					Common Shares	%	Common Shares	%
Vice President	R.O.C.	Jerry CJ Hu	Male	2013.04.02	1,045,000	0.01	0	0
Vice President	R.O.C.	Y S Shen	Male	2014.01.13	975,000	0.01	0	0
Vice President	R.O.C.	Steven S Liu	Male	2017.04.24	900,000	0.01	0	0
Vice President	R.O.C.	SR Sheu	Male	2008.07.16	1,418,892	0.01	786,017	0.01
Vice President	R.O.C.	M L Liao	Male	2008.07.16	3,540,809	0.03	199,138	0.00
Vice President	R.O.C.	S S Hong	Male	2013.01.01	1,066,406	0.01	0	0
Vice President	R.O.C.	Francia Hsu	Female	2016.03.16	960,000	0.01	0	0
Vice President & Chief Human Resources Officer	R.O.C.	Eric Chen	Male	2011.02.14	1,250,000	0.01	0	0
Associate Vice President	R.O.C.	Johnson Liu	Male	2014.11.04	506,413	0.00	1,631	0.00
Associate Vice President	R.O.C.	Victor Chuang	Male	2019.03.28	364,671	0.00	13,943	0.00
Associate Vice President	R.O.C.	Chuck Chen	Male	2019.03.28	508,201	0.00	0	0
Associate Vice President	R.O.C.	S F Tzou	Male	2013.01.01	1,879,108	0.02	0	0
Associate Vice President	R.O.C.	Le Tien Jung	Male	2013.01.01	850,000	0.01	20,000	0.00
Associate Vice President	R.O.C.	Yau Kae Sheu	Male	2014.01.13	850,000	0.01	0	0

Experience/Education	Selected Current Position at Other Companies
Vice President, UMC Ph.D. in Materials Science & Engineering, Stanford University	None
Vice President, UMC Bachelor in Electronic Engineering, Feng Chia University	Director, Faraday Technology Corporation
Vice President, UMC Master in Science Electrical Engineering, University of Southern California	None
Vice President, UMC Master in Electrical Engineering, The University of New Mexico	None
Vice President, UMC Bachelor in Electronic Engineering, National Taiwan Institute of Technology	None
Vice President, UMC Bachelor in Materials Science & Engineering, National Tsing Hua University	Chairman, United Semiconductor Japan Co., Ltd.
Vice President, UMC Master in Industrial Engineering, National Chiao Tung University	None
Vice President & Chief Human Resources Officer, UMC EMBA in Finance, National Taiwan University	Director, Best Elite International Limited
Associate Vice President, UMC Bachelor in Physics, Tamkang University	None
Associate Vice President, UMC Bachelor in Electrical Engineering, National Cheng Kung University	None
Associate Vice President, UMC Master in Engineering Science, National Cheng Kung University	None
Associate Vice President, UMC Master in Materials Science & Engineering, National Tsing Hua University	None
Associate Vice President, UMC Ph.D. in Electrical Engineering, University of Texas at Austin	None
Associate Vice President, UMC Master in Electrical Engineering, University of Missouri	None

Managers' Information (Continue)

Title	Nationality	Name	Gender	Date Elected (Date Assumed)	Present Shareholding		Spouse & Minor Shareholding	
					Common Shares	%	Common Shares	%
Associate Vice President	R.O.C.	J Y Wu	Male	2014.05.01	850,191	0.01	587	0.00
Associate Vice President	R.O.C.	Osbert Cheng	Male	2014.08.01	850,938	0.01	0	0
Associate Vice President	R.O.C.	Steven Hsu	Male	2016.03.16	850,000	0.01	2,889	0.00
Associate Vice President	Singapore	Purakh Raj Verma	Male	2017.08.09	0	0	0	0
Associate Vice President	R.O.C.	Yanan Mou	Male	2019.07.01	0	0	40,146	0.00
Associate Vice President	R.O.C.	C Y Hsu	Male	2017.04.17	4,267	0.00	0	0
Associate Vice President	R.O.C.	Remi Yu	Male	2019.11.15	120,000	0.00	0	0
Associate Vice President	R.O.C.	Michael CY Wang	Male	2019.12.31	0	0	0	0
Associate Vice President	R.O.C.	Ji Fu Kung	Male	2013.01.01	850,741	0.01	0	0
Associate Vice President	R.O.C.	C P Yen	Male	2015.09.16	952,645	0.01	0	0
Associate Vice President	R.O.C.	Mindy Lin	Female	2018.05.14	1,227,925	0.01	781,408	0.01
Associate Vice President	R.O.C.	Pang Min Wang	Male	2018.09.14	418,126	0.00	16	0.00
Former Associate Vice President	R.O.C.	T W Liu	Male	2015.09.16	N/A	N/A	N/A	N/A
Former Associate Vice President	R.O.C.	Chih Chong Wang	Male	2018.01.04	N/A	N/A	N/A	N/A

Note 1: T W Liu and Chih Chong Wang, former managers, were dismissed in 2019.

Note 2: Present shareholding figures are actual number of shares held on January 31, 2020.

Note 3: Managers did not hold shares through other parties.

Note 4: Managers are not spouses or relatives within the second degree of kinship of other managers.

Note 5: Managers' election date is the same date they assumed their positions.

Note 6: Present shareholding figures consist of shares under Trust with Discretion Reserved.

Note 7: Presidents and Chairman are not the same person, spouses or relatives within the first degree of kinship.

Experience/Education	Selected Current Position at Other Companies
Associate Vice President, UMC Master in Physics, Tamkang University	None
Associate Vice President, UMC Ph.D. in Electrical Engineering, National Chiao Tung University	None
Associate Vice President, UMC Master in Electronic Engineering, National Chiao Tung University	None
Associate Vice President, UMC Master in Microelectronics, Nanyang Technological University	None
Associate Vice President, UMC Master in Electrical Engineering, State University of New York at Stony Brook	None
Associate Vice President, UMC EMBA, National Chiao Tung University	None
Associate Vice President, UMC Bachelor in Electrophysics, National Chiao Tung University	None
Associate Vice President, UMC Master in Chemical Engineering, Cornell University	None
Associate Vice President, UMC Ph.D. in Materials Science, University of Connecticut	None
Associate Vice President, UMC Master in Engineering Science, National Cheng Kung University	None
Associate Vice President, UMC Master in Business Administration, University of Leicester	None
Associate Vice President, UMC Master in Integrated Manufacturing Systems Engineering, North Carolina State University	None
Former Associate Vice President, UMC Bachelor in Electrical Engineering, National Central University	N/A
Former Associate Vice President, UMC Ph.D. in Electrical Engineering, National Chiao Tung University	N/A

Remuneration Paid to Directors (Including Independent Directors), Presidents and Vice Presidents

Directors' Remuneration (Including Independent Directors')

Title	Name	Director's Remuneration								Ratio of Total Remuneration (A+B+C+D) to Net Income (%)	
		Base Compensation (A)		Severance Pay and Pensions(B)		Compensation to Directors(C)		Business Execution Expenses(D)			
		The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements
Chairman	Stan Hung										
Independent Director	Cheng-Li Huang										
Independent Director	Wenyi Chu										
Independent Director	Lih J. Chen										
Independent Director	Jyuo-Min Shyu										
Director	Chung Laung Liu	0	1,037	0	0	10,259	21,259	7,080	7,170	0.18	0.30
Director	Ting-Yu Lin										
Director	Hsun Chieh Investment Co., Ltd. Representative: SC Chien										
Director	Silicon Integrated Systems Corp. Representative: Jason Wang										

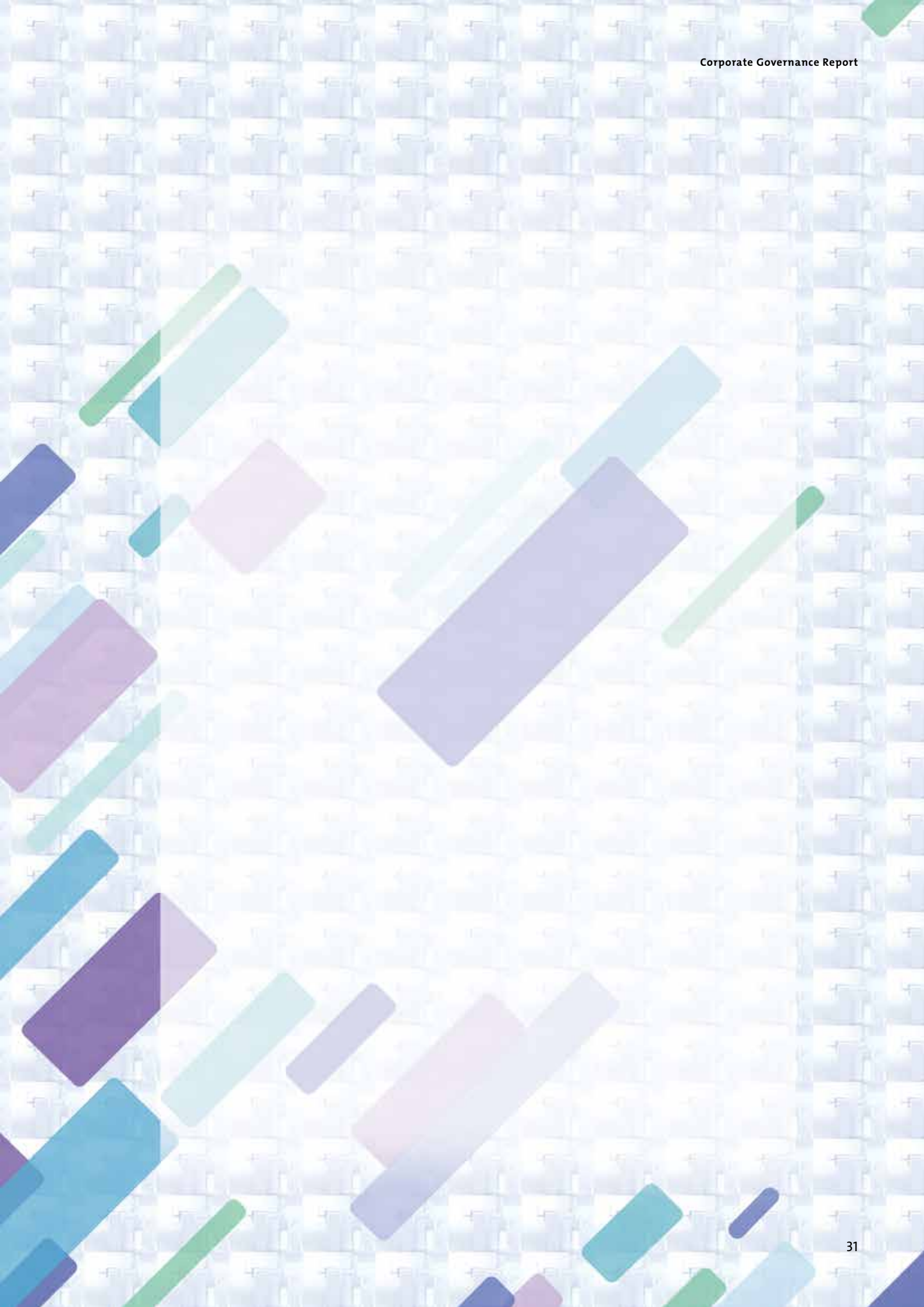
In addition to the information disclosed in the table above, has any Director of the Company provided services to any of the companies included in the Financial Statements and received compensation for such services (e.g. provided consultation services in a non-employee capacity): None.

In Thousand NTD

Compensation Earned by a Director Who Is an Employee of UMC or UMC's Consolidated Entities				Ratio of Total Compensation (A+B+C+D+E+F+G) to Net Income (%)				Compensation from Other Non-Consolidated Entities Invested by the Company		
Base Compensation Bonuses and Special Expenses etc. (E)		Severance Pay and Pensions (F)	Employees' Profit Sharing Bonus (G)							
The Company	Companies in the Consolidated Financial Statements		The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements				
				Cash	Stock	Cash	Stock			
39,155	47,959	290	290	9,360	0	9,360	0	0.68	0.90	1,680

Remuneration Paid to Directors (Including Independent Directors), Presidents and Vice Presidents (Continue)

Remuneration Range for Each Director in the Company	Names of Directors			
	Sum of the First 4 Items (A+B+C+D)		Sum of the First 7 Items (A+B+C+D+E+F+G)	
	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements
Lower than NTD 1,000,000	Jason Wang SC Chien			
NTD 1,000,000 (inclusive)~ NTD 2,000,000 (exclusive)	Stan Hung Hsun Chieh Investment Co., Ltd. Silicon Integrated Systems Corp.	Hsun Chieh Investment Co., Ltd. Silicon Integrated Systems Corp.	Hsun Chieh Investment Co., Ltd. Silicon Integrated Systems Corp.	Hsun Chieh Investment Co., Ltd. Silicon Integrated Systems Corp.
NTD 2,000,000 (inclusive)~ NTD 3,500,000 (exclusive)	Cheng-Li Huang Wenyi Chu Lih J. Chen Jyuo-Min Shyu Chung Laung Liu Ting-Yu Lin	Cheng-Li Huang Wenyi Chu Lih J. Chen Jyuo-Min Shyu Chung Laung Liu Ting-Yu Lin Jason Wang SC Chien	Cheng-Li Huang Wenyi Chu Lih J. Chen Jyuo-Min Shyu Chung Laung Liu Ting-Yu Lin	Cheng-Li Huang Wenyi Chu Lih J. Chen Jyuo-Min Shyu Chung Laung Liu Ting-Yu Lin
NTD 3,500,000 (inclusive)~ NTD 5,000,000 (exclusive)				
NTD 5,000,000 (inclusive)~ NTD 10,000,000 (exclusive)	Stan Hung			
NTD 10,000,000 (inclusive)~ NTD 15,000,000 (exclusive)	Stan Hung			
NTD 15,000,000 (inclusive)~ NTD 30,000,000 (exclusive)	Jason Wang SC Chien			
NTD 30,000,000 (inclusive)~ NTD 50,000,000 (exclusive)	Jason Wang			
NTD 50,000,000 (inclusive)~ NTD 100,000,000 (exclusive)				
NTD 100,000,000 or More				
Total	11	11	11	11



Remuneration Paid to Directors (Including Independent Directors), Presidents and Vice Presidents (Continue)
Compensation Paid to Presidents and Vice Presidents

Title	Name	Salary(A)		Severance Pay and Pensions(B)		Bonuses and Special Expenses etc. (C)	
		The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements
Chairman & Chief Strategic Officer	Stan Hung						
President	SC Chien						
President	Jason Wang						
Executive Vice President	Ming Hsu						
Senior Vice President	Oliver Chang						
Senior Vice President & Chief Financial Officer	Chitung Liu						
Senior Vice President & General Counsel	Lucas S Chang	71,362	90,924	2,147	2,147	91,494	99,911
Vice President	TS Wu						
Vice President	C C Hsu						
Vice President	M C Lai						
Vice President	G C Hung						
Vice President	Wenchi Ting						
Vice President	Jerry CJ Hu						
Vice President	Y S Shen						
Vice President	Steven S Liu						
Vice President	SR Sheu						
Vice President	M L Liao						
Vice President	S S Hong						
Vice President	Francia Hsu						
Vice President & Chief Human Resources Officer	Eric Chen						

In Thousand NTD

The Company		Employees' Profit Sharing Bonus(D)		Ratio of Total Compensation (A+B+C+D) to Net Income (%)		Compensation from Other Non-Consolidated Entities Invested by the Company
		Cash	Stock	The Company	Companies in the Consolidated Financial Statements	
41,930	0	41,930	0	2.13	2.42	2,995

Remuneration Paid to Directors (Including Independent Directors), Presidents and Vice Presidents (Continue)

Compensation Range for Each President and Vice President in the Company	Names of Presidents and Vice Presidents	
	The Company	Companies in the Consolidated Financial Statements
Lower than NTD 1,000,000	Oliver Chang	Oliver Chang
NTD 1,000,000 (inclusive)~ NTD 2,000,000 (exclusive)		
NTD 2,000,000 (inclusive)~ NTD 3,500,000 (exclusive)		
NTD 3,500,000 (inclusive)~ NTD 5,000,000 (exclusive)		
NTD 5,000,000 (inclusive)~ NTD 10,000,000 (exclusive)	Lucas S Chang, M C Lai, G C Hung, Wenchi Ting Y S Shen, SR Sheu, M L Liao, S S Hong Francia Hsu, Eric Chen	M C Lai, G C Hung, Wenchi Ting, Y S Shen SR Sheu, M L Liao, S S Hong Francia Hsu, Eric Chen
NTD 10,000,000 (inclusive)~ NTD 15,000,000 (exclusive)	Stan Hung, Ming Hsu, Chitung Liu, TS Wu C C Hsu, Jerry CJ Hu, Steven S Liu	Stan Hung, Chitung Liu, TS Wu C C Hsu, Jerry CJ Hu, Steven S Liu
NTD 15,000,000 (inclusive)~ NTD 30,000,000 (exclusive)	SC Chien, Jason Wang	SC Chien, Ming Hsu, Lucas S Chang
NTD 30,000,000 (inclusive)~ NTD 50,000,000 (exclusive)		Jason Wang
NTD 50,000,000 (inclusive)~ NTD 100,000,000 (exclusive)		
NTD 100,000,000 or More		
Total	20	20

Remuneration Paid to Directors (Including Independent Directors), Presidents and Vice Presidents (Continue)

Employees' Profit Sharing Bonus Paid to Management Team

In Thousand NTD

Title	Name	Stock	Cash	Total	Ratio of Total Profit Sharing Bonus to Net Income (%)
Chairman & Chief Strategic Officer	Stan Hung				
President	SC Chien				
President	Jason Wang				
Executive Vice President	Ming Hsu				
Senior Vice President	Oliver Chang				
Senior Vice President & Chief Financial Officer	Chitung Liu				
Senior Vice President & General Counsel	Lucas S Chang				
Vice President	TS Wu				
Vice President	C C Hsu				
Vice President	M C Lai				
Vice President	G C Hung				
Vice President	Wenchi Ting				
Vice President	Jerry CJ Hu				
Vice President	Y S Shen				
Vice President	Steven S Liu				
Vice President	SR Sheu				
Vice President	M L Liao				
Vice President	S S Hong				
Vice President	Francia Hsu				
Vice President & Chief Human Resources Officer	Eric Chen	0	65,626	65,626	0.68
Associate Vice President	Johnson Liu				
Associate Vice President	Victor Chuang				
Associate Vice President	Chuck Chen				
Associate Vice President	S F Tzou				
Associate Vice President	Le Tien Jung				
Associate Vice President	Yau Kae Sheu				
Associate Vice President	J Y Wu				
Associate Vice President	Osbert Cheng				
Associate Vice President	Steven Hsu				
Associate Vice President	Purakh Raj Verma				
Associate Vice President	Yanan Mou				
Associate Vice President	C Y Hsu				
Associate Vice President	Remi Yu				
Associate Vice President	Michael CY Wang				
Associate Vice President	Ji Fu Kung				
Associate Vice President	C P Yen				
Associate Vice President	Mindy Lin				
Associate Vice President	Pang Min Wang				
Former Associate Vice President	T W Liu				
Former Associate Vice President	Chih Chong Wang				

Comparison of Compensation of Directors, Presidents and Vice Presidents in the Past Two Years

	2019		2018	
	The Company	Companies in the Consolidated Financial Statements	The Company	Companies in the Consolidated Financial Statements
Net Income Stated in the Parent Company Only Financial Reports (In Thousand NTD)	9,707,614	9,707,614	7,072,990	7,072,990
The Percentage of Directors' Remuneration to Net Income (%)	0.18	0.30	0.19	0.21
The Percentage of Executive officer's Compensation to Net Income (%)	2.13	2.42	8.06	8.52

Note 1: The directors' remuneration includes Base Compensation, Severance Pay and Pensions, Compensation to Directors and Business Execution Expenses. The managerial officer's compensation includes Salary, Severance Pay and Pensions, Bonuses and Special Expenses etc., and Employees' Profit Sharing Bonus.

Note 2: Relevant information during 2018 and 2019 were prepared in accordance with International Financial Reporting Standards which are endorsed by Financial Supervisory Commission.

The Company's compensation for Directors and Executive officer's is based on UMC's Articles of Incorporation and formulations, and is distributed in proper ratios.

The Standards and Policies, and Portfolios for Payment of Emoluments, Procedures for Setting Emoluments, and Correlations with Business Performance and Future Risks.

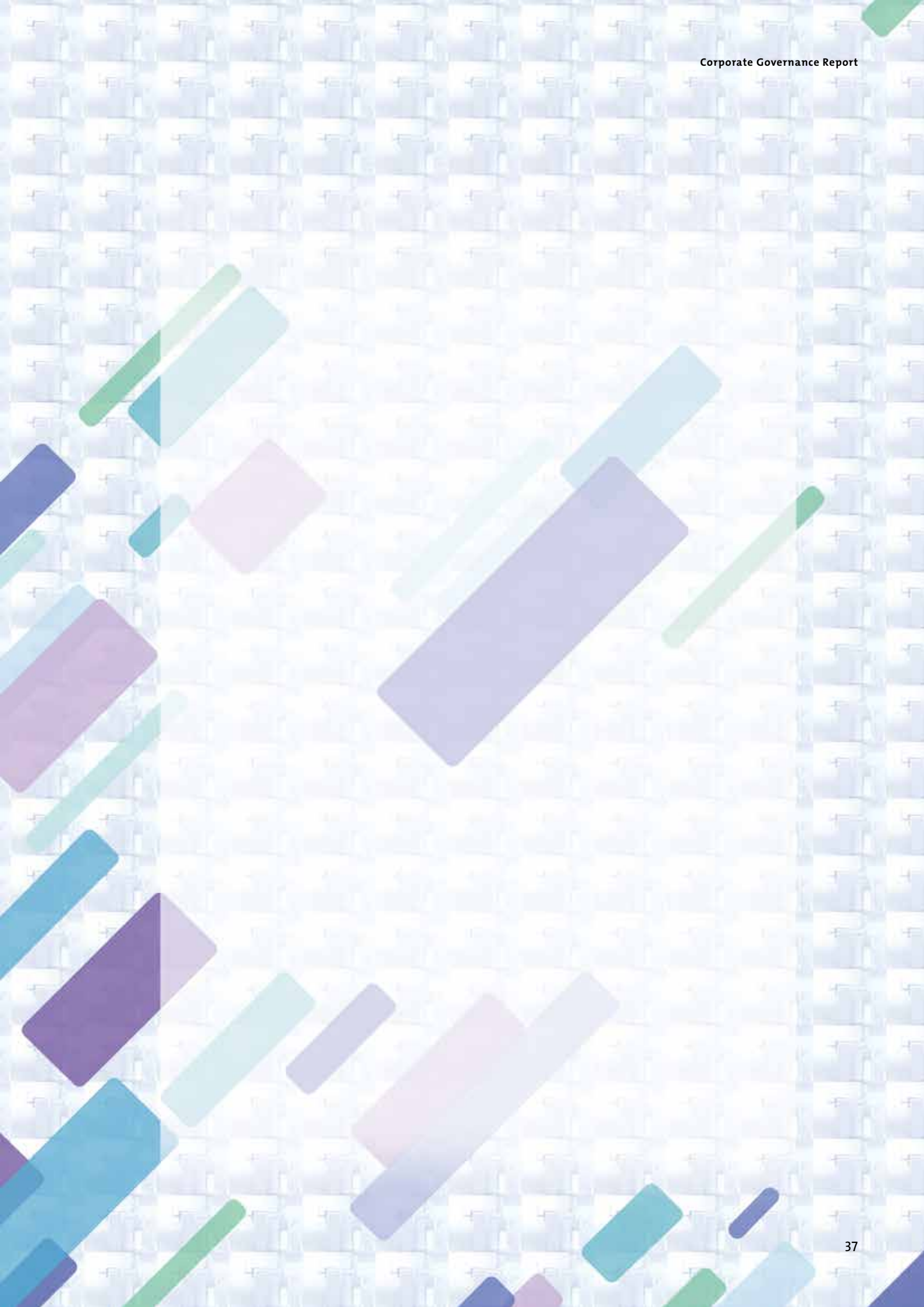
Policy for Directors' (Including Independent Directors') Compensation

Pursuant to UMC's Articles of Incorporation, Article 21-1, the Company shall allocate no more than 0.1% of profit as directors' (including Independent Directors') compensation for each profitable fiscal year after offsetting any cumulative losses. Directors (including Independent Directors) may only receive compensation in cash. In accordance with Article 17, remunerations for all directors (including Independent Directors) shall be decided by the Board of Directors authorized by a meeting of shareholders according to involvements and contributions to the Companies' operation and at the normal rate adopted by other firms of the same industry.

Policy for Management Team's Compensation

The Company annually evaluates its salary level with similar industries to ensure the Company's salary is competitive. The Company's salary structure can be divided into fixed and variable. The compensation is set to fully reflect the achievements for individuals and teams.

UMC shall assess the performance of directors and officers according to the Rules for Performance Assessment of the Board of Directors and the Performance Appraisal for employees of UMC, in order to decide their compensation. An adequate compensation scheme will be calculated by referencing the Company's operation results, future risks, corporate strategies, industry trends, and also individual contribution. The performance assessment and compensation proposals were reviewed and approved by Nominating Committee, Remuneration Committee and Board of Directors. The Company will review the remuneration policy foresaid based on macroeconomics and business strategies to achieve both corporate sustainability and the interests of stakeholders.



Corporate Governance Practices

Information of Board Meeting Operation

Board Meetings were held 6 times in 2019; all independent directors attended each meeting in person; the average attendance rate of all directors was 100%; the attendances of directors were as follows:

Title	Name	Attendance in Person	By Proxy	Attendance Rate (%)	Remarks
Chairman	Stan Hung	6	0	100.00	
Independent Director	Cheng-Li Huang	6	0	100.00	
Independent Director	Wenyi Chu	6	0	100.00	
Independent Director	Lih J. Chen	6	0	100.00	
Independent Director	Jyuo-Min Shyu	6	0	100.00	
Director	Chung Laung Liu	6	0	100.00	
Director	Ting-Yu Lin	6	0	100.00	
Director	Hsun Chieh Investment Co., Ltd. Representative: SC Chien	6	0	100.00	
Director	Silicon Integrated Systems Corp. Representative: Jason Wang	6	0	100.00	

Other mentionable items:

- If any of the following circumstances occur, the dates of the meetings, sessions, contents of motion, all independent directors' opinions and the company's response should be specified:
 - Matters referred to in Article 14-3 of the Securities and Exchange Act: The Company has established an Audit Committee, and Article 14-3 of the Securities and Exchange Act is not applicable to the Company. Please refer to Page 41-43 of the Annual Report for related information of the operation status of the Audit Committee.
 - Other matters involving objections or expressed reservations by independent directors that were recorded or stated in writing that require a resolution by the board of directors: None.
- If there are directors' avoidance of motions in conflict of interest, the directors' names, contents of motion, causes for avoidance and voting should be specified:
 - Proposals for retroactive recognition of UMC's disposal of Machinery and Equipment to United Semiconductor (XIAMEN) Co., Ltd. and UMC's Singapore branch to lend funds to United Semiconductor (XIAMEN) Co., Ltd. on March 6, 2019: Director SC Chien was in conflict of interest and avoided the discussion and vote of the proposal since he also served concurrently as the Director of United Semiconductor (XIAMEN) Co., Ltd. The proposal was approved without dissent by all other Directors in attendance.
 - Proposal for UMC's donation to UMC Science and Culture Foundation on March 6, 2019: Chairman Stan Hung and Director SC Chien were in conflict of interest and avoided the discussion and vote of the proposal since Chairman Stan Hung and Director SC Chien also served concurrently as the Directors of UMC Science and Culture Foundation. The proposal was approved without dissent by all other Directors in attendance.
 - Proposal for approving the distributable compensation for managerial officers on March 6, 2019, June 19, 2019 and December 18, 2019: Directors who also served concurrently as the Company's managerial officers were in conflict of interest and avoided the discussion and vote of the proposal. The proposal was approved without dissent by all other Directors in attendance.
 - Proposal for approving to adjust the attendance fee of the Audit Committee on December 18, 2019: Directors who also attended the Audit Committee were in conflict of interest and avoided the discussion and vote of the proposal. The proposal was approved without dissent by all other Directors in attendance.

3. For the information of evaluation cycles, periods, scope, method and content of self-evaluation of the Board of Directors, please refer to the execution status of the self-evaluation of the Board of Directors.

4. Measures taken to strengthen the functionality of the board:

To implement corporate governance and enhance the Nomination and Election of the Board, the Company designated a Company Secretary in 2019, and “Policy for Nomination and Election of Directors” and “Skill Matrix of Board Members,” which are references for the composition structure of the Board established by the Nominating Committee. Aside from conducting board performance evaluation every year, the Company also engaged with TAIWAN CORPORATE GOVERNANCE ASSOCIATION to implement performance evaluation of the Board of Directors in 2018, please refer to the Company’s website for the evaluation report: http://www.umc.com/English/investors/Corp_Gov.asp

Note : Attendance rate is calculated by using the number of meetings each board member actually attends and the total number of board meetings held within his or her service period.

Execution Status of the Board Evaluation

Evaluation Cycle	Evaluation Period	Evaluation Scope	Evaluation Method	Evaluation Content
Annually	2019/1/1~2019/12/31	The Company's board self-evaluation scope covers the evaluation of the board, functional committees and individual board members.	Self-evaluation of the board, its functional committees and individual board members' performance	<p>1. The self-evaluation of the board of directors includes the following aspects:</p> <ul style="list-style-type: none"> (1) Participation in the operation of the company; (2) Improvement of the quality of the board of directors' decision making; (3) Composition and structure of the board of directors; (4) Election and continuing education of the directors; and (5) Internal control. <p>2. The self-evaluation of the functional committees includes the following aspects:</p> <ul style="list-style-type: none"> (1) Participation in the operation of the company; (2) Awareness of the duties of the functional committee; (3) Improvement of quality of decisions made by the functional committee; (4) Composition of the functional committee and election of its members; and (5) Internal control. <p>3. The self-evaluation of board members includes the following aspects:</p> <ul style="list-style-type: none"> (1) Familiarity with the goals and missions of the company; (2) Awareness of the duties of a director; (3) Participation in the operation of the company; (4) Management of internal relationships and communication; (5) The director's professionalism and continuing education; and (6) Internal control.

Operation of the Audit Committee

The Audit Committee assists the Board of Directors in performing its supervision functions. It is also responsible for tasks defined by the Company Act, Securities and Exchange Act and other relevant regulations. Since UMC is listed on the NYSE, it also has to comply with the U.S. regulations regarding foreign issuers. The Audit Committee is comprised of all independent directors, with 2 financial experts and operating according to the Audit Committee Charter (please refer to the Company's website at http://www.umc.com/English/pdf/Audit_Committee_Charter_Eng.pdf).

According to the relevant regulations, the Audit Committee shall convene at least four regular meetings per year. In 2019 a total of five meetings were convened; it shall also maintain good communication channels with the Company's internal auditors, independent auditors, and management.

The Audit Committee is responsible for periodic review of the following important annual matters :

- Financial statements
- Internal control system
- Material transactions of assets, derivatives, loans, endorsements, guarantees
- Audit plans of internal and external auditors and their execution status
- Engaging and removing the Company's independent auditors and accessing such auditors' remuneration and independence
- Risks and control procedures of compliance with government law
- Execution of documentation that involves government agencies
- Implementation of Whistleblower Program and Code of Conduct

Information of Audit Committee Operation

There were five Audit Committee meetings in 2019, and the attendance status is shown in the following table:

Title	Name	Attendance	Proxy Attendance	Actual Attendance Rate (%)	Note
Independent Director	Cheng-Li Huang	5	0	100.00	Audit Committee convener
Independent Director	Wenyi Chu	5	0	100.00	
Independent Director	Lih J. Chen	5	0	100.00	
Independent Director	Jyuo-Min Shyu	5	0	100.00	

Operation of the Audit Committee (Continue)

Other Matters to Be Recorded:

1. If the Audit Committee operates in any of the following circumstances, the date and session of the Board meeting, the content of motion, the resolution of Audit Committee, and the company's response to the opinion of the Audit Committee should be specified:

(1) Items listed in Article 14-5 of Securities and Exchange Act

Date/Session of Board Meeting	Content of Motion	Resolution of the Audit Committee	Company's Response to the Opinion of the Audit Committee
March 6, 2019, the 7 th meeting of the 14 th session	<ol style="list-style-type: none"> 1. Approved the 2018 Consolidated Financial Statements (including Parent Company only Financial Statements). 2. Approved the 2018 Statement of Internal Control System. 3. Approved the content of appointed service and fee for the independent auditor appointed in 2019. 4. Approved the Company's donation to UMC Science and Culture Foundation. 5. Approved amendment of the UMC Acquisition or Disposal of Assets Procedure. 6. Approved amendment of the UMC Financial Derivatives Transaction Procedure. 7. Approved for UMC's Singapore branch to lend funds to United Semiconductor (Xiamen) Co., Ltd. 8. Approved termination of the issuance plan for private placement, which was approved at the 2018 Annual General Meeting. 	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
April 24, 2019, the 8 th meeting of the 14 th session	<ol style="list-style-type: none"> 1. Approved the Q1 2019 Consolidated Financial Statements. 2. Approved amendment of the UMC Loan Procedure. 3. Approved amendment of the UMC Endorsements and Guarantees Procedure. 	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
July 24, 2019, the 10 th meeting of the 14 th session	<ol style="list-style-type: none"> 1. Approved the Q2 2019 Consolidated Financial Statements. 2. Approved to decrease the endorsement and guarantee of the syndication loan for United Semiconductor (Xiamen) Co., Ltd. 	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.

Operation of the Audit Committee (Continue)

Date/Session of Board Meeting	Content of Motion	Resolution of the Audit Committee	Company's Response to the Opinion of the Audit Committee
October 30, 2019, the 11 th meeting of the 14 th session	1. Approved the Q3 2019 Consolidated Financial Statements.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
December 18, 2019, the 12 th meeting of the 14 th session	1. Approved the revision of the internal control system and internal audit implementation rules. 2. Approved to decrease the endorsement and guarantee of the syndication loan for United Semiconductor (Xiamen) Co., Ltd. 3. Approved the content of appointed service and fee of independent auditor appointed.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
February 26, 2020, the 13 th meeting of the 14 th session	1. Approved the 2019 Consolidated Financial Statements (including Parent Company only Financial Statements). 2. Approved the 2019 Statement of Internal Control System. 3. Approved for UMC's Singapore branch to lend funds to United Semiconductor (Xiamen) Co., Ltd. 4. Approved issuing restricted stock awards for employees. 5. Approved the content of appointed service and fee for the independent auditor appointed in 2020. 6. Approved the Company's donation to UMC Science and Culture Foundation.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.

(2) There were no other resolutions that were not approved by the Audit Committee but were approved by two thirds or more of all directors in 2019.

2. Implementation of avoidance of independent director with respect to motion of stake: there was no such situation in the Audit Committee in 2019.

3. The communication channels between the independent directors, internal auditors, and independent auditors:

(1) The Company's Audit Division sends the audit reports and follow-up reports on deficiencies to independent directors monthly. Besides these measures, the Internal Audit head presents the findings of all audit reports and communicates follow-up reports with independent directors during the Audit Committee's quarterly meetings.

(2) Each quarter, the Company's independent auditors present the findings of their review or audit reports regarding the financial results and internal control of the Company and its subsidiaries. The independent auditors are also required to communicate to the Audit Committee the impact of IFRSs updates and announcements, any issues under applicable laws and regulations that might affect the financial reports, as well as whether to adjust the entries.

(3) The Internal Audit head, the independent auditors and independent directors can contact each other as needed. The communication channels are seamless.

For the communication between independent directors, internal audit head, and independent auditors, please refer to the Company's website: http://www.umc.com/English/investors/audit_committee/2019_communication.asp

Corporate Governance Implementation Status and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies”

Evaluation Item	Yes	No
	1. Does the company establish and disclose the Corporate Governance Best-Practice Principles based on “Corporate Governance Practice Principles for TWSE/TPEX Listed Companies?”	✓
2. Shareholding Structure & Shareholders’ Rights		
(1) Does the company establish an internal operating procedure to deal with shareholders’ suggestions, doubts, disputes and litigations, and implement based on the procedure?		✓
(2) Does the company possess the list of its major shareholders as well as the ultimate owners of those shares?	✓	
(3) Does the company establish and execute the risk management and firewall system within its conglomerate structure?	✓	
(4) Does the company establish internal rules against insiders trading with undisclosed information?	✓	
3. Composition and Responsibilities of the Board of Directors		
(1) Does the Board develop and implement a diversified policy for the composition of its members?	✓	
(2) Does the company voluntarily establish other functional committees in addition to the Remuneration Committee and the Audit Committee?	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
Abstract Explanation	
The UMC Corporate Governance Practice Principles is posted on the Corporate Governance section of UMC’s website for stakeholders to download. Please refer to: http://www.umc.com/English/pdf/UMC_Corporate_Governance_Practice_Principles_20191030_eng.pdf	None
UMC has designated a specific contact window (ir@umc.com) and included a Investor Relations section on the Stakeholder Contacts of the Company’s website to deal with shareholders’ suggestions, doubts, disputes and litigation. Please refer to the Company’s website for stakeholders’ contact: http://www.umc.com/English/CSR/c_2.asp	UMC deals with shareholders’ suggestions, doubts, disputes and litigation based on “the Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies.” UMC does not establish an internal operating procedure.
UMC possesses the list of its major shareholders as well as the ultimate owners of those shares.	None
UMC has established relevant control mechanisms within its internal regulations and internal control systems in accordance with laws and regulations (including “Rules for Regulating Related Party Transactions”).	None
UMC has formulated the Provisions on Insider Trading Prevention Policies and Control Procedures and is committed to advocating policies against insider trading.	None
UMC has established the Policy for Nomination and Election of Directors that takes into account the Company’s organizational culture, business model and long-term development, and has also established criteria to ensure the diversity of the Board members. The UMC Board of Directors comprises of 9 members from different professional backgrounds, and is responsible for company operation and supervision. The diverse academic and industrial experiences of the Board members are an asset to corporate decision-making and long-term strategic planning. Currently, the Board has 4 seats for independent directors and 2 for outside directors, while 3 serve as administrative directors. Two thirds of the director seats are filled by members of outside companies. There is 1 female director seat, and based on our policy of gender equality, UMC will increase the seats of female directors progressively. The Board of UMC is composed of members with diversified backgrounds of industry, government and academia; board members’ experiences include the president of a national university, academician of Academia Sinica, the Minister of Science and Technology, president of ITRI, financial experts of finance, accounting and strategy management fields, and professionals from semiconductor and ICT businesses. The directors are qualified on the basic criteria, and professionalism requirements can also contribute to supervising and governing the issues on corporate governance, environmental sustainability, corporate social responsibility, legal compliance and human rights protection through the sub-committees. Please refer to UMC’s Policy for Nomination and Election of Directors for UMC Board diversification criteria, the Directors’ Information and the Skill Matrix of Board members for implementation of Board diversification on the Company’s website: http://www.umc.com/English/investors/Corp_Gov.asp	None
To meet the needs of industrial characteristics and operations, UMC has established the Capital Budget Committee. The Committee currently comprises of four independent directors and two external directors responsible for assisting UMC with its long-term development strategy, financial planning and business performance. For the sustainable development of UMC and assisting the Board with enhancing its management mechanism and improving corporate governance, UMC established the Nominating Committee. The Committee comprises of all independent directors who are responsible for searching and reviewing the candidate list of the directors and executives accordingly, executing the performance assessment of the directors and executives, and supervision of corporate governance. For information on the Capital Budget Committee and the Nominating Committee, please refer to the UMC’s website at http://www.umc.com/English/investors/Corp_Gov.asp	None

Corporate Governance Implementation Status and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” (Continue)

Evaluation Item	Yes	No
	<p>(3) Does the company establish a standard to measure the performance of the Board, and implement it annually? Are the implemented results reported to the Board, and used as a reference for individual directors' compensation and nomination renewal?</p>	✓
<p>(4) Does the company regularly evaluate the independence of CPAs?</p>	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
Abstract Explanation	
<p>UMC has formulated Rules for Performance Evaluation of the Board of Directors and implemented it accordingly.</p> <p>A. The Company conducted annual self-evaluation of the BOD, its functional committees and individual board members’ performance. In 2019, the Nominating Committee conducted the self-evaluation of the Board of Directors, functional committees and individual board members and reported the result to the Nominating Committee and Board of Directors on February 26, 2020. The performance result was “Excellent”.</p> <p>B. The performance of the Board is also implemented by an external independent professional institution or a panel of external experts and scholars at least once every three years. The Company engaged with an external assessment institution to implement performance evaluation of the Board of Directors in 2018. Please refer to the Company’s website for “The Rules for Performance Evaluation of the Board of Directors”: http://www.umc.com/English/pdf/The_Rules_for_Performance_Evaluation_of_the_Board_of_Directors_eng.pdf. The Company’s Directors’ Compensation is regulated in the Company’s Articles of Incorporation. The Company shall allocate no more than 0.1% of profit as directors’ compensation for each profitable fiscal year, so Directors’ Compensation is linked to the performance of the Company’s operation and the Board. According to the Policy for Nomination and Election of Directors, performance assessment of the board is used as a reference for nomination and election of Directors.</p>	None
<p>UMC’s Audit Committee regularly evaluates the internal quality control procedures and independence of independent auditors, and reports to the Board of Directors for approval:</p> <p>A. Auditor Independence Declaration.</p> <p>B. All audit and non-audit services provided by independent auditors are first reviewed by the Audit Committee to ensure that non-audit services do not influence audit outcome.</p> <p>C. The same independent auditor has not performed audit services for more than five consecutive years.</p> <p>D. UMC evaluates the independence and competence of the external auditor annually, including the size and reputation of the accounting firm, the nature and extent of providing non-audit services, peer review, quality of audit services, whether there are any legal proceedings, etc.</p>	None

Corporate Governance Implementation Status and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” (Continue)

Evaluation Item	Yes	No
	<p>4. Does the company have an adequate number of corporate governance personnel with appropriate qualifications and appoint a chief corporate governance officer to be in charge of corporate governance affairs (including but not limited to providing information for directors and supervisors to perform their functions, assisting directors and supervisors with legal compliance, handling matters relating to board meetings and shareholders meetings according to laws, producing minutes of board meetings and shareholders meetings)?</p>	✓
<p>5. Does the company establish a communication channel and build a designated section on its website for stakeholders (including but not limited to shareholders, employees, customers, and suppliers), as well as handle all the issues they care for in terms of corporate social responsibilities?</p>	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies” and Reasons
<p>Abstract Explanation</p> <p>UMC has established the Nominating Committee to strengthen the functions of the Board of Directors, ensure shareholders’ rights, and supervise relevant departments in the formulation of corporate governance rules and systems. The appointment of the Chief Corporate Governance Officer was approved by the Nominating Committee and Board of Directors on March 6, 2019. The Chief Corporate Governance Officer is the CFO who has been in a managerial position for at least three years in a public company in handling financial and stock affairs. The Chief Corporate Governance Officer had already completed 15 hours of training in 2019, and will complete professional training in accordance with laws and regulations. The key task of the Chief Corporate Governance Officer is supervising finance division’s convening of Board meetings and shareholders meetings, producing meeting agendas, minutes and information disclosures, providing business information required by the directors, assisting the directors with legal compliance, and assisting the directors with their responsibilities and in-service training. In addition, every year the Chief Corporate Governance Officer communicates with the independent directors on corporate governance-related affairs on a regular basis.</p> <p>The following are the 2019 Corporate Governance tasks, and a report has been submitted to the Nominating Committee and Board of Directors:</p> <ol style="list-style-type: none"> 1. Ensure that Board members are promptly informed of key company information, and immediately notified after the company has issued a press release. 2. Institute a Nominating Committee under the Board of Directors to supervise corporate governance plans and implementation by UMC and its subsidiaries. Regularly report UMC’s key operational and governance issues or legal amendments to the Board. 3. Arrange the required number of hours of in-service education for members of the Board, evaluate and purchase appropriate Directors’ and Officers’ Liability Insurance and report its contents to the Board of Directors. 4. Convene communication meetings on an as needed basis for independent directors, independent auditors and the head of auditing, finance and accounting to implement internal control. 5. Notify Board of Directors members of the agenda seven days before Board meetings, convene meetings and provide meeting materials. Avoid presence during discussion and voting where a motion presents a conflict of interest. Complete and submit minutes of the Board of Directors meeting to each Board member within 20 days after the meeting. 6. To fulfill corporate governance, evaluate the performance of the Board of Directors, functional committees and individual board members according to the Rules for Performance Evaluation of the Board of Directors, and accept external evaluation at least once every three years. 7. Conduct investor briefings on quarterly business performance, participate in periodic investment forums, designate specialists to service shareholders and establish multi communication channels for investors. 8. Schedule shareholders’ meeting in accordance with the law, complete and post meeting notifications, issue the meeting handbook and minutes within the legally mandated time frame, record changes such as Articles of Incorporation of UMC or Board re-election within the legally mandated time frame. 	None
<p>UMC’s Corporate Sustainability Committee is responsible for stakeholders and identifying issues across the Company. The Committee is also responsible for establishing consultation and communication channels with stakeholders in accordance with internal operational mechanisms, designating specialists to receive, record and respond to messages and input from various stakeholders. The Corporate Sustainability Committee conducts annual review of key corporate social responsibility issues and contingency plans to determine appropriate responses and publicly disclose relevant stakeholder communication information through the annual Corporate Social Responsibility Report and UMC’s website, and at the same time reports key stakeholder concerns and countermeasures at Board meetings.</p>	None

Corporate Governance Implementation Status and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” (Continue)

Evaluation Item	Yes	No
	6. Does the company appoint a professional shareholder service agency to deal with shareholder affairs?	✓
7. Information Disclosure		
(1) Does the company have a corporate website to disclose both financial standings and the status of corporate governance?	✓	
(2) Does the company have other information disclosure channels (e.g. building an English website, appointing designated people to handle information collection and disclosure, creating a spokesman system, webcasting investor conferences)?	✓	
(3) Does the company announce the annual financial report within 2 months after the end of the fiscal year, and announce the Q1, Q2, Q3 financial reports and monthly operation status before the deadlines?	✓	
8 Is there any other important information to facilitate a better understanding of the company’s corporate governance practices (e.g., including but not limited to employee rights, employee wellness, investor relations, supplier relations, rights of stakeholders, directors’ and supervisors’ training records, the implementation of risk management policies and risk evaluation measures, the implementation of customer relations policies, and purchasing insurance for directors and supervisors)?	✓	
9. Please explain the improvements which have been made in accordance with the results of the Corporate Governance Evaluation System released by the Corporate Governance Center, Taiwan Stock Exchange, and provide the priority enhancement measures.		

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
<p>Abstract Explanation</p> <p>UMC has appointed Horizon Securities Co., Ltd., a professional shareholder service agency, to deal with shareholder affairs.</p>	None
<p>The Company has built a corporate website and exclusive webpage to publish up-to-date information for both financial standings and the status of corporate governance at all times for investors' reference. Please refer to the Company's website for related information: http://www.umc.com/English/investors/index.asp</p>	None
<p>The Company has built Chinese and English websites and appointed a designated person to handle information collection and disclosure, including the information of investor conferences. The Company also has designated a spokesperson, acting spokesperson(s), and a specific contact window (ir@umc.com) to deal with shareholders' suggestions as per regulation. Please refer to the Company's website for related information: http://www.umc.com</p>	None
<p>The Company announces its monthly operation status within the prescribed deadlines and announces the annual and the quarterly financial reports before the deadlines. The Company's announcement of the 2019 annual financial report was completed on February 26, 2020.</p>	None
<p>(1) Continuing Education/Training of Directors: To strengthen the competency of the Board, UMC informs its directors periodically of professional courses held by relevant organizations. For Continuing Education/Training of Director, please refer to pages 52-54 of this annual report.</p> <p>(2) Board meeting attendance: Please refer to Page 38-43 on Board of Directors Operations and Audit Committee Operations, and Page 62 on Remuneration Committee Operations in this annual report.</p> <p>(3) Risk management policies and risk measurement standards implementation: Please refer to Risk Matters in this annual report.</p> <p>(4) Customer policy implementation: Please refer to Page 127 on Market, Production and Sales Overview in this annual report and the Corporate Social Responsibility Report on the UMC website at http://www.umc.com/English/CSR/b.asp.</p> <p>(5) Employee Rights, Employment Care, Investor Relations, Supplier Relationships and Stakeholders Rights Implementation: Please refer to the Corporate Social Responsibility Report on the UMC website at http://www.umc.com/English/CSR/b.asp, and the Stakeholder Engagement - communication of stakeholders at http://www.umc.com/English/CSR/c_2_2.asp</p> <p>(6) The status of liability insurance for directors and supervisors purchased by the Company: UMC has purchased liability insurance for directors since 2000. The renewal of liability insurance for directors was completed in 2019 and was reported during the last Board Meeting.</p> <p>(7) UMC website for corporate governance policies and implementation: http://www.umc.com/English/investors/Corp_Gov.asp.</p>	None
<p>UMC was in the top 5% of rankings in “Corporate Governance Evaluation” for five consecutive years since 2015. To implement corporate governance and enhance the Company's board functions, the Company designated Company Secretary in 2019, and “Policy for Nomination and Election of Directors” and “Skill Matrix of Board Members” which are references for composition structure of the Board are established by the Nominating Committee.</p>	

Continuing Education/Training of Directors in 2019:

Title	Name	Study Period		Sponsoring Organization	Course	Training Hours	Compliance with Regulations (Note)
		From	To				
Chairman	Stan Hung	2019.07.23	2019.07.23	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	Global Trends for Sustainable Development of Corporate Social Responsibility & Adaptive Planning of Management	3	Yes
		2019.10.29	2019.10.29	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	International Anti-Tax Avoidance Development	3	Yes
Independent Director	Cheng-Li Huang	2019.07.31	2019.07.31	SECURITIES & FUTURES INSTITUTE	The Compliance of Insider Equity Trading Regulations of Listed Companies Advocacy Meeting in 2019	3	Yes
		2019.10.04	2019.10.04	TAIWAN STOCK EXCHANGE CORPORATION	ESG Investment Forum	2	Yes
		2019.11.21	2019.11.21	TAIWAN STOCK EXCHANGE CORPORATION	2019 Board Functions Enhancement Seminars	3	Yes
		2019.12.13	2019.12.13	SECURITIES & FUTURES INSTITUTE	The Hedging Practice of Derivatives of Listed Companies Seminar in 2019	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes
Independent Director	Wenyi Chu	2019.04.26	2019.04.26	SECURITIES & FUTURES INSTITUTE	Insider Trading Prevention Advocacy Meeting in 2019	3	Yes
		2019.05.07	2019.05.07	TAIWAN STOCK EXCHANGE CORPORATION	ESG Investment Forum	3	Yes
		2019.11.06	2019.11.06	TAIWAN STOCK EXCHANGE CORPORATION	2019 Board Functions Enhancement Seminars	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes
Independent Director	Lih J. Chen	2019.11.27	2019.11.27	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	15th International Corporate Governance Forum	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes

Continuing Education/Training of Directors in 2019:

Title	Name	Study Period		Sponsoring Organization	Course	Training Hours	Compliance with Regulations (Note)
		From	To				
Independent Director	Jyuo-Min Shyu	2019.03.26	2019.03.26	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The New Regulation of Cayman & BVI Government Legislation about Economic Substance Activities	1.5	Yes
		2019.05.03	2019.05.03	SECURITIES & FUTURES INSTITUTE	Insider Trading Prevention Advocacy Meeting in 2019	3	Yes
		2019.05.15	2019.05.15	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Impact of Statute for Industrial Innovation Drafts to Corporate's Tax Planning in the Future	1.5	Yes
		2019.08.13	2019.08.13	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	Internet Security & Emergency Response	1.5	Yes
		2019.11.12	2019.11.12	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	Introduction of Corporate Governance Evaluation	1.5	Yes
		2019.11.21	2019.11.21	TAIWAN STOCK EXCHANGE CORPORATION	2019 Board Functions Enhancement Seminars	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes
Director	Chung Laung Liu	2019.08.02	2019.08.02	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	Digital Transformation and Cloud Computing	3	Yes
		2019.09.03	2019.09.03	SECURITIES & FUTURES INSTITUTE	Directors & Supervisors' Principles of Performing Duties of Business Judgment	3	Yes
		2019.09.03	2019.09.03	SECURITIES & FUTURES INSTITUTE	The Discussion of International and Taiwan's Anti-Tax Avoidance Development & Enterprise Response	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes

Continuing Education/Training of Directors in 2019:

Title	Name	Study Period		Sponsoring Organization	Course	Training Hours	Compliance with Regulations (Note)
		From	To				
Director	Ting-Yu Lin	2019.07.17	2019.07.17	SECURITIES & FUTURES INSTITUTE	The Compliance of Insider Equity Trading Regulations of Listed Companies Advocacy Meeting in 2019	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes
Representative of Juristic-Person Director	SC Chien	2019.05.03	2019.05.03	SECURITIES & FUTURES INSTITUTE	Insider Trading Prevention Advocacy Meeting in 2019	3	Yes
		2019.08.02	2019.08.02	SECURITIES & FUTURES INSTITUTE	The Compliance of Insider Equity Trading Regulations of Listed Companies Advocacy Meeting in 2019	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes
Representative of Juristic-Person Director	Jason Wang	2019.07.31	2019.07.31	SECURITIES & FUTURES INSTITUTE	The Compliance of Insider Equity Trading Regulations of Listed Companies Advocacy Meeting in 2019	3	Yes
		2019.10.29	2019.10.29	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	International Anti-Tax Avoidance Development	3	Yes
		2019.12.18	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3	Yes

Note: Regulations are Applicable Subjects, Continuing Education Hours, Continuing Education Scope, Continuing Education System and Continuing Education Arrangements and Information Disclosure specified in "Directions for the Implementation of Continuing Education for Directors and Supervisors of TWSE Listed and TPEX Listed Companies."

Continuing Education/Training of Managers in 2019:

Title	Name	Course Date	Organizer	Course Title	Course Hours
Vice President	M C Lai				
Vice President	G C Hung				
Vice President	Wenchi Ting				
Vice President	Jerry CJ Hu				
Vice President	SR Sheu				
Vice President	Francia Hsu				
Vice President & Chief Human Resources Officer	Eric Chen	2019.01.18	UNITED MICROELECTRONICS CORP.	The Impact of the Sino-US Trade War on Taiwan-funded Enterprises and the Countermeasures	2
Associate Vice President	Victor Chuang				
Associate Vice President	Le Tien Jung				
Associate Vice President	Mindy Lin				
Senior Vice President & Chief Financial Officer	Chitung Liu	2019.03.25	ACCOUNTING RESEARCH AND DEVELOPMENT FOUNDATION	Consolidated Financial Statement Preparation Practice Workshop	6
Vice President	TS Wu				
Vice President	Wenchi Ting				
Vice President	SR Sheu				
Vice President & Chief Human Resources Officer	Eric Chen	2019.04.12	UNITED MICROELECTRONICS CORP.	[2019 Master Forum] Strategy of Talent and Organizational Capability	2
Associate Vice President	Victor Chuang				
Associate Vice President	Mindy Lin				
Senior Vice President & Chief Financial Officer	Chitung Liu	2019.05.16	ACCOUNTING RESEARCH AND DEVELOPMENT FOUNDATION	The Practices of Corporate Governance: The Latest Amendments to the "Company Act" and Corporate Correspondence	3
Senior Vice President & Chief Financial Officer	Chitung Liu	2019.05.17	ACCOUNTING RESEARCH AND DEVELOPMENT FOUNDATION	Analysis of Illegal Cases of Corporate "Securities Fraud" and Related Legal Liabilities	3

Continuing Education/Training of Managers in 2019:

Title	Name	Course Date	Organizer	Course Title	Course Hours
President	SC Chien				
President	Jason Wang				
Executive Vice President	Ming Hsu				
Senior Vice President & Chief Financial Officer	Chitung Liu				
Senior Vice President & General Counsel	Lucas S Chang				
Vice President	TS Wu				
Vice President	C C Hsu				
Vice President	M C Lai				
Vice President	G C Hung				
Vice President	Wenchi Ting				
Vice President	Jerry CJ Hu				
Vice President	Y S Sheng				
Vice President	Steven S Liu				
Vice President	SR Sheu				
Vice President	M L Liao	2019.05.27	UNITED MICROELECTRONICS CORP.	[Legal Course] Introduction of Trade Secrets Act	2
Vice President	S S Hong	2019.05.30			
Vice President	Francia Hsu	2019.06.05			
Vice President & Chief Human Resources Officer	Eric Chen				
Associate Vice President	Victor Chuang				
Associate Vice President	Chuck Chen				
Associate Vice President	S F Tzou				
Associate Vice President	Le Tien Jung				
Associate Vice President	Yau Kae Sheu				
Associate Vice President	J Y Wu				
Associate Vice President	Osbert Cheng				
Associate Vice President	Steven Hsu				
Associate Vice President	Yanan Mou				
Associate Vice President	Remi Yu				
Associate Vice President	Ji Fu Kung				
Associate Vice President	C P Yen				
Associate Vice President	Mindy Lin				
Associate Vice President	Pang Min Wang				

Continuing Education/Training of Managers in 2019:

Title	Name	Course Date	Organizer	Course Title	Course Hours			
Vice President	TS Wu							
Vice President	G C Hung							
Vice President	Wenchi Ting							
Vice President	Jerry CJ Hu							
Vice President	Francia Hsu							
Vice President & Chief Human Resources Officer	Eric Chen	2019.06.11	UNITED MICROELECTRONICS CORP.	[Executive Program] Innovation, Value Creation and Sustainable Development	3			
Associate Vice President	Victor Chuang	2019.06.25						
Associate Vice President	Chuck Chen							
Associate Vice President	S F Tzou							
Associate Vice President	Osbert Cheng							
Associate Vice President	Mindy Lin							
Associate Vice President	S F Tzou							
Associate Vice President	Le Tien Jung							
Associate Vice President	J Y Wu	2019.08.29				UNITED MICROELECTRONICS CORP.	[Legal Course] Strengthen the Introduction of the Legal Effect of Violation of Laws Related to Trade Secrets	1
Associate Vice President	Osbert Cheng							
Associate Vice President	Steven Hsu							
Vice President	TS Wu							
Vice President	M C Lai							
Vice President	Jerry CJ Hu	2019.09.24	UNITED MICROELECTRONICS CORP.	[Executive Program] Strategic Marketing Analysis	3			
Vice President	Steven S Liu	2019.10.17						
Associate Vice President	Chuck Chen							
Associate Vice President	Remi Yu							
Associate Vice President	Mindy Lin							

Continuing Education/Training of Managers in 2019:

Title	Name	Course Date	Organizer	Course Title	Course Hours
President	SC Chien				
Vice President	TS Wu				
Vice President	M C Lai				
Vice President	G C Hung				
Vice President	Wenchi Ting				
Vice President	Jerry CJ Hu				
Vice President	Y S Shen				
Vice President	SR Sheu	2019.09.26	UNITED MICROELECTRONICS CORP.	[Legal Course] Foreign Corrupt Practices Act	1
Vice President	M L Liao				
Vice President	S S Hong				
Vice President	Francia Hsu				
Vice President & Chief Human Resources Officer	Eric Chen				
Associate Vice President	Victor Chuang				
Associate Vice President	Steven Hsu				
Associate Vice President	Mindy Lin				
Vice President	M C Lai	2019.10.24	UNITED MICROELECTRONICS CORP.	The Wavelength of 5G (5th Generation Mobile Networks)	2
Vice President	Y S Shen				
Vice President	M L Liao				
Vice President	TS Wu				
Vice President	Steven S Liu				
Vice President	Francia Hsu				
Associate Vice President	Victor Chuang				
Associate Vice President	Chuck Chen				
Associate Vice President	Le Tien Jung				
Associate Vice President	Yau Kae Sheu	2019.11.07 2019.11.08	UNITED MICROELECTRONICS CORP.	Process Analysis for Executives	2
Associate Vice President	J Y Wu				
Associate Vice President	Yanan Mou				
Associate Vice President	Remi Yu				
Associate Vice President	Ji Fu Kung				
Associate Vice President	Mindy Lin				
Associate Vice President	Pang Min Wang				

Continuing Education/Training of Managers in 2019:

Title	Name	Course Date	Organizer	Course Title	Course Hours
Vice President	TS Wu				
Vice President	M C Lai				
Vice President	Steven S Liu				
Vice President	SR Sheu				
Associate Vice President	Victor Chuang				
Associate Vice President	Chuck Chen				
Vice President		2019.11.28	UNITED MICROELECTRONICS CORP.	Objectives & Key Results “Measure What Matters”	2
Associate Vice President	S F Tzou	2019.12.03			
Associate Vice President	J Y Wu				
Associate Vice President	Osbert Cheng				
Associate Vice President	Steven Hsu				
Associate Vice President	C Y Hsu				
Associate Vice President	Remi Yu				
Associate Vice President	C P Yen				
Associate Vice President	Mindy Lin				
Associate Vice President	Pang Min Wang				
Vice President	TS Wu				
Vice President	G C Hung				
Vice President	Jerry CJ Hu				
Vice President	Steven S Liu				
Vice President	SR Sheu				
Vice President & Chief Human Resources Officer	Eric Chen	2019.12.10	UNITED MICROELECTRONICS CORP.	[2019 Master Forum] Understanding the Essence of Business from the Financial Statements	2
Associate Vice President	Victor Chuang				
Associate Vice President	Chuck Chen				
Associate Vice President	S F Tzou				
Associate Vice President	C Y Hsu				
Associate Vice President	C P Yen				
Associate Vice President	Mindy Lin				
Senior Vice President & Chief Financial Officer	Chitung Liu	2019.12.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Trends for Technology Risk & the Governance of Information Security	3

Note: The implementation of the development plan for senior executives of each department was carried out, and the senior management training program planning will be based on the results in 2019.

The senior executive course are as follows :

[2019 Master Forum] A total of two sessions were held, with a total of 115 supervisors participating, and a course satisfaction rating of 90%.

[Executive Program] A total of four sessions were held, with a total of 111 supervisors participating, and a course satisfaction rating of 94%.

If the Company Has Adopted Corporate Governance Best-Practice Principles and Related Bylaws, Disclose How These Are to Be Searched

UMC's website has established a "Corporate Governance" section to explain the corporate governance policies and implementation. Investors could inquire about and download Corporate Governance related information from: http://www.umc.com/English/investors/Corp_Gov.asp. For corporate governance implementation status, please refer to pages 38-96 of this annual report.

Procedures for Handling Proprietary/Strictly Confidential Information

These procedures were established to create an effective system for the handling and disclosure of proprietary/strictly confidential information to prevent inappropriate disclosure, ensure the consistency and accuracy of all information publicly released by the company and provide timely education for all directors, managers and employees to follow.

Please refer to the Company's website for related information:

http://www.umc.com/English/pdf/Handling_Proprietary_Strictly_Confidential_Information_eng.pdf.

Information on the Members of the Remuneration Committee

Status	Name/Condition	Has at Least 5 years of Work Experience and the Following Professional Qualifications			Meet Criteria of Independence (Note)										Number of Other Public Companies Where the Member Concurrently Serves as a Member in Remuneration Committee	Note			
		An Instructor or Higher Position in a Private or Public College or University in the Field of Business, Law, Finance, Accounting, or the Business Sector of the Company	A Judge, Prosecutor, Lawyer, CPA or Other Specialist or Technical Professional Who Is Necessary for the Company's Business and Has Been Certified by National Examinations and Licensed by the Competent Authorities	Work Experience Necessary for Business Administration, Legal Affairs, Finance, Accounting, or Business Sector of the Company	1	2	3	4	5	6	7	8	9	10					
Independent Director	Cheng-Li Huang	Yes	Yes	Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	
Independent Director	Wenyi Chu	Yes		Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	
Independent Director	Lih J. Chen	Yes		Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	0	
Independent Director	Jyuo-Min Shyu	Yes		Yes	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	1	

Note: For those members who match the condition listed below during and two years before assuming period, "✓" is marked in the appropriate space.

- (1) Is not an employee of the Company or its affiliates.
- (2) Is not a director or supervisor of the Company or its affiliates (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (3) Does not directly or indirectly own more than 1% of the Company's outstanding shares, nor is one of the top ten non-institutional shareholders of the Company.
- (4) Is not a spouse, relative within the second degree of kinship or lineal relative within the third degree of kinship of managers specified in the column (1) or any person specified in the column (2) and (3).
- (5) Is not a director, supervisor or employee of a legal entity which directly owns more than 5% of the Company's issued shares or are the top five owners of the Company's issued shares, nor a director, supervisor or employee of a legal entity which designates a representative to serve as a director or supervisor of the Company in accordance with Article 27, paragraph 1 or 2 of the Company Act (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (6) Is not a director, supervisor or employee of other company, and more than half of directors or voting shares of other company are controlled by the same person (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (7) Is not a director, supervisor or employee of other company, and Chairman, President or Manager with equivalent position of other company are the same person or spouse (the same does not apply, however, in cases where the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (8) Is not a director, supervisor, or manager of a company which has a business relationship with the Company, nor a shareholder who owns more than 5% of such a company (the same does not apply, however, in cases where a company owns more than 20% but less than 50% of the Company's issued shares and the person is an independent director of the Company who serves concurrently as an independent director of its parent company, subsidiary, or subsidiary of the same parent company in accordance with the laws of Taiwan or with the laws of the country of the parent company, subsidiary or subsidiary of the same parent company).
- (9) Is not an owner, partner, director, supervisor, manager or spouse of any sole proprietor business, partnership, company or institution which has provided the Company and its affiliates with auditing or services of finance, business consultation and legal affairs for which the accumulated remuneration in the past two years does not exceed NTD 500,000, provided that this restriction does not apply to any member of the compensation committee, public tender offer review committee, or special committee on mergers and acquisitions who exercises powers pursuant to related regulation such as the "Securities and Exchange Act" or the "Business Mergers And Acquisitions Act."
- (10) Is not under any condition pursuant to Article 30 of the Company Act.

Operation of the Remuneration Committee:

The goal of the Remuneration Committee's operation is to strengthen corporate governance and risk control, and to evaluate and monitor the Company's remuneration system for its directors and executive officers while considering the provision of incentives to facilitate talent retention.

The main functions are to periodically review the policies and regulations for performance appraisal and remuneration of directors and executive officers, and to evaluate and prescribe the remuneration of directors and executive officers.

Annual Focus of the Remuneration Committee:

- Approval of directors' remuneration
- Manager performance and compensation structure review
- Approval of manager's salary and reward

Information of the Remuneration Committee Operation

1. The Company has a Remuneration Committee composed of four members.
2. Term of the current Committee: From June 12, 2018 to June 11, 2021.

The Company had convened three Remuneration Committee meetings in 2019 with the following attendance:

Title	Name	Number of Actual Attendance	Number of Proxy Attendance	Rate of Actual Attendance (%)	Note
Independent Director	Wenyi Chu	3	0	100.00	Remuneration Committee convener
Independent Director	Cheng-Li Huang	3	0	100.00	
Independent Director	Lih J. Chen	3	0	100.00	
Independent Director	Jyuo-Min Shyu	3	0	100.00	

Other Items That Shall Be Recorded:

1. If the Board of Directors chooses not to adopt or revise recommendations proposed by the Remuneration Committee, the date of the Directors' Meeting, session, contents of proposals, results of meeting resolutions, and the Company's disposition of opinions provided by the Remuneration Committee shall be described in detail (also, where the salary and compensation approved by the Directors' Meeting is better than that recommended by the Remuneration Committee, the differences and the reason for the approval shall be described in detail): None.
2. For the decisions made by the Remuneration Committee, if there are members who hold objection or reservation to a resolution and such objection or reservation is on record or raised through a written statement, the date, session, contents of proposals, all members' opinions, and ways in handling these opinions should be elaborated: None.
3. Major resolutions of the Remuneration Committee in 2019:

Date/ Meeting	Proposal	Resolution	Any Independent Director with a Dissenting Opinion or Qualified Opinion
March 6, 2019, the 3rd meeting of the 4th session	1. Directors' 2018 remuneration 2. Review the structure of management team's compensation and performance evaluation system, and also propose the management team's compensation	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
June 19, 2019, the 4th meeting of the 4th session	1. Management team's 2019 salary review 2. Proposal of the management team's compensation	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
December 18, 2019, the 5th meeting of the 4th session	1. Proposed adjustment of attendance fees for Audit Committee meetings 2. Proposal of management team's compensation structure	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.

Nominating Committee

The Nominating Committee, comprised of independent directors, shall assist the Board to enhance the management mechanism and to improve corporate governance with regard to the Company's sustainable development. The objectives of the Committee includes: 1. To incorporate the nomination policy and succession plans of the directors and the executives and then search for, review and propose the candidate list of the directors and executives accordingly; 2. To construct and develop the operation of the Board and the sub-committees, as well as to plan and execute the performance assessment of the Board, the sub-committees and the executive(s); 3. To enhance the corporate governance system and practices in order to protect the interests of stakeholders.

Information of Nominating Committee Operation

1. There are 4 members in the Nominating Committee.
2. The term for elected committee members is 3 years, starting from June 12, 2018 to June 11, 2021. A total of 2 Nominating Committee meetings were held in 2019. The attendance of the committee members was as follows:

Title	Name	Attendance in Person	By Proxy	Attendance Rate (%)	Remarks
Convener	Lih J. Chen	2	0	100.00	
Committee Member	Cheng-Li Huang	2	0	100.00	
Committee Member	Wenyi Chu	2	0	100.00	
Committee Member	Jyuo-Min Shyu	2	0	100.00	

Other mentionable items:

1. If the Board of Directors declines to adopt or modifies a recommendation of the Nominating Committee, it should specify the date of the meeting, session, content of the motion, resolution by the Board of Directors, and the Company's response to the Nominating Committee's opinion: None.
2. Resolutions of the Nominating Committee objected to by members or expressed reservations and recorded or declared in writing, the date of the meeting, session, content of the motion, all members' opinions and the response to members' opinion should be specified: None.
3. Major resolutions of the Nominating Committee in 2019:
Meeting on March 6, 2019
(1) Nominated the Company Secretary of the Company
(2) Approved the Company's Policy for Nomination and Election of Directors
(3) Approved the Company's Skill Matrix of Board Members
Meeting on October 30, 2019
(1) Amended the Company's Corporate Governance Practice Principles
(2) Amended the Company's Rules for Performance Evaluations of the Board of Directors

Note: Attendance Rate (%) is based on the committee member's attendance during her/his term of service.

Corporate Social Responsibility and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies”

Evaluation Item	Yes	No
	1. Does the company identify environmental, social and corporate governance issues related to the company's operations in accordance with the materiality principle?	✓
2. Does the company establish exclusively (or concurrently) dedicated first-line managers authorized by the board to be in charge of proposing the corporate social responsibility policies and reporting to the board?	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
<p>Abstract Explanation</p> <p>Through the Corporate Sustainability Committee, the Company keeps abreast of the development of domestic and foreign corporate social responsibility standards and changes in the corporate environment, reviews and improves the corporate social responsibility system of UMC, and identifies environmental, social and corporate governance issues related to the Company’s operations in accordance with the materiality principle.</p> <p>In addition, the Enterprise Risk Management Committee has also formulated enterprise risk management policies. Through risk management methods and organizations, the committee effectively prevents and controls enterprise risks, comprehensively implements them in daily operations, shapes and deepens the risk culture, and establishes complete and transparent risk communication to maintain steady operations. It also develops response strategies for major risk issues, regularly submits them to the Board of Directors for approval, reviews and updates relevant standard operating procedures to ensure the effectiveness of risk management.</p> <p>For related risk (including environmental, social and corporate governance issues), please refer to the section “Risk Management and Evaluation” of this annual report and UMC Corporate Social Responsibility Report.</p>	None
<p>The Corporate Sustainability Committee is the highest-level corporate sustainability organization within UMC. With the Co-President as Chair, the Committee coordinates UMC’s sustainable development and formulates corporate social responsibility strategies and objectives. The Committee conducts semi-annual reviews to improve performance and goal achievement. The Chair of the Committee reports promotion outcome and plans, and key stakeholders issues and countermeasures to the Board of Directors annually.</p> <p>The Corporate Sustainability Committee comprises of seven sub-committees, namely the Corporate Governance Committee, Customer Relationship Management Committee, Supplier Management Committee, Innovation Technology Committee, Human Rights and Social Participation Committee, Environment Committee and Green Manufacturing Committee. The functions of each sub-committee are briefly described below:</p> <ul style="list-style-type: none"> • Corporate Governance Committee Helps strengthen the function of the Board and shareholder equity, integrates related regulations and policies of relevant departments, and helps complete and implement the Company’s internal control system to ensure information transparency and disclosure, and compliance with regulations. • Customer Relationship Management Committee Refines customer service and quality control, improves service quality and customer satisfaction, and protects customer interests and relevant trade secrets. • Supplier Management Committee To establish a protective environment and emphasize the obligation to society, labor rights, security and health while pursuing the goal of a continuously evolving supply chain, this sub-committee develops long-term partnerships with vendors for quality, cost leadership, delivery, service/ response, and sustainability. • Innovation Technology Committee Promotes green product research and development and innovations, and leads in cutting-edge green technology. • Human Rights and Social Participation Committee Responsible for protecting the basic rights of employees and promoting communication with outside communities and society. Integrates the UMC Cultural and Educational Foundation, and with focus on education, arts, sports, public service and environmental protection, strives to promote technological research and development cooperation, long-term educational assistance, arts and sports activities and other social welfare events. • Environment Committee Promotes company-wide environmental, safety and health, energy, water and greenhouse gas emission management. Establishes sustainable supply chains and long-term partnerships with suppliers to enhance sustainable competitiveness. • Green Manufacturing Committee Promotes company-wide green processes, such as hazardous materials management and increases in resource productivity. 	None

Corporate Social Responsibility and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies” (Continue)

Evaluation Item	Yes	No
	<p>3. Environmental Issues</p>	
<p>(1) Does the company establish proper environmental management systems based on the characteristics of their industries?</p>	✓	
<p>(2) Does the company endeavor to utilize all resources more efficiently and use renewable materials which have low impact on the environment?</p>	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
Abstract Explanation	
<p>To promote its environmental safety and health management system, UMC combines daily management and comprehensive quality management activities, and incorporates environmental safety management plans into actual plant operations to achieve implementation goals. In terms of environmental safety and health risks in its operations, UMC systematically assesses the possible impact of all process activities from raw material use to waste production on the environment and employees. Projects with potentially significant environmental impact are managed and controlled through raw material assessment, substitution and reduction, process pollution source control and reduction, effective treatment of end-of-pipe pollution, and reuse of surplus by-products. Employee safety and health are fundamentally managed through equipment safety, chemical safety and operational safety.</p> <p>To achieve sustainable operations, UMC adopts a clean production and zero disasters approach to environmental protection and safety and health, and sets environmental health and safety management system goals every year. By promoting programs that reduce environmental impact and strengthen safety and health, UMC continuously improves its performance in environmental protection and safety and health management.</p>	None
<p>In 2001, UMC became the first company in Taiwan’s semiconductor industry to pass integrated environmental protection, safety and health management system certifications. Please refer to the Environmental Protection, Safety and Health Management chapters in this annual report for details on greenhouse gas reduction and management, energy conservation management, water conservation management, waste and resource recovery management, and pollution discharge and control.</p> <p>For more detailed descriptions of various energy efficiency measures, please refer to UMC’s Corporate Social Responsibility Report, which is summarized below:</p> <ul style="list-style-type: none"> • Green building UMC has incorporated energy conservation, carbon reduction and green building into its operational guidelines and goals, and introduced green building certification into all its new fabs. • Green production To achieve the goal of zero pollution, UMC has established a comprehensive new material evaluation process to effectively screen and control new materials introduced into the development of new processes so as to avoid or reduce the use of raw materials with environmental impact. • Green process The semiconductor process uses a wide variety of raw materials and requires high purity and high quality. Through improving process design and technology, UMC reduces raw material consumption, which not only reduces pollution emissions at the source, but also reduces operating costs. UMC has established a comprehensive information database to manage the incoming and requisition of raw materials for processing. In addition, in special projects to promote carbon credit, source reduction is achieved through process optimization, workflow improvement and target management. • Green design As a leader in semiconductor wafer technology, UMC not only ensures that its output wafers meet the low toxicity requirements of customers, but is also committed to reducing the environmental impact of manufacturing and developing numerous high-performance and low-cost chip design processes. • Green products Although UMC does not produce its own brands through its wafer process manufacturing, it continues to develop and incorporate numerous low-toxicity, low-energy green product technologies to provide customers with the most complete service for meeting the arrival of the green energy era. In 2006, UMC led global semiconductor manufacturers in completing third-party verification and audit of the Hazardous Substance Process Management (HSPM) system, becoming the first semiconductor manufacturer company in the world to obtain QC-080000 IECQ HSPM certification for all its fabs. • Packaging material management The materials used for shipping UMC products are in full compliance with the requirements of the European RoHS (Restriction of the use of certain Hazardous Substances in electrical and electronic equipment). All packaging materials are supplied by raw material suppliers, and are verified by impartial laboratory reports. As much as possible, packaging materials with low environmental impact are used. • Resource recycling and reuse research UMC prioritizes the reuse of recycled output waste, and continuously evaluates and introduces new technologies for reuse. UMC collaborates with qualified recycling vendors in applying for numerous recycling projects, and makes on-site improvements (such as changing liquid waste pipelines and segregated collection) to increase the types of recyclable waste. 	None

Corporate Social Responsibility and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” (Continue)

Evaluation Item	Yes	No
	<p>(3) Does the company evaluate the potential risk and opportunities of climate change on its operations and take actions?</p>	✓
<p>(4) Does the company conduct inspections about greenhouse gas, water consumption, and total weight of waste for last two years, as well as establish company strategies for energy conservation, carbon reduction, management of water consumption, and total weight of waste?</p>	✓	
4. Social Issues		
<p>(1) Does the company formulate appropriate management policies and procedures according to relevant regulations and the International Bill of Human Rights?</p>	✓	
<p>(2) Does the company declare a reasonable employee welfare measures (including salary remuneration policy, regulations for leaves and others) and integrate the company’s performance with employees’ reward?</p>	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
<p>Abstract Explanation</p> <p>In the face of climate change, UMC has formulated the UMC Climate Change Policy as the Company’s highest guiding principle for responding to climate change. UMC has also formulated the UMC Low Carbon Commitment as a guide for future carbon reduction projects.</p> <ul style="list-style-type: none"> • Climate Change Policy <ul style="list-style-type: none"> Expectations to reach carbon neutral To be the low carbon solutions provider To promote the development of a low carbon economy • Low Carbon Commitment <ul style="list-style-type: none"> Low-carbon design process Energy efficiency optimization Installing high efficiency FCs abatement in new tools Adopting green building standard for new buildings Carbon partnerships with customers and suppliers Complete carbon footprint inventory for all fabs Investing in green technology industry • Greenhouse gas emission reduction goals <ol style="list-style-type: none"> 1. (2013-2020) <ul style="list-style-type: none"> Reduce fluorinated greenhouse gas emissions intensity by 36%. Note: With 2010 as base year. 2. (2016-2020) <ul style="list-style-type: none"> Reduce electricity consumption intensity 10% in five years. Note: With 2015 as base year. <p>In addition to the disclosure of greenhouse gas emissions, potential risks and opportunities of climate change, and related management and responding measures in the Corporate Social Responsibility Report, UMC also disclosed relevant information through involvement in international CDP organization initiatives. From 2016 to 2019, UMC has been awarded “Leadership Level” in the annual evaluation of the CDP Climate Change Program for four consecutive years.</p>	None
<p>The environmental information of UMC in the past five years, such as greenhouse gas emissions, water consumption, and total weight of waste, will be disclosed in the “UMC Corporate Social Responsibility Report” every year, and verified by a third party.</p> <p>UMC has also formulated the environmental protection policy, climate change policy and water resources management policy, and promoted the reduction plans and targets at various stages as a guideline for continuous improvement.</p>	None
<p>UMC supports and respects international initiatives such as the International Labor Office Tripartite Declaration of Principles, the OECD Guidelines for Multinational Enterprises, the UN Universal Declaration of Human Rights, the UN Global Compact, the Responsible Business Alliance (RBA) and other labor and gender equality laws for the workplace, and formulates relevant policies to protect human and labor rights. The UMC Human Rights and Social Participation Committee is responsible for promoting and overseeing human rights polices and specific management plans. For related information, please refer to the UMC website at http://www.umc.com/English/CSR/c_4.asp.</p>	None
<p>UMC conducts and implements a reasonable employee welfare system; please refer to the employee benefits of operations overview in this annual report. The factors that decide the salaries of employees include educational background, work performance and market value. No employee will be discriminated against because of their gender, race, religious beliefs, political stance or marital status.</p> <p>UMC complies with local statutory regulations and systems related to leave, minimum wage, and pension and other mandatory benefits to safeguard the rights of our employees.</p> <p>In order to achieve personal, departmental and company performance goals as well as understand the job performance of employees, UMC conducts a performance evaluation of all employees every year. The information obtained can be used as a reference during employee promotions, training and when distributing compensation.</p>	None

Corporate Social Responsibility and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies” (Continue)

Evaluation Item	Yes	No
(3) Does the company provide a healthy and safe working environment and organize training on health and safety for its employees on a regular basis?	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
Abstract Explanation	
<p>UMC has three categories of safety and health education based on job characteristics:</p> <ul style="list-style-type: none"> • Company-wide safety and health education. • Plant safety and health education organized by each fab. • Safety and health related training formulated by each division according to divisional characteristics. <p>Employee contingency response and safety awareness are cultivated and their cognitive competence strengthened through continuous training and education to reduce accidents caused by unsafe conduct. UMC’s contingency response, legally required certifications, safety and health management system maintenance, special operation safety protection and supervisory staff are included in the Company’s annual training plans. In addition to planned training courses, other education and training are conducted as appropriate according to specific incident or major failure. In 2019, the 「Awareness of hazardous chemicals」 Course was held. To date, 2,099 classes have been offered, attracting a total of 82,225 participants. The courses include e-learning courses so that employees can learn safety and health knowledge without being limited by the schedule of physical courses.</p> <p>In the spirit of Benefit from Society, Give Back to Society, UMC actively promotes healthy workplace-related activities. In 2019, UMC promoted a healthy workplace lifestyle themed “My UMC Health Diary”</p> <ol style="list-style-type: none"> 1. The themed health promoting activities attracted 64,055 participants, and overall satisfaction rate was 95%. Specifically, Q1 My Stress Relief Diary - Stress Relief for Well-Being. Courses on aromatherapy and self-hypnosis relaxation skills were organized to help employees manage stress on their own, and alleviate stress-related physical and emotional problems (such as insomnia, negative emotions, etc.). A total of 1,337 individuals participated, and the average overall satisfaction rate was 92%. Q2 My Happiness Diary - Mommy Care for Well-Being Women has a very important role in families and society. On every Women and Children’s Day, we organize activities such as sharing good news, sharing parenting articles, e-Check lucky draws, lectures on women’s cancers and 3-in-1 cancer screening for women. A total of 4,424 individuals participated, and the average overall satisfaction rate was 95.6%. Q3 My Health Diary - Fight Fat and Reclaim Fitness Adopt self-managed exercise and weight loss, and report the APP data to the nursing staff. In addition, a physical therapist is hired to teach employees how to strengthen their necks, pectoral and psoas muscles, as well as daily health care. 191 people participated in the weight loss activity, losing a total of 353.4 kg. A total of 482 individuals participated, and the average overall satisfaction rate was 97.1%. Q4 My Downshifting Diary - Beat Danger Index for Health Blood pressure self-measurement and self-care health passbooks are promoted for employees with high blood pressure and abnormal lab test results. In addition, healthy blood pressure contests and lectures on blood pressure related autonomic nerves are organized to enhance employees’ sensitivity toward possible health hazards caused by hypertension. To achieve early diagnosis and early treatment, and reduce the incidence of increased infection due to chronic diseases, employee abdominal ultrasound and flu vaccination are conducted for early detection of disease risks and for increasing immunity. A total of 3,766 individuals participated, and the average overall satisfaction rate was 95.9%. 2. 31,400 utilized massage services by visually impaired masseurs. 3. 2,218 consulted with in-house physicians. 4. 1,024 donated blood, totaling 1,609 bags of blood. 5. 1,057 received abdominal ultrasound exam, and satisfaction rate was 95.1%. 6. 994 women were screened for cancer, and satisfaction rate was 96.4% (Note: The number is included in the number of Q2 health promotion activities). 7. 292 received flu vaccination. 8. A total of 407 training courses for emergency personnel were conducted, and the training rate was 100%. 9. There were 349 injuries and illnesses and emergency notifications. 	None

Corporate Social Responsibility and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies” (Continue)

Evaluation Item	Yes	No
(4) Does the company provide its employees with career development and training sessions?	✓	
(5) Does the company comply with relevant regulations and international standards about customers' health, safety, privacy, advertise and label of goods and services and establish consumer protection policy?	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
<p>Abstract Explanation</p> <p>10. There were 520 new medical examinations. 11. There were 323 high-level health examinations. 12. Administrative services (group health insurance) totaled 3,828 occasions.</p> <ul style="list-style-type: none"> • Protecting the health of employees and their families The Company provides physical and health checkups for employees, and based on the results, organizes health promotion activities for health management. Special operation inspectors are classified for case management, and doctors are hired to provide on-site health consultation services for employees. Effective health risk management and case management are implemented for all employees with abnormal test results. They are also included into the information system for monitoring, thereby achieving 100% care rate. <ol style="list-style-type: none"> 1. In 2019, a total of 12,105 employees in the Company received physical checkup. 2. Health examination reports and questionnaire outcome were classified according to the risks. Health management and consultation by on-site doctors are then arranged accordingly to achieve 100% follow-up care. <ul style="list-style-type: none"> • Employee consulting and assistance program To assist employees with physical, mental and spiritual issues, the Company provides each employee with 6 free sessions of individual counseling per year. Appointments for individual counseling are arranged through a one-on-one privacy protection mechanism. In 2019, a total of 398 individuals received the free counseling service and 125 individuals received paid services. In 2019, the UMC Health Center continued to implement health promotion activities that were well-received and supported by employees. UMC’s promotion and cultivation of a healthy workplace is deeply recognized by enterprises. In 2019, Fab 8D, Fab 8E, Fab 8F and Fab 12A received the Excellent Self-Managed Healthy Workplace certification and obtained the health promotion badge. This award symbolizes the hard work that UMC put into cultivating a healthy workplace. It demonstrates UMC’s active protection of employee health and concern for their physical and psychological rights. 	
<p>The UMC training blueprints are based on different job categories and ranks. In addition, to encourage ongoing learning and career development, company-wide education and training plans for the following year are formulated according to the outcome of the annual executive and employee training needs survey.</p>	None
<p>UMC is committed to strengthening its world-class process technology, manufacturing capability and excellent service to enhance customer service value. Since the beginning, UMC has regarded its customers as partners, and has created with them an exceptional business philosophy that is based on the spirit of United for Excellence. To achieve a win-win situation in its mission and goals, UMC integrates closely with its customers, hence rendering customer satisfaction a core company value. Specific customer-oriented behaviors involve providing total solutions from the customers’ perspective to meet customer demand for product and service quality. To this end, UMC has introduced the My UMC, My HJTC (for HJ only) and My USC (for USCXM only) online service platforms for customers to easily check product status such as order production status, shipping date and product quality data. In addition, the website also provides an Engineering Data Analysis function for customers to more easily analyze product data as needed.</p> <p>In addition to providing customers with information on the process materials for their products through the My UMC, My HJTC, My USC and My USJC online service platforms, UMC has also incorporated the Voice of Customer (VOC) instant online complaint system within the My UMC, My HJTC, My USC and My USJC service platforms for easy customer access. This interface allows customers to make requests, comments or suggestions about the Company’s products or services at any time. The system responds to customers within one working day regarding the processing of their request by relevant divisions. A specialist then assigns the customer input to the appropriate division for handling and response, and customers can check the progress at any time on the website.</p>	None

Corporate Social Responsibility and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies” (Continue)

Evaluation Item		
	Yes	No

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
Abstract Explanation	

UMC’s measures for responding to customer complaints must meet customer demand for product and service quality. To this end, there is a regular review for customer complaints, handling progress and the quality of response to ensure that each division not only offers corresponding measures but also provides subsequent series of related solutions to enhance overall customer satisfaction. UMC collects customer voice feedback in the VOC system and translates them into specific improvement actions for ongoing and comprehensive improvement of the Company’s product competitiveness and service quality.

MyUMC



MyHJTC (For HJ only)



MyUSC (For USCXM only)




MyUSJC (For USJC only)



Corporate Social Responsibility and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” (Continue)

Evaluation Item	Yes	No
(6) Does the company establish supplier’s management policy and ask to comply with regulations about environmental protection, labor and human rights, safety, health?	✓	
5. Does the company prepare a Social Responsibility Report that complies with international guidelines and is verified by a third party?	✓	
6. If the company has established the corporate social responsibility principles based on “the Corporate Social Responsibility Best-Practice Principles for TWSE/TPEX Listed Companies,” please describe any discrepancy between the Principles and their implementation:		
7. Other important information to facilitate better understanding of the company’s corporate social responsibility practices:		

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
<p>Abstract Explanation</p> <p>For consumer protection mechanisms, in order to strictly protect customer-related information, UMC has established an external document management procedure. All specifications and technical documents from customers are strictly controlled by UMC’s internal system. Therefore, we can prevent leakage of customer documents and ensure the document is utilized and proceeded appropriately. In the future, UMC will continue to accumulate smart assets, provide better products and services, work with customers to take on bigger challenges in technology development and production, and share win-win results with customers.</p> <p>UMC is ISO 9001 & IATF-16949 & QC-080000 IECQ HSPM international standards certified. The Company’s quality policies are based on these standards to provide customers with excellent product quality, reasonable price and excellent and timely service to enhance customer competitiveness. UMC adheres to the principle of continuous improvement. Through cultivating awareness in all employees, and control and technical improvement in design and production, UMC offers products that meet regulatory and customer demand for no harmful substance management, thereby fulfilling the Company’s responsibility as a global citizens to ensure environmental protection and human health and safety.</p> <p>Certificates</p> 	
<p>Based on UMC’s GG-026-004-C sustainable supply chain management review guidelines for achieving supply chains that fulfill environmental protection, social responsibility, labor and human rights, safety, health and sustainable development, UMC has formulated evaluations for reviewing the sustainable development of supply chains. The evaluation comprises of a set of assessments to rate the sustainability of suppliers, and includes indicators such as delivery time, quality, finance and operations. Suppliers with unfavorable review outcomes are offered audit counseling for improvement, and in the case of severe issues, procurement or status as qualified suppliers are terminated.</p>	None
<p>As of 2019, UMC has publicly issued a non-financial related sustainability annual report for 19 consecutive years. At the same time, the 2018 UMC Corporate Social Responsibility Report is the 14th annual report disclosing UMC’s corporate sustainable development. This report is compiled according to the GRI Standards of the Global Reporting Initiative, and is verified by a third party (certification body) in accordance with the Account Ability 1000 Assurance Standard.</p> <p>In 2020, UMC will compile the 2019 UMC Corporate Social Responsibility Report that will address major corporate social responsibility issues and stakeholder concerns, and will commission a third party to verify the report. UMC will remain transparent to the public and continue to demonstrate its commitment and determination in pursuing sustainable development.</p>	None
<p>For details of the Corporate Social Responsibility Practice Principles formulated by UMC, please refer to http://www.umc.com/English/investors/Corp_Gov.asp on the UMC website.</p> <p>The UMC corporate sustainable operations found on the UMC website shows no significance inconsistency from the Corporate Social Responsibility Best Practice Principles for TWSE/TPEX for Listed Companies. For other details, please refer to the “Corporate Social Responsibility” of this Annual Report and UMC Corporate Social Responsibility Report on the UMC website.</p>	
<p>UMC is a current member of Business Council for Sustainable Development of Taiwan (BCSD-Taiwan), Taiwan Corporate Sustainability Forum (TCSF), The Allied Association for Science Park Industries (ASIP) and Taiwan Semiconductor Industry Association (TSIA). In addition to actively promoting environmental safety and health and corporate sustainability activities, UMC also serves as a representative to provide recommendations to government and academic institutions in their formulation and development of corporate social responsibility policies. For other details, please refer to the UMC Corporate Social Responsibility Report and the Corporate Sustainability webpage at http://www.umc.com/English/CSR/index.asp on the UMC website.</p>	

Ethical Corporate Management and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies”

Evaluation Item	Yes	No
	1. Establishment of ethical corporate management policies and programs	
(1) Does the company declare its ethical corporate management policies and procedures approved by the Board of Directors, in its guidelines and external documents, implement the policies?	✓	
(2) Does the company establish policies to prevent unethical conduct, analyze and evaluate the risk of unethical conduct in operating scope periodically, at least including appropriate precautions against high-potential unethical conduct or listed activities stated in Article 2, Paragraph 7 of the Ethical Corporate Management Best-Practice Principles for TWSE/TPEX Listed Companies?	✓	
(3) Does the company establish policies to prevent unethical conduct with clear statements regarding relevant procedures, guidelines of conduct, punishment for violation, rules of appeal, and the commitment to implement the policies and recheck the policies periodically?	✓	
2. Fulfill operations integrity policy		
(1) Does the company evaluate business partners' ethical records and include ethics-related clauses in business contracts?	✓	
(2) Does the company establish an exclusively (or concurrently) dedicated unit supervised by the Board to be in charge of corporate integrity, implementation, and regularly report to the Board of Directors, at least one time a year?	✓	
(3) Does the company establish policies to prevent conflicts of interest and provide appropriate communication channels, and implement it?	✓	
(4) Has the company established effective systems for both accounting and internal control to facilitate ethical corporate management, and are they audited by Audit Division based on the results of assessment of the risk of involvement in unethical conduct to examine accordingly the compliance with the prevention programs? or engage CPAs to carry out the audit?	✓	
(5) Does the company regularly hold internal and external educational trainings on operational integrity?	✓	

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
Abstract Explanation	
<p>UMC has formulated the Code of Ethics for Directors and Officers, the Employee Code of Conduct, and the Ethical Corporate Management Best Practice Principles with approval by the Board of Directors, and the UMC Code of Conduct as regulatory guidelines for all directors, managers and employees of the Company. Please refer to the UMC websites at http://www.umc.com/English/investors/Corp_Gov.asp and http://www.umc.com/English/CSR/c_4.asp for details.</p>	None
<p>The UMC Ethical Corporate Management Best Practice Principles and the Employee Code of Conduct are provisions for addressing moral integrity, conflict of interest avoidance and business entertainment. The Company also establishes a risk assessment mechanism against unethical conduct. Other relevant education, training or tests are conducted from time to time for employee education.</p>	None
<p>All suppliers have signed the Employment Ethics Terms and Conditions Agreement in which policies and reporting channels are clearly stated. Furthermore, to strengthen and implement policies on quality, penalties for violating the above Process Change Notification (PCN) are clearly stated in the purchase order in accordance with the UMC Raw Material Supplier PCN Application Management Method (GG-Q12-008-E).</p>	None
<p>The Corporate Sustainability Committee is the highest-level corporate social responsibility organization within UMC. The Committee formulates the direction and objectives of the Company's corporate social responsibility and sustainable development, and reports to the Board of Directors annually. Ethical management is only one part of corporate sustainability. For further information, please refer to UMC website at http://www.umc.com/English/CSR/c_4.asp</p>	None
<p>Please refer to Pages 85-89 of the Employee Code of Conduct for policies and reporting channels.</p>	None
<p>The UMC Audit Division is directly under the Board of Directors/Audit Committee to ensure the independence and objectivity of audits. Each year, the Audit Division develops an annual audit plan based on risk evaluation results, including the involvement of unethical conduct, implements audit, issues audit report and tracks improvement accordingly, and conducts control self-assessment annually. The head of the audit division regularly communicates with members of the Audit Committee regarding audit results and follow-up, and presents audit affairs and discusses with independent directors during Audit Committee and Board of Directors meetings to fully communicate audit content and performance.</p> <p>UMC regularly revises its internal control system to respond promptly to environmental changes and to improve the effectiveness of design and operating. Amendments are reported to the Audit Committee and Board of Directors for approval.</p> <p>In addition, UMC is also listed on the New York Stock Exchange (NYSE) and subject to US regulations for foreign issuers. Since 2006, UMC has complied with the SOX 404 Act and has been audited by the independent auditors annually. To date, the independent auditors have issued unqualified audit reports for UMC's internal control design and implementation performance.</p>	None
<p>In accordance with the philosophy of ethical management, UMC has formulated the Code of Ethics for Directors and Officers, the Employee Code of Conduct, and the Ethical Corporate Management Best Practice Principles as regulatory guidelines for all its directors, managers and employees. From top down, these regulations enhance the quality of conduct and professional ethics of the Company and its entire staff. The abovementioned Employee code of conduct is implemented in the daily tasks and businesses of all employees through physical and on-line training courses and online self-tests.</p> <p>In 2019, UMC fabs in Taiwan and Singapore have completed the training courses and passed relevant tests.</p>	None

Ethical Corporate Management and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” (Continue)

Evaluation Item	Yes	No
	3. Operation of the integrity channel	
(1) Does the company establish both a reward/punishment system and an integrity hotline? Can the accused be reached by an appropriate person for follow-up?	✓	
(2) Does the company establish standard operating procedures for confidential reporting on investigating accusation cases and follow-up?	✓	
(3) Does the company provide proper whistleblower protection?	✓	
4. Strengthening information disclosure		
Does the company disclose its ethical corporate management policies and the results of its implementation on the company's website and MOPS?	✓	
5. The company has established the ethical corporate management policies based on the Ethical Corporate Management Best-Practice Principles for TWSE/TPEX Listed Companies, please describe any discrepancy between the policies and their implementation.		
6. Other important information to facilitate a better understanding of the company's ethical corporate management policies (e.g., review and amend its policies).		

Implementation Status	Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” and Reasons
Abstract Explanation	
<p>Article 6 of the Employee code of conduct describes measures against ethics and fraud violations, and protective and anti-retaliation measures for reporting. Employees may report violations to relevant management and supervisory units through e-mail or hotlines, and the head of the Audit Division is promptly notified of the report.</p>	None
<p>After receiving a fraud report, UMC will convene an investigative team to investigate the suspected fraud described in the report. Once investigation confirm, those found violating or breaching the Code of Conduct are to face adequate corrective action by the Company depending on the severity of the incident. The Company will protect any employee reporting ethics violation or fraud and members of the investigative team from unfair treatment or retaliation. For details, please refer to Pages 85-89 of the Employee code of conduct.</p>	None
<p>The Company will protect any employee reporting ethics violation or fraud and members of the investigative team from unfair treatment or retaliation. For details, please refer to Pages 85-89 of the Employee code of conduct.</p>	None
<p>UMC discloses its principles on ethical corporate management and relevant regulations on its website and MOPS. In addition, UMC discloses relevant information in its CSR Report.</p>	None
<p>UMC has formulated the Code of Ethics for Directors and Officers, the Employee Code of Conduct and the Ethical Corporate Management Best Practice Principles. All directors, managers and employees of the Company shall abide by the provisions of these Codes and related regulations. For employee compliance with the Employee Code of Conduct, please refer to Pages 85-89 of the Employee Code of Conduct in this annual report.</p>	
<p>For other relevant communications such as employee rights, employee care, investor relations, supplier relationships and stakeholder rights, please refer to the UMC Corporate Social Responsibility Report and the Corporate Sustainability webpage at http://www.umc.com/English/CSR/index.asp on the UMC website.</p>	

Ethical Corporate Management and Deviations from “The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies” (Continue)

Specific Measures for Ethical Management in 2018-2019

Item	Implementation Status
Legal Compliance	<ul style="list-style-type: none"> • Inter-division regulatory compliance is coordinated by the Legal Division, and other regulations are regularly reviewed by relevant divisions. • In 2019, the Legal Division coordinated overall regulatory compliance with the EU General Data Protection Regulation.
UMC Code of Conduct Implementation	<ul style="list-style-type: none"> • The content of the Codes is reviewed biennial: <ol style="list-style-type: none"> 1. Review of the Employee Code of Conduct was completed in April 2019. 2. Relevant penal provisions were added to the Employee Code of Conduct in December 2017. • Major violations of employee ethics are reported to the Audit Committee on a quarterly basis. In 2019, no major ethical violations were reported. • Employee Code of Conduct education and testing were conducted in August 2019, with 100% completion rate. • Employee Code of Conduct training course for new employees: 625 participants and a total of 937.5 hours in 2018; and 224 participants and a total of 336 hours in 2019.
UMC fair competition, intellectual property rights violations	<ul style="list-style-type: none"> • Litigation cases in each quarter of 2019 were reported to the Audit Committee. • The UMC Antitrust Policy for promoting fair competition can be found on the UMC website, and online testing is conducted regularly. Online testing for the Fair Trade Law (i.e. the Antitrust Law) was conducted in September 2019. • For intellectual property rights education, three weekly training courses are offered to new employees: Introduction to UMC Intellectual Property Rights, Trade Secrets & Basic Legal and Risk Awareness for Incoming Data. In the first half of 2019, we continued to focus on training via the eUMC website, maintaining the frequency of announcement every six months. • Introduction to UMC Intellectual Property Rights training course for new employees: 1,333 participants and a total of 653 hours in 2018; 285 participants and a total of 71.3 hours in 2019. • Trade Secrets training course for new employees: separate from UMC Intellectual Property Rights as an individual course since December 2018 with 54 participants and a total of 8.6 hours in 2018; and 285 participants and a total of 45.6 hours in 2019. • Basic Legal and Risk Awareness for Incoming Data training course for new employees: implemented since April 2018. A total of 837 participants and a total of 209.3 hours in 2018; 285 participants and a total of 71.3 hours in 2019.
Financial reporting related internal control	<ul style="list-style-type: none"> • Annual audit by external auditors and internal Audit Division. • Results of internal audits for 2019 were reported at the Audit Committee/Board of Directors meetings on a quarterly basis.

Code of Ethics for Directors and Officers

The Board of Directors (the “Board”) of United Microelectronics Corporation (the “Company”) has adopted the following Code of Ethics (the “Code”) for directors and officers of the Company. This Code applies to all directors and officers.

No code or policy can anticipate every situation that may arise. Accordingly, this Code is intended to serve as a source of guiding principles for directors and officers. Directors and officers are encouraged to bring questions about particular circumstances that may involve one or more of the provisions of this Code to the attention of the Chairman of the Board, who may consult with inside or outside legal counsel as appropriate.

Directors who also serve as officers of the Company should read this Code in conjunction with the Code of Ethics for employees governing the business conduct of Company employees.

1. Conflict of Interest.

Directors and officers must avoid any conflicts of interest between the director or officer and the Company. Any situation that involves, or may reasonably be expected to involve, a conflict of interest with the Company should be disclosed promptly to the Chairman of the Board, such as extending a loan to, providing a guarantee of the obligations of, conducting a material transaction with, selling products to or purchasing products from a director or officer (or a member of his or her immediate family¹).

A “conflict of interest” can occur when a director or officer’s personal interest is adverse to - or may appear to be adverse to - the interests of the Company as a whole. Conflicts of interest also arise when a director or officer, or a member of his or her immediate family, receives improper personal benefits as a result of his or her position as a director or officer of the Company.

This Code does not attempt to describe all possible conflicts of interest that could develop. Some of the more common conflicts from which directors or officers must refrain are set out below:

- Relationship of Company with third parties. Directors or officers may not engage in any conduct or activities that are inconsistent with the Company’s best interests or that disrupt or impair the Company’s relationship with any person or entity with which the Company has or proposes to enter into a business or contractual relationship.
- Compensation from non-Company sources. Directors or officers may not accept compensation (in any form) for services performed for the Company from any source other than the Company.

- Gifts. Directors or officers and members of their immediate families may not accept gifts from persons or entities who deal with the Company in those cases where any such gift has more than a nominal value or where acceptance of the gifts could create the appearance of a conflict of interest.
- Personal use of Company assets. Directors or officers may not use Company assets, labor or information for personal use unless approved by the Chairman of the Board or as part of an approved compensation or expense reimbursement program.

2. Corporate opportunities.

Directors and officers are prohibited from: (a) taking for themselves personal opportunities that are discovered through the use of the Company’s property, information or position; (b) using the Company’s property, information, or position for personal gain; or (c) competing with the Company.

3. Corporate assets; confidentiality.

Directors and officers are expected to protect the assets of the Company and use them efficiently to advance the interests of the Company. Those assets include tangible and intangible assets, such as confidential Company information. Directors and officers should maintain the confidentiality of information entrusted to them by the Company and any other confidential information about the Company that comes to them, from whatever source in the course of the Company’s business, in their capacity as director or officer except when disclosure is authorized or legally mandated. For purposes of this Code, “confidential information” includes all non-public information relating to the Company, its customers or suppliers.

4. Compliance with laws, rules and regulations; fair dealing. Appropriate policies and procedures are in place for compliance by directors and officers, with laws, rules and regulations applicable to the Company, including insider trading laws. Transactions in the Company’s securities are governed by the Company’s policies with respect to trading such securities.

Directors and officers shall endeavor to deal fairly with the Company’s customers, suppliers, competitors and employees. No director or officer should take unfair advantage of anyone through manipulation, concealment, abuse of privileged information, misrepresentation of material facts, or any other intentional unfair-dealing influence.

5. Accurate Reports and other Public Communications.

It is crucial that all books of accounts, financial statements and records of the Company reflect the underlying transactions and any disposition of assets in a full, fair, accurate and

Code of Ethics for Directors and Officers (Continue)

timely manner. All officers and directors who are involved in the Company's disclosure process are required to know and understand the disclosure requirements applicable to the Company that are within the scope of their responsibilities, and must endeavor to ensure that information in documents that the Company files with or submits to the ROC Securities and Futures Bureau and the U.S. Securities and Exchange Commission, or otherwise disclosed to the public, is presented in a full, fair, accurate, timely and understandable manner. Additionally, each individual involved in the preparation of the Company's financial statements must prepare those statements in accordance with our internal accounting policies, which take into account generally accepted accounting policies set forth by the IFRSs, IASs, IFRIC and SIC, which are endorsed by Financial Supervisory Commission (TIFRSs) and relevant laws and regulations applicable to the Company, ensure they are consistently applied, and follow any other applicable accounting standards and rules so that the financial statements materially, fairly and completely reflect the business transactions and financial condition of the Company.

6. Encouraging the reporting of any illegal or unethical behavior.

Directors and officers should promote ethical behavior and take steps to ensure the Company:

(a) encourages employees to talk to managers and other appropriate personnel when in doubt about the best course of action in a particular situation; (b) encourages employees to report violations of laws, rules, regulations, the Company's internal rules, or the Code of Ethics for employees to appropriate personnel; and (c) informs employees that the Company will not allow retaliation for reports made in good faith.

7. Compliance Procedures.

Any suspected violations of this Code should be reported promptly to managers, the internal auditor, the Audit

Committee or other personnel as appropriate, or in the case of an officer in accordance with the procedures set forth in the Code of Ethics for employees. No one will be subject to retaliation because of a good faith report of a suspected violation. Violations will be investigated by the Board or by a person or persons designated by the Board. Any waiver of this Code may be made only by the Board and the details of the waiver, including name and title of the receiving party of the waiver, date of the board meeting when the waiver is granted, the validity period of waiver, reason to grant the waiver and principle for granting waiver, will be promptly disclosed to shareholders and others, as required by applicable law and the Taiwan Stock Exchange listing standards. All requests for waivers or review by the Board should be made to one of the Company's independent directors.

8. Enforcement of this Code of Ethics

The Board shall determine appropriate actions to be taken in the event of violations of this Code and set forth procedure for the person who is determined to have violated to Code in the event of disagreement with the determination. Such actions shall be reasonably designed to deter wrongdoing and to promote accountability for adherence to this Code. In determining the proper course of action in a particular case, the Board shall take into account all relevant information, including the nature and severity of the violation, whether the violation appears to have been intentional or inadvertent and whether the individual in question had been advised prior to the violation.

1. "Immediate family" shall include a person's spouse, parents, children, and relatives within three degrees of kinship.

Please refer to the website http://www.umc.com/English/pdf/UMC_Ethical_Corporate_Management_Best_Practice_Principles_eng.pdf for the presentation shown above.

Employee Code of Conduct

I. Objective:

The company's objective in establishing this "Code of Conduct" is to promote ethics, honesty and professionalism within the company and among its employees. The company believes in being an integrated organization and that the action of every employee affects its entire organization and reputation. Any employee is obligated to strive for the extension of the Company's interests within legal limits, and is responsible for preventing damages or loss to the Company's interests. The company expects all employees to abide by this Code in carrying out their duties and functions so as to preserve public trust and to ensure the company's sustainable growth and development.

II. Scope:

This policy and its related procedures and measures are applicable to all employees (including senior executives and officers).

III. Content:

1. Morality and integrity

- 1-1. The company dedicates itself to abide by commercial ethics and firmly believes in the values of an integrated organization. This guideline has been introduced to outline applicable legal requirements and company policy required of the company and all employees. Any company employee with any query concerning ethics or legal matters is advised to consult with his or her division head or the company's legal division for guidance.
- 1-2. Ethical standards shall not be confined to legal compliance. Each individual shall be obligated to conduct all businesses ethically and to avoid any activity that would lead to a conflict of interest.
- 1-3. The principles governing ethics and integrity are comprised of:
 - 1-3-1. Conducting all business with integrity and truthfully recording the process of all business dealings.
 - 1-3-2. Ensuring proper confidentiality of all commercial information when executing a mission and retaining complete commercial and operational records, as well as respecting the commercial assets and intellectual properties of the company, each client and each strategic partner of the company.
 - 1-3-3. All company accounting ledgers, invoices, records, accounting entries, capital and assets must be securely cataloged and safeguarded to ensure that all company transactions and business dealings can be fairly and accurately reflected. It is strictly forbidden to fabricate, falsify or create misleading claims or to fabricate or falsify any accounting entries, records, financial reports or any other related documents, or to make any misleading claims or records, or intentionally hide or cover the state of the company's transactions; nor it is permitted to open, maintain or access any illegitimate accounts with any bank or a third party institution with which to conduct account transactions related to the company.
 - 1-3-4. It is forbidden to destroy, alter or forge any pertinent records that may likely be linked to an investigation, litigation or legal related settlement proceeding.
 - 1-3-5. When coming across incidents involving alleged unethical conduct or suspicions of violation to this rule, all personnel are obligated to inform the company's management.

2. Respect for individuals and customers:

- 2-1. The company respects the privacy and integrity of every employee and upholds strict standards of privacy and confidentiality for individual personal data. Treatment of customers and commercial data concerning other individuals shall also be bound by this principle of confidentiality.
- 2-2. Each employee should endeavor to deal fairly with the company's customers, suppliers, competitors and other employees. No employee should take unfair advantage of anyone through manipulation, concealment, abuse of privileged information, misrepresentation of material facts, or any other unfair-dealing practice.
- 2-3. The company is to maintain open communication channels that would encourage all employees to participate in company affairs and to express their opinions to supervisors of all levels.

Employee Code of Conduct (Continue)

3. Avoidance of conflict of interest:

- 3-1. Prior to engaging in any business, investment or related activity that may lead to a conflict of interest between personal and professional relationships, the employee must fully disclose such conflict of interest to, and the potential conflict must be subject to review by, the chairman & president's office. More detailed guidelines on conflicts of interest are set forth in the company's Rules of Integrity for the employees (as appendix I). All company personnel are obligated to file a report with the Human Resources Division of the company citing any probable conflict of interest that might concern the individual or the company.
- 3-2. Employees should avoid incidents that may involve a probable conflict of interest - for instance, an employee moonlighting at a non-affiliated company, or an employee negotiating or conducting business transactions with the company which would benefit such employee or the employee's family or relatives personally. Employees are prohibited to (a) take for themselves personal opportunities that are discovered through the use of corporate property, information or position, (b) use corporate property, information or position for personal gain and (c) compete with the company.
- 3-3. Any action that may possibly transfer the Company's resources or interests to employees, their relatives or friends is, in principle, prohibited. If such action is considered as beneficial for both the individual and the Company, it may be exceptionally permitted and proceeds only after obtaining the Chairman's approval. Please file a report with Appendix II.
- 3-4. All employees are prohibited to provide or disclose openly company confidential information without securing proper authorization from the company. It is strictly forbidden to trade confidential or insider information for individual gain, or to benefit others or put the company's interest in jeopardy.
- 3-5. All employees are forbidden to engage in any of the aforesaid activities through an agent, partner or any representative only to circumvent this guideline.
- 3-6. All personnel that participate in the review, evaluation and selection of vendors should avoid any circumstance that has the potential to bias a fair decision.
- 3-7. Unless otherwise approved by the board of directors in advance and in compliance with all applicable laws, employees are not permitted to take out or accept company loans on behalf of oneself or one's relative, or demand the company to issue a liability guarantee.
- 3-8. Unless for company business, advanced authorization shall be sought prior to accessing any of the company's services, equipment, facilities, properties or any other form of resources. All employees should protect the company's assets and ensure their efficient use. The company's assets, whether tangible or intangible, are to be used only by authorized employees or their designees and only for the legitimate business purposes of the company.
- 3-9. We request employees who have specific business and selected positions for management's needs and employees of designated departments to make an annual declaration of interests. If employees themselves or their relatives (up to the third degree) have investments in and/or are currently employed by UMC customers, distributors, distributors' customers, suppliers, or competitors, the status of such investments and/or employment should be reported in the "declaration of interests" system. The Human Resources Division will then be responsible for data collection and summarization in order to report results to senior executives, the President and the Chairman. However, in the case where such investment is made on firms that the Company invests in, have openly agreed to be invested in, or are of publicly listed companies, the report to superiors is not required.
- 3-10. All employees shall not exploit opportunities for information access (including but not limited to attendance at meetings related to sales and production, annual planning, policy launching) to disclose the Company's confidential information to any external parties (including but not limited to the Company's customers, suppliers, or any other parties who are not obliged to know).

4. Gratuity and business reception:

- 4-1. All employees are prohibited to accept from or give to any customer, supplier or contingent party related to the company any kickbacks or any other form of illicit gain.
- 4-2. All employees are strictly forbidden to accept gifts from the company's vendors valued at over one thousand N.T. dollars (NT\$1,000), or any cash, or any equivalent in monetary goods, i.e. gift certificates, check, stock certificate and the like.

Employee Code of Conduct (Continue)

- 4-3. All employees are forbidden to accept lavish entertainment or reception.
 - 4-4. For the purpose of maintaining a normal business relationship, gifts that are to be presented to business counterparts should be imprinted with the company's logo.
 - 4-5. It is prudent to conform to the general practice of common business decorum when accepting or arranging any type of business reception, and all employees shall refrain from being excessively lavish and refrain from incurring significant or unnecessary expenses.
5. Full, fair, accurate, timely and understandable disclosure:
- 5-1. It is crucial that all books of account, financial statements and records of the company reflect the underlying transactions and any disposition of assets in a full, fair, accurate and timely manner.
 - 5-2. All employees who are involved in the company's disclosure process are required to know and understand the disclosure requirements applicable to the company that are within the scope of their responsibilities, and must endeavor to ensure that information in documents that the company files with or submits to the Securities and Futures Bureau, Financial Supervisory Commission, Executive Yuan, ROC and the U.S. Securities and Exchange Commission, or that is otherwise disclosed to the public, is presented in a full, fair, accurate, timely and understandable manner.
 - 5-3. It is critically important that financial statements and related disclosures be free of material errors. Employees are prohibited from knowingly making or causing others to make a materially misleading, incomplete or false statement to an accountant or an attorney in connection with an audit or any filing with any governmental or regulatory entity (such as the ROC Securities and Futures Bureau, Financial Supervisory Commission, Executive Yuan, ROC, the U.S. Securities and Exchange Commission or the New York Stock Exchange).
 - 5-4. No individual, or any person acting under his or her direction, shall directly or indirectly take any action to coerce, manipulate, mislead or fraudulently influence any of the company's auditors if he or she knows (or should know) that his or her actions, if successful, could result in rendering the company's financial statements materially misleading.
6. Safeguard Associated with the Implementation of Code of Conduct and Reporting of Fraudulent Act:
- 6-1. All employees are to comply with applicable governmental laws, rules and regulations, and the company's regulations and procedures.
 - 6-2. Employees, suppliers, customers or other related stakeholders can report illegal activity or major misconduct by UMC managers or staff ("whistleblowing report") through any of the following channels:
 - 6-2-1. Send an email report to the email address whistleblower@umc.com which will then automatically forward a copy of the report to the Audit Committee, ADT Level 1 Manager, HR Level 1 Manager, and LA&C Level 1 Manager.
 - 6-2-2. Send an email report directly to any of the following: ADT Level 1 Manager: ADT_Director@umc.com; HR Level 1 Manager: HR_Director@umc.com; LA&C Level 1 Manager: z_Legal@umc.com; or the Audit Committee: Audit_committee@umc.com).
 - 6-2-3. Report the issue by calling the whistleblowing direct phone line at: 0800-024-399 (toll free) or 03-5782258 ext 31425.
 - 6-2-4. Report the issue directly to a manager in HR or any other appropriate department/division. Once the manager receives the report, they will immediately notify the ADT Level 1 Manager. Once a whistleblowing report has been received, the Company will assemble an investigation team to conduct a thorough inquiry into the allegations made in the report. More detailed guidelines on reporting processes are set forth in the company's Whistleblower Program.
 - 6-3. For the person reporting a violation of the Code of Conduct or engagement in fraud as well as any other related employee involved in all subsequent investigations of the violation, the company will provide safeguard measures ensuring them against any unfair retaliation or treatment.
 - 6-4. Those found violating or breaching the Code of Conduct are to face adequate corrective action by the company depending on the severity of the incident. It is the responsibility of each employee to carefully read, understand and comply with this Code of Conduct and, as needed, to seek clarification on any point. Questions regarding any legal or ethical requirements should be directed to the director of the Human Resources or the company's legal division.

Employee Code of Conduct (Continue)

7. Waivers and amendments:

- 7-1. The company may waive application of this Code of Conduct to employees in certain limited situations. Any waivers of the provisions of this Code of Conduct for executive officers may be granted only in exceptional circumstances by the board of directors. The company will promptly disclose to its shareholders any such waivers granted to any of its executive officers and the reason for such waiver.
- 7-2. Amendments to this Code of Conduct shall be promptly disclosed by the company. It is each individual's responsibility to maintain familiarity with this Code of Conduct as the company reviews and revises its content from time to time.

(Appendix) Rules of Employee Integrity

1. Objective: To maintain the common practice of integrity and business efficiency, the Rules of Employee Integrity has been specially stipulated.
2. While employees of the Company are engaged in all sorts of business practices, they should conform to the following principles:
 - 2-1. Any employee is obligated to strive for the extension of the Company's interests within legal limits.
 - 2-2. Any employee is responsible of preventing damages or loss of the Company's interests.
3. Rules of Integrity:
 - 3-1. Employees undertaking the business with vendors should adhere to the following principles:
 - 3-1-1. Be honest and fair while selecting vendors. Select those who present products/services with the most competitive quality, prices, and delivery.
 - 3-1-2. No accepting of rake-offs or other illegitimate interests from vendors.
 - 3-1-3. Employees and relatives are strictly forbidden to accept any gifts, cash, or other valuables worth of NTD 1,000 or above from vendors.
 - 3-1-4. In principle, employees are prohibited from accepting entertainment reception apart from simple meals. For any question regarding this principle, ask a direct superior.
 - 3-2. Employees in marketing or sales-related departments should adhere to the following principles when dealing with customers:
 - 3-2-1. Be honest and fair while transacting with customers.
 - 3-2-2. Customers' offer of gifts, cash, or other valuables should be courteously declined. In the case where such offer cannot be declined or returned and its value exceeds USD 100.00, please turn the item to the Employee Welfare Committee to be handled on a case-by-case basis.
 - 3-3. All employees should prevent any of the following from occurring and affecting the Company's interests:
 - 3-3-1. Through access to one's own duties, directly or indirectly seeking illegitimate interests or engaging in fraudulent activities.
 - 3-3-2. Seeking illegitimate interests through one's authority or identity to access duties not run or supervised by oneself.
 - 3-3-3. Defrauding others through access to one's own duties.
 - 3-3-4. Invading or stealing equipment or property from the company.
 - 3-3-5. Engaging in fraudulent activities such as over-filing for traveling expenses or overtime compensations or applying for inaccurate expenses.

Employee Code of Conduct (Continue)

- 3-4. All employees have the responsibility of maintaining a clean image of the Company, which includes no gossiping about colleagues or superiors outside of the office.
- 3-5. All supervisors must possess the ability of judging the rights and wrongs on integrity issues and should never use not regulated as excuses for any debatable conduct. Besides being honest themselves, they should lead subordinates in establishing a work environment practicing integrity.
- 3-6. Acceptance inspectors or authenticator of each business operation as well as accounting examiners have the responsibility of reporting upon discover of those violating the Rules of Integrity.
- 4. Rewards and Punishment:
 - 4-1. Rewards for reporting: Correcting or reporting on violations of integrity rules is an action of protecting the rights of employees, shareholders, and the Company. Once found to be factual, suitable rewards will be given to the reporter.
 - 4-2. Punishment:
 - 4-2-1. Punishment will be administered under any of the following occurrences:
 - A. When an employee violates the Rules of Integrity.
 - B. When a direct supervisor:
 - a. Causes his subordinate's violation of the integrity rules due to his improper supervision and guidance.
 - b. Shelters a violator of the integrity rules with knowledge of the incident.
 - C. When an acceptance inspector, authenticator, or examiner of each business operation:
 - a. Overlooks a violation of the integrity rules due to his negligence on the job.
 - b. Fails to report on any violation of the integrity rules found during acceptance inspecting, authenticating, or examining.
 - 4-2-2. Provisions on Punishment: In addition to recovering and returning the illegitimate benefits to the original owner or company, violators of the integrity rules will be inflicted, in proportion to the weight of the incident, with the following different punishments or the combination of them.
 - A. According to internal punishment regulations
 - B. Withholding of the performance cash award, year-end award and bonus
 - C. Demotion of job grade
 - D. Removal from post
 - E. Legal action
 - 4-3. Confession
 - 4-3-1. In the case where the violator of the integrity rules makes the confession afterwards, his punishment may be reduced or waived.
 - 4-3-2. In the case of a group violation of the integrity rules, the first one making the confession may be waived from his punishment.

Please refer to the website http://www.umc.com/English/pdf/Employee_Code_of_Conduct-e.pdf for the presentation shown above.

UMC Ethical Corporate Management Best Practice Principles

Article 1

In order to foster a corporate culture of ethical management and sound development, the company is advised to adopt these principles applicable to its subsidiaries and other institutions or juridical persons which are substantially controlled by such company.

Article 2

When engaging in its commercial activities, directors, managers, employees, and agents or persons having substantial control over such companies ("company personnel") shall not directly or indirectly offer, promise to offer, request or accept any improper benefits, nor commit unethical acts including breach of ethics, illegal acts, or breach of fiduciary duty ("unethical conduct") for purposes of acquiring or maintaining benefits.

Article 3

"Benefits" in these Principles means any element of value, including money, endowments, commission, positions, services, preferential treatment or rebates of any type or in any name. Benefits received or given occasionally in accordance with accepted social customs and that do not adversely affect specific rights and obligations shall be excluded.

Article 4

The company shall comply with the Company Act, Securities and Exchange Act, Business Entity Accounting Act, Political Donations Act, Anti-Corruption Statute, Government Procurement Act, Act on Recusal of Public Servants Due to Conflicts of Interest, TWSE/GTSM listing rules, or other laws or regulations regarding commercial activities, as the underlying basic premise to facilitate ethical corporate management.

Article 5

The company shall abide by the operational philosophies of honesty, transparency and responsibility, base policies on the principle of good faith and establish good corporate governance, risk control and management mechanisms to create an operational environment for sustainable development.

Article 6

According to its preceding policy, the company shall prescribe specific ethical management practices and programs to deter unethical conduct ("prevention programs"), including operational procedures, guidelines, and training.

Article 7

Company shall establish a risk assessment mechanism against unethical conduct, analyze and assess on a regular basis business activities within their business scope which are at a higher risk of being involved in unethical conduct, and establish prevention programs accordingly and review their adequacy and effectiveness on a regular basis.

Article 8

The company shall request their directors and senior management to issue a statement of compliance with the ethical management policy and require in the terms of employment that employees comply with such policy. The company clearly specifies in its rules and external documents the ethical corporate management policies and the commitment by the board of directors and the management on rigorous and thorough implementation of such policies, and carries out the policies in internal management and in commercial activities. The company shall compile documented information on the ethical management policy, statement, commitment and implementation mentioned in the first and second paragraphs and retain said information properly.

Article 9

The company engages in commercial activities in a fair and transparent manner based on the principle of ethical management.

Prior to any commercial transactions, the company will take into consideration the legality of their agents, suppliers, clients, or other trading counterparties and whether any of them are involved in unethical conduct, and will avoid any dealings with persons so involved.

UMC Ethical Corporate Management Best Practice Principles (Continue)

Article 10

When conducting business, the company and its personnel may not directly or indirectly offer, promise to offer, request, or accept any improper benefits in whatever form to or from clients, agents, contractors, suppliers, public servants, or other stakeholders.

Article 11

When directly or indirectly offering a donation to political parties, organizations or individuals participating in political activities, the company and its personnel shall comply with the Political Donations Act and their own relevant internal operational procedures, and shall not make such donations in exchange for commercial gains or business advantages.

Article 12

When making or offering donations and sponsorship, the company and its personnel shall comply with relevant laws and regulations and internal operational procedures, and shall not surreptitiously engage in bribery.

Article 13

The company and its personnel shall not directly or indirectly offer or accept any unreasonable gifts, hospitality or other improper benefits to establish business relationship or influence commercial transactions.

Article 14

The company and its personnel shall observe applicable laws and regulations, internal operational procedures, and contractual provisions concerning intellectual property, and may not use, disclose, dispose, or damage intellectual property or otherwise infringe intellectual property rights without the prior consent of the intellectual property rights holder.

Article 15

The company shall engage in business activities in accordance with applicable competition laws and regulations, and may not make rigged bids, establish output restrictions or quotas, or share or divide markets by allocating customers, suppliers, territories, or lines of commerce.

Article 16

In the course of research and development, procurement, manufacture, provision, or sale of products and services, the company and its personnel observe applicable laws and regulations and international standards to ensure the transparency of information about, and safety of, their products and services. They shall also adopt and publish a policy on the protection of the rights and interests of consumers or other stakeholders, and carry out the policy in their operations, with a view to prevent their products and services from directly or indirectly damaging the rights and interests, health, and safety of consumers or other stakeholders.

Article 17

The personnel of the company shall exercise the due care of good administrators to urge the company to prevent unethical conduct, while always reviewing the results of the preventive measures and continually making adjustments so as to ensure thorough implementation of its ethical corporate management policies.

To achieve sound ethical corporate management, the relevant competent authority shall be responsible for establishing and supervising the implementation of the ethical corporate management policies and prevention programs, and report to the board of directors annually.

Article 18

The personnel of the company shall comply with laws and regulations and the prevention programs when conducting business.

Article 19

The company shall adopt policies for preventing conflicts of interest to identify, monitor, and manage risks possibly resulting from unethical conduct, and shall also offer appropriate means for directors, managers, and other stakeholders attending or present at board meetings to voluntarily explain whether their interests would potentially conflict with those of the company.

UMC Ethical Corporate Management Best Practice Principles (Continue)

Article 20

The company shall establish effective accounting systems and internal control systems for business activities that may possibly be at higher risk of being involved in unethical conduct, not have under-the-table or secret accounts, and conduct reviews regularly so as to ensure that the design and enforcement of the systems are showing results.

The internal audit unit of the company shall devise relevant audit plans based on the results of assessment of the risk of involvement in unethical conduct, which plans shall include parties to audit and audit scope, items and frequency etc., and examine accordingly the compliance with the prevention programs. The internal audit unit may engage a certified public accountant to carry out the audit, and may engage professionals to assist if necessary. The results of examination in the preceding paragraph shall be reported to senior management and the ethical management team and reduced to writing in the form of an audit report to be submitted to the board of directors.

Article 21

The company establishes "UMC Code of Conduct", "UMC Board of Directors and Managers Code of Ethics", and "UMC Employee Code of Conduct" to guide directors, supervisors, managers, employees, and substantial controllers on how to conduct business.

Article 22

The company shall periodically organize training and awareness programs for company personnel, and should execute reward and discipline systems according to the relevant rules of the company, so they understand the companies' resolve to implement ethical corporate management, related policies, prevention programs, and the consequences of engaging in unethical conduct.

Article 23

The company shall establish a whistle-blowing system and guarantee the confidentiality of the identity of whistle-blowers and the content of reported cases.

Article 24

The company shall adopt and publish a well-defined disciplinary and appeal system for handling violations of the ethical corporate management rules, and shall properly make the announcement on the company's internal website including the title and details of the violation, and the actions taken in response.

Article 25

The company shall continuously assess the promotional effectiveness promotion of its ethical management policy. The company shall also disclose the measures taken for implementing ethical corporate management, the status of implementation, and the effectiveness of promotion on company websites, annual reports, and prospectuses, and shall disclose ethical corporate management best practice principles on the Market Observation Post System (MOPS).

Article 26

The company shall at all times monitor the development of relevant local and international regulations concerning ethical corporate management and encourage their directors, managers, and employees to make suggestions, which the company will base its review and improvements for its adopted ethical corporate management policies and measures in order to achieve better implementation of ethical management.

Article 27

The principles shall be implemented after the board of directors grants approval. The same procedure shall be followed when the principles have been amended.

Please refer to the website http://www.umc.com/English/pdf/UMC_Ethical_Corporate_Management_Best_Practice_Principles_eng.pdf for the presentation shown above.

Internal Control System Execution Status

Statement of Internal Control System

Based on the findings of self-assessment, UMC states the following with regard to its internal control system during the year 2019.

1. UMC acknowledges and understands that establishing, operating and maintaining an internal control system are the responsibilities of its Board of Directors and management, and such a system has been established. The purpose of establishing the internal control system is to reasonably assure the following objectives: The effectiveness and efficiency of operations (including profitability, performance and the safeguarding assets); reliability, timeliness, transparency of our reporting, and compliance with applicable rulings, laws and regulations.
2. The internal control system has inherent limitations. No matter how perfectly designed, an effective internal control system can only provide reasonable assurance of accomplishing the aforementioned three objectives. Moreover, the effectiveness of an internal control system may be subject to changes of environmental or circumstances. Nevertheless, our internal control system contains self-monitoring mechanism and UMC takes corrective actions whenever a deficiency is identified.
3. UMC evaluates the design and operating effectiveness of its internal control system based on the criteria provided in the Regulations Governing Establishment of Internal Control Systems by Public Companies (herein below, the "Regulations"). The criteria adopted by the Regulations identify five components of internal control based on the process of management control: (1) control environment, (2) risk assessment, (3) control activities, (4) information and communication, and (5) monitoring activities. Each component further contains several items. Please refer to the Regulations for details.
4. UMC has evaluated the design and operating effectiveness of its internal control system according to the aforesaid Regulations.
5. Base on the findings of the assessment mentioned in the preceding paragraph, UMC believes that, on December 31, 2019, its internal control system (including its supervision and management of subsidiaries), had effectively assured that the following objectives had been reasonably achieved

during the assessing period: effectiveness and efficiency of operations, reliability, timeliness, transparency of our reporting, and compliance with applicable rulings, laws and regulations.

6. This Statement is an integral part of the UMC'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 Act.
7. This Statement was passed by the Board of Directors in their meeting held on Feb. 26, 2020, with none of nine attending directors expressing dissenting opinions, and the remainder all affirming the content of this Statement.

United Microelectronics Corporation


Chairman: Stan Hung



President: S C Chien



President: Jason S Wang



Feb. 26, 2020

If a Certified Public Accountant (CPA) was Engaged to Conduct a Special Audit of the Internal Control System, Provide its Audit Report:

According to "Regulations Governing Establishment of Internal Control Systems by Public Companies," the Company was not required to engage a certified public accountant (CPA) to conduct a special audit of internal control system in 2019.

Legal Liabilities of Company and Employees, Company Penalties Toward Employee Violation of Company Regulations, Key Oversights and Improvement

None.

Major Resolutions and Implementation Status of the Shareholders' Meetings and the Board of Directors' Meetings

The Major Resolutions from the Shareholders' Meetings

The Company's 2019 Annual General Meeting was held at UMC's Fab 8S Conference Hall, No.16, Creation Rd. 1, Hsinchu Science Park on June 12, 2019. The resolutions approved by the shareholders present in person or by proxy and its implementation status were as follows:

Items	Resolutions from the Annual General Meeting	Implementation Status
1.	Acceptance of the 2018 business report and financial statements	<ul style="list-style-type: none"> In 2018, UMC's sales revenue was NTD 151,252,571 thousand, and full-year net income reached NTD 7,072,990 thousand, leading to an earnings per share of NTD 0.58.
2.	Acceptance of the 2018 Earnings Distribution Chart	<ul style="list-style-type: none"> Distribution of 2018 earnings with cash dividend of NTD 6,916,104,855. The ex-dividend record date was set for July 22, 2019, and cash dividend for common shares was paid on August 6, 2019.
3.	Approval of the amendment of the Company's "Acquisition or Disposal of Assets Procedure."	<ul style="list-style-type: none"> Implemented in accordance with resolution
4.	Approval of the amendment of the Company's "Financial Derivatives Transaction Procedure."	<ul style="list-style-type: none"> Implemented in accordance with resolution
5.	Approval of the amendment of the Company's "Loan Procedure."	<ul style="list-style-type: none"> Implemented in accordance with resolution
6.	Approval of the amendment of the Company's "Endorsements and Guarantees Procedure."	<ul style="list-style-type: none"> Implemented in accordance with resolution

Major Resolutions and Implementation Status of the Shareholders' Meetings and the Board of Directors' Meetings (Continue)

The Major Resolutions from the Board of Directors' Meeting

Meeting Date	Major Resolutions
2019.03.06	<ul style="list-style-type: none"> • Approved the 2018 Business Report and Financial Statements. • Approved the 2018 distributable compensation for employees and directors. • Approved the 2018 Dividend Distribution. • Approved termination of the issuance plan for private placement, which was approved at the 2018 Annual General Meeting. • Approved the date of convening the 2019 Annual General Shareholders' Meeting, meeting agenda and submission period for shareholder proposals. • Approved for UMC's Singapore branch to lend funds to UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. • Approved the capital reduction for the cancellation of treasury shares. • Approved UMC's donation to UMC Science and Culture Foundation. • Approved to designate a Company Secretary.
2019.04.24	<ul style="list-style-type: none"> • Approved the Q1, 2019 Consolidated Financial Statements. • Approved capital budget execution. • Approved addition of proposals of the 2019 Annual General Shareholders' Meeting. • Approved the Company's 20th share repurchase program.
2019.06.19	<ul style="list-style-type: none"> • Approved the adjustment of 2018 cash dividend ratio. • Approved the record date for 2018 cash dividend. • Approved the capital reduction for the cancellation of treasury shares.
2019.07.24	<ul style="list-style-type: none"> • Approved the Q2, 2019 Consolidated Financial Statements. • Approved capital budget execution.
2019.10.30	<ul style="list-style-type: none"> • Approved the Q3, 2019 Consolidated Financial Statements.
2019.12.18	<ul style="list-style-type: none"> • Approved capital budget execution.
2020.02.26	<ul style="list-style-type: none"> • Approved the 2019 Business Report and Financial Statements. • Approved the 2019 distributable compensation for employees and directors. • Approved the 2019 Dividend Distribution. • Approved capital budget execution. • Approved issuing Restricted Stock Awards for employees. • Approved the date of convening the 2020 Annual General Meeting, meeting agenda and submission period for shareholder proposals. • Approved for UMC's Singapore branch to lend funds to UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. • Approved UMC's donation to UMC Science and Culture Foundation.

Major Issues of Record or Written Statements Made by Any Director Dissenting to Important Resolutions Passed by the Board of Directors during 2019 and as of the Annual Report Printing Date:

None.

Resignation or Dismissal of Chairman, President, and Heads of Accounting, Finance, Internal Audit and R&D during 2019 and as of the Annual Report Printing Date:

None.

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

Certification Name	Number of Employees		
	Audit	Accounting	Finance
Certified Public Accountants (CPA)	2	15	1
US Certified Public Accountants (US CPA)		4	1
Association of Chartered Certified Accountants Singapore (ACCA Singapore)		1	
Certified Internal Auditor (CIA)	1	3	
CABIAV Certificate of Certified Business Valuator		2	1

Certified Public Accountant (CPA) Fee Information

For the Non-Audit Fee Paid to CPA, CPA Firm, and Its Affiliate Greater than 1/4 of the Audit Fee, the Amount of Audit and Non-Audit Fee and Content of Non-Audit Service Should Be Disclosed

If there is no such thing, please refer to the following table.

Name of CPA Firm	Name of CPA	Audit Fee	Non-Audit Fees				CPA Audit Period	Remark	
			System Design	Business Registration	Human Resources	Others (Note)			Subtotal
Ernst & Young, Taiwan	Wan-Ju Chiu, Hsin-Min Hsu	65,983		23	30	1,042	1,095	2019.01.01~2019.12.31	-

In Thousand NTD

Note: The "Others" category within the non-audit fees mainly includes fees paid for services to review the checklist of public disclosure and filing and reading of the annual report and Prospectuses.

If the CPA Firm Changes, and the Audit Fee Paid in the Year of such Change Is Reduced from the Audit Fee of the Previous Year, the Amounts of the Audit Fees Before and After such Change and the Reason of such Change Should Be Disclosed

None.

If the Audit Fee Is Reduced by More than 15% from Last Year, the Amount, Ratio, and Reason for the Reduction of the Audit Fee Should Be Disclosed

In 2019, the audit fee was around NTD 9 million more than the audit fee from 2018, which is an increase of around 16%. This is mainly due to the acquisition of new subsidiaries that generate audit fees.

Information of CPA Change

None.

UMC's Chairman, Presidents, Chief Financial Officer, and Managers in Charge of Its Finance and Accounting Operations Did Not Hold Any Positions in UMC's Independent Auditing Firm or Its Affiliates in the Most Recent Year.

Change in Shareholding of Directors, Managers and Major Shareholders Who Own 10% or More of UMC Shares

Unit: Shares

Title	Name	2020		2019	
		Holding Increase (Decrease)	Pledged Holding Increase (Decrease)	Holding Increase (Decrease)	Pledged Holding Increase (Decrease)
Chairman, CSO	Stan Hung	0	0	0	0
Director	Hsun Chieh Investment Co., Ltd.	0	0	0	0
Director	Silicon Integrated Systems Corp.	0	0	0	0
Independent Director	Cheng-Li Huang	0	0	0	0
Independent Director	Wenyi Chu	0	0	0	0
Independent Director	Lih J. Chen	0	0	0	0
Independent Director	Jyuo-Min Shyu	0	0	0	0
Director	Chung Laung Liu	0	0	0	0
Director	Ting-Yu Lin	0	0	0	0
President	SC Chien	0	0	1,800,000	0
President	Jason Wang	0	0	3,600,000	0
Executive Vice President	Ming Hsu	0	0	1,290,000	0
Senior Vice President	Oliver Chang	0	0	N/A	N/A
Senior Vice President, CFO	Chitung Liu	0	0	900,000	0
Senior Vice President, General Counsel	Lucas S Chang	0	0	300,000	0
Vice President	TS Wu	0	0	710,000	0
Vice President	C C Hsu	0	0	0	0
Vice President	M C Lai	0	0	900,000	450,000
Vice President	G C Hung	0	0	900,000	0
Vice President	Wenchi Ting	0	0	750,000	0
Vice President	Jerry CJ Hu	0	0	440,000	0
Vice President	Y S Shen	0	0	900,000	0
Vice President	Steven S Liu	0	0	300,000	0
Vice President	SR Sheu	0	0	0	0
Vice President	M L Liao	0	0	900,000	0

Change in Shareholding of Directors, Managers and Major Shareholders Who Own 10% or More of UMC Shares (Continue)

Unit: Shares

Title	Name	2020		2019	
		Holding Increase (Decrease)	Pledged Holding Increase (Decrease)	Holding Increase (Decrease)	Pledged Holding Increase (Decrease)
Vice President	S S Hong	0	0	650,000	0
Vice President	Francia Hsu	0	0	680,000	0
Vice President, Chief Human Resources Officer	Eric Chen	0	0	650,000	0
Associate Vice President	Johnson Liu	0	0	0	0
Associate Vice President	Victor Chuang	0	0	240,000	0
Associate Vice President	Chuck Chen	0	0	240,000	0
Associate Vice President	S F Tzou	0	0	600,000	0
Associate Vice President	Le Tien Jung	0	0	600,000	0
Associate Vice President	Yau Kae Sheu	0	0	600,000	0
Associate Vice President	J Y Wu	0	0	600,000	0
Associate Vice President	Osbert Cheng	0	0	600,000	0
Associate Vice President	Steven Hsu	0	0	600,000	0
Associate Vice President	Purakh Raj Verma	0	0	0	0
Associate Vice President	Yanan Mou	0	0	0	0
Associate Vice President	C Y Hsu	0	0	0	0
Associate Vice President	Remi Yu	0	0	120,000	0
Associate Vice President	Michael CY Wang	0	0	0	0
Associate Vice President	Ji Fu Kung	0	0	600,000	0
Associate Vice President	C P Yen	0	0	600,000	0
Associate Vice President	Mindy Lin	0	0	600,000	0
Associate Vice President	Pang Min Wang	0	0	240,000	0
Former Associate Vice President	T W Liu	N/A	N/A	0	0
Former Associate Vice President	Chih Chong Wang	N/A	N/A	90,000	0

Note 1: No shareholder owns 10% or more of UMC shares.

Note 2: The data presented for 2020 was gathered until January 31, 2020.

Note 3: Counterparts of the shareholding transferred or pledged are not related parties.

Note 4: The shares changes for Oliver Chang, Victor Chuang, Chuck Chen, Yanan Mou, Remi Yu and Michael CY Wang are calculated starting from the assumed date.

Note 5: The shares changes for T W Liu and Chih Chong Wang are reported up until their resignation.

Note 6: The Holding Increase (Decrease) data consists of shares under Trust with Discretion Reserved.

Relationship Among the Top Ten Shareholders

Name	Shares Held		Shares Held by Spouse or Underage Children		Total Shares Held in the Name of Other Persons		Relationship Between the Company's Top Ten Shareholders Who Are Either Related Parties, Spouses, or Relatives Within the Second Degree of Kinship, His/Her/Its Title (or Name) and Relationship		Remarks
	Shares	%	Shares	%	Shares	%	Title (or Name)	Relationships	
JPMorgan Chase Bank, N.A. acting in its capacity as depositary and representative to the holders of ADRs	695,338,445	5.93	N/A	N/A	N/A	N/A	None	None	
Hsun Chieh Investment Co., Ltd.	441,371,000	3.76	N/A	N/A	N/A	N/A	None	None	
Representative: Ping Kun Hung	0	0	0	0	0	0	None	None	
Nan Shan Life Insurance Company, Ltd.	317,538,000	2.71	N/A	N/A	N/A	N/A	None	None	
Representative: Ying Tsung Tu	Data unavailable								
Silicon Integrated Systems Corp.	285,380,424	2.43	N/A	N/A	N/A	N/A	None	None	
Representative: Cheng Chien Chien	1,858	0.00	0	0	0	0	None	None	
Silchester International Investors International Value Equity Trust	280,293,000	2.39	N/A	N/A	N/A	N/A	None	None	
Yann Yuan Investment Co., Ltd.	200,000,000	1.71	N/A	N/A	N/A	N/A	None	None	
Representative: Wen Ching Lin	Data unavailable								
Prudential Assurance Company Ltd.	188,525,000	1.61	N/A	N/A	N/A	N/A	None	None	
Dimensional Emerging Markets Value Fund	169,727,682	1.45	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	161,801,905	1.38	N/A	N/A	N/A	N/A	None	None	
Silchester International Investors International Value Equity Group Trust	143,946,000	1.23	N/A	N/A	N/A	N/A	None	None	

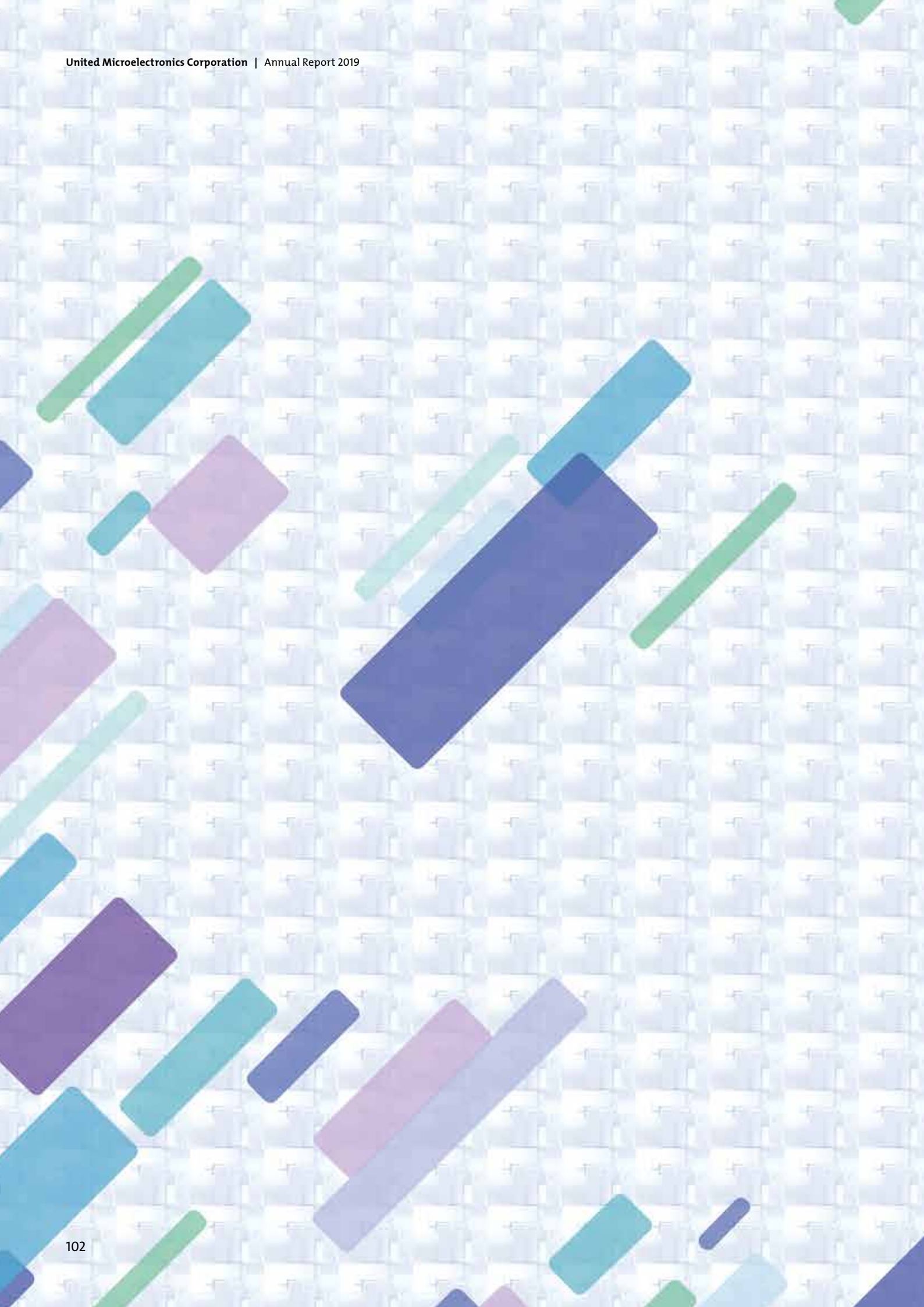
Note: The data shown above was recorded on July 22, 2019, which was the record date for the distribution of 2019 cash dividend.

Shares Held by the Company, Directors, Managers and Companies Directly or Indirectly Controlled by the Company, and the Comprehensive Shareholding Ratio Based on Combined Calculation

Investee Companies	UMC		Shares Held by Directors, Managers and Companies Directly or Indirectly Controlled by the Company		Comprehensive Shareholding	
	Number of Shares	Percentage of Ownership (%)	Number of Shares	Percentage of Ownership (%)	Number of Shares	Percentage of Ownership (%)
UMC Group (USA)	16,437,500	100.00	0	0	16,437,500	100.00
United Microelectronics (Europe) B.V.	9,000	100.00	0	0	9,000	100.00
UMC Capital Corp.	71,662,977	100.00	0	0	71,662,977	100.00
TLC Capital Co., Ltd.	397,956,300	100.00	0	0	397,956,300	100.00
Green Earth Limited	977,000,000	100.00	0	0	977,000,000	100.00
Fortune Venture Capital Corp.	401,734,448	100.00	0	0	401,734,448	100.00
UMC Investment (Samoa) Limited	1,520,000	100.00	0	0	1,520,000	100.00
MTIC Holdings Pte. Ltd.	12,000,000	45.44	0	0	12,000,000	45.44
NexPower Technology Corp.	33,998,269	47.75	32,668,013	45.88	66,666,282	93.63
Unitech Capital Inc.	21,000,000	42.00	2,500,000	5.00	23,500,000	47.00
Hsun Chieh Investment Co., Ltd.	277,280,380	36.49	0	0	277,280,380	36.49
Best Elite International Limited	664,966,275	100.00	0	0	664,966,275	100.00
Wavetek Microelectronics Corporation	144,948,118	79.83	3,705,414	2.04	148,653,532	81.87
UMC Group Japan	1,000	100.00	0	0	1,000	100.00
UMC Korea Co., Ltd.	110,000	100.00	0	0	110,000	100.00
Omni Global Limited	4,300,000	100.00	0	0	4,300,000	100.00
United Semiconductor (Xiamen) Co., Ltd.	0	0	N/A	65.22	N/A	65.22
Faraday Technology Corporation	34,240,213	13.78	102,973	0.04	34,343,186	13.82
Yann Yuan Investment Co., Ltd.	46,000,000	30.87	0	0	46,000,000	30.87
Sino Paragon Limited	2,600,000	100.00	0	0	2,600,000	100.00
Triknights Capital Corporation	237,000,000	40.00	0	0	237,000,000	40.00
United Semiconductor Japan Co., Ltd.	116,246,616	100.00	0	0	116,246,616	100.00

Note 1: The investee companies are the investees under equity method and funds.

Note 2: The number of shares is based on the actual number of shares held on December 31, 2019.



Capital Overview

- 104 Capital and Shares
- 109 Issuance of Corporate Bonds
- 115 Preferred Shares
- 116 American Depositary Receipts
- 118 Employee Stock Option Handling Status
- 118 Issuance of New Restricted Employee Shares
- 118 Status of New Shares Issuance in Connection with Mergers and Acquisitions
- 118 Financing Plans and Execution Status

Capital and Shares

Source of Capital

Month/Year	Issue Price (Per Share)	Authorized Capital		Paid-in Capital			Remarks	
		Shares (In Thousand)	Amount (In Thousand NTD)	Shares (In Thousand)	Amount (In Thousand NTD)	Source of Capital	Capital Increased by Assets Other than Cash	Other
March, 2019	NTD 10	26,000,000	260,000,000	12,124,319	121,243,187	Note 1	-	-
July, 2019	NTD 10	26,000,000	260,000,000	11,724,319	117,243,187	Note 2	-	-

Note 1: On March 21, 2019, the Hsinchu Science Park Bureau, Ministry of Science and Technology approved the capital reduction of NTD 3,000,000 thousand due to cancellation of treasury shares. The Company's paid-in capital was decreased to NTD 121,243,187 thousand.

Note 2: On July 8, 2019, the Hsinchu Science Park Bureau, Ministry of Science and Technology approved the capital reduction of NTD 4,000,000 thousand due to cancellation of treasury shares. The Company's paid-in capital was decreased to NTD 117,243,187 thousand.

Note 3: The data shown above was gathered until February 26, 2020.

Type of Stock

Unit: Shares

Share Type	Authorized Capital			Allotment for Stock Option Certificate (Units)
	Issued Shares(Note 1)	Un-Issued Shares	Total Shares	
Common Stock	11,724,318,715	14,275,681,285	26,000,000,000	2,000,000,000

Note 1: The Company's issued shares are listed stock.

Note 2: The data shown above was gathered until February 26, 2020.

Information for Shelf Registration

Not Applicable.

Status of Shareholders

Common Shares

Item	Government Agencies	Financial Institutions	Other Juridical Persons	Natural Persons	Foreign Institutions and Natural Persons	Total
Number of Shareholders	15	59	725	520,631	1,579	523,009
Shareholding (Shares)	161,934,388	806,451,345	1,327,982,228	3,416,733,132	6,011,217,622	11,724,318,715
Percentage (%)	1.38	6.88	11.33	29.14	51.27	100.00

Note: The data shown above was recorded on July 22, 2019, which was the record date for the distribution of 2019 cash dividend.

Capital and Shares (Continue)

Shareholding Distribution Status

Common Shares

Class of Shareholding (Unit: Shares)		Number of Shareholders	Shareholding (Shares)	Percentage (%)
1~	999	191,993	58,329,906	0.50
1,000~	5,000	217,981	506,223,174	4.32
5,001~	10,000	54,459	405,300,074	3.46
10,001~	15,000	20,046	246,151,792	2.10
15,001~	20,000	11,201	200,466,954	1.71
20,001~	30,000	10,678	263,008,540	2.24
30,001~	50,000	7,657	298,595,251	2.55
50,001~	100,000	4,898	342,512,921	2.92
100,001~	200,000	2,086	288,376,568	2.46
200,001~	400,000	909	249,166,256	2.12
400,001~	600,000	272	134,558,264	1.15
600,001~	800,000	140	96,442,978	0.82
800,001~	1,000,000	91	81,549,522	0.69
	Over 1,000,001	598	8,553,636,515	72.96
Total		523,009	11,724,318,715	100.00

Note: The data shown above was recorded on July 22, 2019, which was the record date for the distribution of 2019 cash dividend.

Preferred Shares

None.

List of Major Shareholders

Shareholder's Name	Shareholding	
	Shares	Percentage (%)
JPMorgan Chase Bank, N.A. acting in its capacity as depositary and representative to the holders of ADRs	695,338,445	5.93
Hsun Chieh Investment Co., Ltd.	441,371,000	3.76
Nan Shan Life Insurance Company, Ltd.	317,538,000	2.71
Silicon Integrated Systems Corp.	285,380,424	2.43
Silchester International Investors International Value Equity Trust	280,293,000	2.39
Yann Yuan Investment Co., Ltd.	200,000,000	1.71
Prudential Assurance Company Ltd.	188,525,000	1.61
Dimensional Emerging Markets Value Fund	169,727,682	1.45
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	161,801,905	1.38
Silchester International Investors International Value Equity Group Trust	143,946,000	1.23

Note: The data shown above was recorded on July 22, 2019, which was the record date for the distribution of 2019 cash dividend.

Capital and Shares (Continue)

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

Item		2020 (Note 7)	2019	2018	
Market Price Per Share (Note 1)	Highest	17.15	17.05	18.65	
	Lowest	14.15	10.55	10.40	
	Average	15.98	13.63	14.92	
Net Worth Per Share	Before Distribution	-	17.61	17.28	
	After Distribution	-	*	16.70	
Earnings Per Share	Weighted Average Shares (shares)	-	11,785,108,150	12,103,879,632	
	Earnings Per Share (Note 2)	-	0.82	0.58	
	Earnings Per Share (Note 3)	-	*	0.58	
Dividends Per Share	Cash Dividends	-	*	0.58989396	
	Stock Dividends	Earning Distribution	-	*	-
		Capital Distribution	-	*	-
	Accumulated Undistributed Dividend	-	-	-	
Return on Investment	Price/Earnings Ratio (Note 4)	-	16.24	25.83	
	Price/Dividend Ratio (Note 5)	-	*	25.39	
	Cash Dividend Yield (Note 6)	-	*	0.04	

*Subject to change based on resolutions of the 2020 shareholders' meeting.

Note 1: Referred to TWSE website.

Note 2: EPS calculation was based on weighted average shares outstanding for the year.

Note 3: EPS calculation was based on retroactive adjustment for capitalization of unappropriated earnings, additional paid-in capital and employees' compensation - stock.

Note 4: Price/Earnings Ratio = Average Market Price/Earnings Per Share.

Note 5: Price/Dividend Ratio = Average Market Price/Cash Dividends Per Share.

Note 6: Cash Dividend Yield = Cash Dividends Per Share/Average Market Price.

Note 7: The data represented for 2020 was gathered until February 26, 2020.

Note 8: The average closing prices for years 2018, 2019 and 2020 were NTD 14.98, NTD 13.32, and NTD 16.04, respectively.

Capital and Shares (Continue)

Dividend Policy and Status

Dividend Policy in Company's Articles of Incorporation

According to the Company's Articles of Incorporation, current year's earning, if any, shall be distributed in the following order:

1. Payment of taxes.
2. Making up for loss in preceding years.
3. Setting aside 10% for legal reserve, except for when accumulated legal reserve has reached the Company's paid-in capital.
4. Appropriating or reversing special reserve by government officials or other regulations.
5. The remaining, plus the previous year's unappropriated earnings, shall be distributed according to the distribution plan proposed by the Board of Directors according to the dividend policy in paragraph two of this clause and submitted to the shareholders' meeting for approval.

The dividend policy of the Company shall be determined pursuant to factors such as the investment environment, its

funding requirements, domestic and overseas competitive landscape and its capital expenditure forecast, as well as shareholders' interest, balancing dividends and UMC's long-term financial planning. The Board of Directors shall propose the distribution plan and submit it to the shareholders' meeting every year. The distribution of shareholders dividend shall be allocated as cash dividend in the range of 20% to 100%, and stock dividend in the range of 0% to 80%.

Proposed Distribution of Dividend

The Company's proposal for 2019 earnings distribution was passed during the 14th board meeting of the 14th term. This proposal, a cash dividend of NTD 9,765,154,720 from retained earnings (NTD 0.75 per share), will be discussed at the Annual General Meeting.

Effect of Share Dividends to Operating Performance and EPS

Not applicable.

Capital and Shares (Continue)**Employees' and Directors' Compensation****Related Information of Employees' and Directors' Compensation in the Company's Articles of Incorporation**

Employees' and Directors' Compensation Policy in the Company's Articles of Incorporation is as follows:

The Company shall allocate no less than 5% of profit as employees' compensation and no more than 0.1% of profit as directors' compensation for each profitable fiscal year after offsetting any cumulative losses.

The aforementioned employees' compensation will be distributed in shares or cash. The employees of the Company's subsidiaries who fulfill specific requirements stipulated by the Board of Directors may be granted such compensation. Directors may only receive compensation in cash.

The Company may, by a resolution adopted by a majority vote at a meeting of the Board of Directors attended by two-thirds of the total number of directors, distribute the aforementioned employees' and directors' compensation and report to the shareholders' meeting for such distribution.

The Basis for Estimating the Amount of Employees and Directors' Compensation, the Basis for Calculating the Number of Shares to be Distributed as Employees' Compensation, and the Accounting Treatment of the Discrepancy between the Actual Distributed and the Estimated Amount.

The Company recognizes the employees and directors' compensation in the profit or loss during the periods when

earned. The Board of Directors estimates the amount by taking into consideration the Articles of Incorporation, government regulations and industry averages. If the Board of Directors resolves to distribute employee compensation through stock, the number of stock distributed is calculated based on total employee compensation divided by the closing price of the day before the Board of Directors meeting. If the Board of Directors subsequently modifies the estimates significantly, the Company will recognize the change as an adjustment in the profit or loss in the subsequent period. Information relevant to the aforementioned employees and directors' compensation can be obtained from the "Market Observation Post System" on the website of the TWSE.

The Distributable Compensation for Employees and Directors Passed during the Board Meeting.

The Company's 2019 distributable compensation for employees and directors was passed during the 13th board meeting of the 14th term. The distribution status is as follows:

The Company is to distribute NTD 1,132,952,365 as employee cash compensation and NTD 10,258,577 as directors' compensation.

There is no difference between the amount passed during the Board meeting and the recognized amount during 2019 of the aforementioned employees' and directors' compensation.

The Amount of Employees' Compensation Distributed in Stocks, and such Amount as a Percentage of the Sum of Net Income Stated in the Parent Company Only Financial Reports and Total Employees' Compensation:

None.

Distribution of Employees and Directors' Compensation for 2018:

Item	Board Resolution (March 6, 2019)	In Thousand NTD
Employees' compensation distributed in Cash	1,400,835	
Directors' compensation	7,624	

Note: The actual distribution of employees and directors' compensation for 2018 were consistent with the resolutions of the Board of Directors meeting held on March 6, 2019.

Issuance of Corporate Bonds

Name of Bond	United Microelectronics Corporation 4 th Round of Unsecured Straight Bonds
Issue date	June 7, 2012
Denomination	NTD 1 million
Listing and trading	Taipei Exchange
Issue price	NTD 1 million
Total amount	NTD 10,000 million; 5-year bond for NTD 7,500 million and 7-year bond for NTD 2,500 million
Coupon rate	Fixed rate; 1.43% p.a. and 1.63% p.a. for 5-year and 7-year bonds, respectively
Tenor and maturity date	5-year bond: June 7, 2017 7-year bond: June 7, 2019
Guarantor	None
Trustee	Taiwan Cooperative Bank
Underwriter	None
Transferring, paying or conversion agent	None
Legal counsel	Chen & Lin Attorneys-at-Law
Independent auditor	Ernst & Young, Taiwan
Repayment	The principal of 5-year and 7-year bonds will be repaid respectively in June 2017 and June 2019 upon maturity. Interest will be paid annually for both 5-year and 7-year bonds.
Outstanding amount	None (Note)
Redemption clause	None
Restrictive clause	None
Name of credit rating agency, rating date and result of rating	Taiwan Ratings Corporation May 14, 2012 twAA
Other rights of bondholders	None
Dilution effect or other adverse impact on existing shareholders' equity, if conversion, exchange, or subscription rights are attached	None
Custodian	None

Note: NTD 7,500 million for the 5-year bond was repaid on June 7, 2017. NTD 2,500 million for the 7-year bond was repaid on June 7, 2019.

Buyback of Treasury Stock

(1) Completed Share Buyback Programs

Instance	20 th round	19 th round
Purpose	For cancellation	For cancellation
Buyback period	2019.04.25~2019.06.24	2018.11.06~2019.01.05
Price range (NTD)	8.40~18.10	7.55~20.80
Classification and executed volume (Shares)	200,000,000 Common shares	300,000,000 Common shares
Executed amount (NTD)	2,641,387,106	3,349,946,428
Ratio of executed volume to the volume to be repurchased (%)	100	100
Cancellation and transfer volume (Shares)	200,000,000	300,000,000
Cumulative holding (Shares)	0	0
Cumulative holding as a percentage of total issued shares (%)	0	0

Note: The data shown above was gathered until February 26, 2020.

(2) Uncompleted Share Buyback Programs: None.

Issuance of Corporate Bonds (Continue)

Name of Bond	United Microelectronics Corporation 1 st Unsecured Straight Corporate Bond Issuance in 2013
Issue date	March 15, 2013
Denomination	NTD 1 million
Listing and trading	Taipei Exchange
Issue price	NTD 1 million
Total amount	NTD 10,000 million; 5-year bond for NTD 7,500 million and 7-year bond for NTD 2,500 million
Coupon rate	Fixed rate; 1.35% p.a. and 1.50% p.a. for 5-year and 7-year bonds, respectively
Tenor and maturity date	5-year bond: March 15, 2018 7-year bond: March 15, 2020
Guarantor	None
Trustee	Taiwan Cooperative Bank
Underwriter	None
Transferring, paying or conversion agent	None
Legal counsel	Chen & Lin Attorneys-at-Law
Independent auditor	Ernst & Young, Taiwan
Repayment	The principal of 5-year and 7-year bonds will be repaid respectively in March 2018 and March 2020 upon maturity. Interest will be paid annually for both 5-year and 7-year bonds.
Outstanding amount	NTD 2,500 million for the 7-year bond (Note)
Redemption clause	None
Restrictive clause	None
Name of credit rating agency, rating date and result of rating	Taiwan Ratings Corporation November 30, 2012 twAA
Other rights of bondholders	None
Dilution effect or other adverse impact on existing shareholders' equity, if conversion, exchange, or subscription rights are attached	None
Custodian	None

Note: NTD 7,500 million for the 5-year bond was repaid on March 15, 2018.

Issuance of Corporate Bonds (Continue)

Name of Bond	United Microelectronics Corporation 1 st Unsecured Straight Corporate Bond Issuance in 2014
Issue date	June 18, 2014
Denomination	NTD 1 million
Listing and trading	Taipei Exchange
Issue price	NTD 1 million
Total amount	NTD 5,000 million; 7-year bond for NTD 2,000 million and 10-year bond for NTD 3,000 million
Coupon rate	Fixed rate; 1.70% p.a. and 1.95% p.a. for 7-year and 10-year bonds, respectively
Tenor and maturity date	7-year bond: June 18, 2021 10-year bond: June 18, 2024
Guarantor	None
Trustee	Taiwan Cooperative Bank
Underwriter	None
Transferring, paying or conversion agent	None
Legal counsel	Chen & Lin Attorneys-at-Law
Independent auditor	Ernst & Young, Taiwan
Repayment	The principal of 7-year and 10-year bonds will be repaid respectively in June 2021 and June 2024 upon maturity. Interest will be paid annually for both 7-year and 10-year bonds.
Outstanding amount	NTD 5,000 million
Redemption clause	None
Restrictive clause	None
Name of credit rating agency, rating date and result of rating	Not applicable
Other rights of bondholders	None
Dilution effect or other adverse impact on existing shareholders' equity, if conversion, exchange, or subscription rights are attached	None
Custodian	None

Issuance of Corporate Bonds (Continue)

Name of Bond	United Microelectronics Corporation 1 st Unsecured Straight Corporate Bond Issuance in 2017
Issue date	March 24, 2017
Denomination	NTD 1 million
Listing and trading	Taipei Exchange
Issue price	NTD 1 million
Total amount	NTD 8,300 million; 5-year bond for NTD 6,200 million and 7-year bond for NTD 2,100 million
Coupon rate	Fixed rate; 1.15% p.a. and 1.43% p.a. for 5-year and 7-year bonds, respectively
Tenor and maturity date	5-year bond: March 24, 2022 7-year bond: March 24, 2024
Guarantor	None
Trustee	CTBC Bank Co., Ltd.
Underwriter	MasterLink Securities Corp. as the lead underwriter
Transferring, paying or conversion agent	None
Legal counsel	Chen & Lin Attorneys-at-Law
Independent auditor	Ernst & Young, Taiwan
Repayment	The principal of 5-year and 7-year bonds will be repaid respectively in March 2022 and March 2024 upon maturity. Interest will be paid annually for both 5-year and 7-year bonds.
Outstanding amount	NTD 8,300 million
Redemption clause	None
Restrictive clause	None
Name of credit rating agency, rating date and result of rating	Not applicable
Other rights of bondholders	None
Dilution effect or other adverse impact on existing shareholders' equity, if conversion, exchange, or subscription rights are attached	None
Custodian	None

Issuance of Corporate Bonds (Continue)

Name of Bond	United Microelectronics Corporation 2 nd Unsecured Straight Corporate Bond Issuance in 2017
Issue date	October 3, 2017
Denomination	NTD 1 million
Listing and trading	Taipei Exchange
Issue price	NTD 1 million
Total amount	NTD 5,400 million; 5-year bond for NTD 2,000 million and 7-year bond for NTD 3,400 million
Coupon rate	Fixed rate; 0.94% p.a. and 1.13% p.a. for 5-year and 7-year bonds, respectively
Tenor and maturity date	5-year bond: October 3, 2022 7-year bond: October 3, 2024
Guarantor	None
Trustee	CTBC Bank Co., Ltd.
Underwriter	MasterLink Securities Corp. as the lead underwriter
Transferring, paying or conversion agent	None
Legal counsel	Chen & Lin Attorneys-at-Law
Independent auditor	Ernst & Young, Taiwan
Repayment	The principal of 5-year and 7-year bonds will be repaid respectively in October 2022 and October 2024 upon maturity. Interest will be paid annually for both 5-year and 7-year bonds.
Outstanding amount	NTD 5,400 million
Redemption clause	None
Restrictive clause	None
Name of credit rating agency, rating date and result of rating	Not applicable
Other rights of bondholders	None
Dilution effect or other adverse impact on existing shareholders' equity, if conversion, exchange, or subscription rights are attached	None
Custodian	None

Issuance of Corporate Bonds (Continue)

Type	Currency Linked Zero Coupon Convertible Bonds due 2020
Issue date	May 18, 2015
Face amount	USD 200,000
Listing exchange	Singapore Exchange Securities Trading Limited
Issue amount	USD 200,000
Issue size	USD 600,000,000
Coupon rate	0%
Maturity	5 years; May 18, 2020
Guarantor	-
Trustee	Citicorp International Limited
Underwriter	Credit Suisse(Hong Kong)Limited, Morgan Stanley Service Pty Limited, The Hong Kong and Shanghai Banking Corporation Limited.
Legal counsel	Chen & Lin Attorneys-at-law
Auditor	Ernst & Young, Taiwan
Redemption	Unless previously redeemed, converted, or repurchased and canceled, the Company will redeem the Bonds at the principal amount of the Bonds with an interest calculated (calculated semiannually) at the rate of -0.25% per annum on the maturity date (the Redemption Amount). The Redemption amount will be converted into NTD based in the Fixed Exchange Rate, and this fixed NTD amount will be converted using the Prevailing Rate for payment in USD.
Principal payable	USD 573,600,000 as of February 26, 2020
Redemption or early redemption clause	<p>(a) The Company will, at the option of bondholder, redeem such holder's Bonds in whole or in part at the principal amount of the Bonds with an interest calculated (calculated semiannually) at the rate of -0.25% per annum on the date which is 3 years from the date of issue. The actual rates per annum are decided according to market conditions by the Company and joint underwriters overseas together on the pricing date.</p> <p>(b) Bondholders have the right to require the Company to redeem the bonds, in whole but not in part, at the principal amount of the Bonds with an interest calculated (calculated semiannually) at the rate of -0.25% per annum (Early Redemption Amount) if the Company's common shares cease to be listed on the Taiwan Stock Exchange. The actual rates per annum are decided according to market conditions by the Company and joint underwriters overseas together on the pricing date.</p> <p>(c) In the event that a change of control (as defined in the indenture of the bonds) occurs to the Company, the bondholders shall have the right to require the Company to redeem the bonds, in whole but not in part, at the Early Redemption Amount.</p> <p>(d) The Redemption procedures of the exercise of the put right by the Bondholder and repurchase by the Company are all set in the Indenture. The Redemption Amount and The Early Redemption Amount will be paid in cash by the Company on the payment date set in the Indenture.</p> <p>(e) The Company may redeem the bonds, in whole or in part, after 3 years of the issuance and prior to the maturity date, at the Early Redemption Amount if the closing price of the Company's common shares on the Taiwan Stock Exchange, for a period of 20 out of 30 consecutive trading days, is at least 125% of the conversion price.</p> <p>(f) The Company may redeem the bonds, in whole, but not in part, at the Early Redemption Amount if at least 90% in principal amount of the bonds has already been redeemed, repurchased and cancelled or converted.</p> <p>(g) The Company may redeem all, but not part, of the bonds, at the Early Redemption Amount at any time, in the event of certain changes in the ROC's tax rules which would require the Company to gross up for payments of principal, or to gross up for payments of interest or premium. Bondholders may elect not to have their bonds redeemed by the Company in such event, in which case the bondholders shall not be entitled to receive payments of such additional amounts.</p> <p>The Redemption Amount/The Early Redemption Amount will be converted into NTD based on the Fixed Exchange Rate, and this fixed NTD amount will be converted using the Prevailing Rate for payment in USD.</p>

Issuance of Corporate Bonds (Continue)

Type	Currency Linked Zero Coupon Convertible Bonds due 2020	
Covenant	-	
Name of credit rating agency, rating date and result of rating	-	
Other obligation	Balance of amount converted to (exchangeable or warrant) shares, ADSs, or other types of securities as of the Annual Report Printing Date	-
	Policy of issuing or converting (exchangeable or warrant)	The bondholders may from June 28, 2015 to May 8, 2020 convert the bonds into the Company's common shares as a substitute for the issuer's cash redemption. In addition, the bondholders will not be able to effect conversion into common shares during any closed period.
Effect on the current shareholders due to dilution	The underlying conversion for ECB is newly issued shares. If the ECB is fully converted, the dilution ratio to original shareholders is 8.63%. The impact to the dilution is minimal.	
Name of custodian	Citibank, N.A., London Branch	

Exchangeable Bonds Information

None.

Euro Convertible Bonds Information

Type	Currency Linked Zero Coupon Convertible Bonds due 2020							
Item	Year							
		2020	2019	2018	2017	2016	2015	2015.05.18 (Issue Date)
Convertible Price		NTD 14.2179	NTD 14.2179	NTD 14.8157	NTD 15.4320	NTD 15.9895	NTD 16.7408	NTD 17.50
Market Price	High	USD 121.726	USD 121.802	USD 124.583	USD 114.894	USD 95.625	USD 100.864	-
	Low	USD 107.981	USD 95.185	USD 95.662	USD 92.255	USD 88.052	USD 87.579	-
	Average	USD 115.616	USD 101.385	USD 110.480	USD 104.396	USD 92.453	USD 93.145	-
Issue Date		May 18, 2015						
Reference Shares		Common shares						

Note: The date presented for 2020 was gathered until February 26, 2020

Shelf Registration for Issuing Bonds

None.

Corporate Bonds with Warrants

None.

Preferred Shares

None.

American Depositary Receipts

Issue Date	2008.09.19	2007.10.09	2006.11.06	2006.09.01	2005.09.01	2005.01.20	2004.11.16
Listing Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange
Issue Amount	Stock dividend	Capital Reduction	USD 108.2 million	Stock dividend	Stock dividend	USD 84.2 million	USD 76.3 million
Listing Price/Unit	-	-	USD 3.05	-	-	USD 3.33	USD 3.47
Issue Units	9,885,719	-95,425,183	35,456,000	2,831,465	25,833,137	25,290,000	22,000,000
Underlying Representing Shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares
Number of Equivalent Local Shares per ADS	5 shares	5 shares	5 shares	5 shares	5 shares	5 shares	5 shares
Rights and Obligations of ADS Holders	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder
Trustee	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Depository Bank	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.
Custodian Bank	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch
Outstanding Balance (Units)	The total outstanding balance is 137,725,632 units.						
Issuing Expenses and Maintenance Fees	Except for IPO and dividends, the issuing expense will be borne by the selling shareholders. The maintenance fees will be borne by the Company.						
Important Terms and Conditions of Depositary Agreement and Custodian Agreement	-	-	-	-	-	-	-

Note 1: The data shown above was gathered until February 26, 2020.

Note 2: On October 21, 2009, the depository bank was changed to JPMorgan Chase Bank, N.A., and the custodian bank was changed to JPMorgan Chase Bank, N.A. Taipei Branch.

American Depositary Receipt Trading Data

Closing Price per Share (USD)	2020			2019		
	High	Low	Average	High	Low	Average
	2.81	2.42	2.63	2.80	1.69	2.11

Note: The data represented for 2020 was gathered until February 26, 2020.

American Depositary Receipts (Continue)

2004.08.19	2004.01.02	2003.12.23	2003.08.15	2002.09.09	2002.03.19	2001.08.17	2000.09.19
New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange	New York Stock Exchange
Stock dividend	USD 13.8 million	USD 24.4 million	Stock dividend	Stock dividend	USD 439.7 million	Stock dividend	USD 1,291.5 million
-	USD 4.92	USD 4.75	-	-	USD 9.25	-	USD 14.35
15,088,684	2,804,000	5,146,000	6,965,107	22,655,667	47,537,780	13,500,000	90,000,000
UMC common shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares	UMC common shares
5 shares	5 shares	5 shares	5 shares	5 shares	5 shares	5 shares	5 shares
Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder	Same as the common shareholder
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.	Citibank, N.A.
Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch	Citibank, N.A. Taipei Branch
-	-	-	-	-	-	-	-

Employee Stock Option Handling Status

The processing situation and impact on shareholders' rights from employee stock options that have not matured yet:

None.

Issuance of New Restricted Employee Shares

The Company did not issue Restricted Stock Awards during 2019 and as of the Annual Report Printing Date.

Status of New Shares Issuance in Connection with Mergers and Acquisitions

The Company has not completed any merger or acquisition of another corporation to issue new shares according to the Company Act or Enterprises Mergers and Acquisition Act, nor has the Board of Directors approved any merger or acquisition of another corporation to issue new shares according to the Company Act or Enterprises Mergers and Acquisition Act during 2019 and as of the Annual Report Printing Date.

Financing Plans and Execution Status

Not Applicable.

Operations Overview

- 120 Business Activities
- 127 Overview of Market, Production, and Sales
- 133 Employees
- 134 Environmental Expenditure Information
- 134 Labor Relations
- 138 Major Contracts

Business Activities

Business Scope

UMC provides wafer fabrication services through state-of-the-art manufacturing processes and produces chips for various applications within the IC industry. The Company provides logic and mixed-signal process technologies from 0.5 micron to 14nm. UMC continuously introduces competitive process technologies and complete solutions to enable chips to be designed according to specific customer requirements. Customers can select different processes according to their product application, such as embedded memory, high

voltage, integrated bipolar/CMOS/depleted CMOS, MEMS sensor and mixed-signal/RF CMOS. UMC strives to provide comprehensive services, delivering customized platforms to meet the system-on-chip (SoC) needs of different customers.

In 2019, revenue contribution from UMC's wafer fabrication accounted for the vast majority of the Company's total sales revenue, with the remainder generated from new R&D ventures and manufacturing of solar energy.

Industry Overview

Current Status and Development of the Semiconductor Industry

The development of electronic products has been trending towards enhanced functionality, light weight, energy saving and carbon reduction. The incorporation of artificial intelligence (AI) concepts, deep learning and voice control in recent years has also affected the direction of chip design. Therefore, the complexity of chip designs has significantly increased due to the considerations of functional integration, performance enhancement, and low power consumption. In addition, in response to the constant miniaturization of semiconductor fabrication processes and cost considerations, development is heading towards larger diameter wafers. This trend has caused the entry barrier into semiconductor fabrication process technology to continuously increase, and the investment has also been growing exponentially.

With the constantly rising entry barriers of various semiconductor sectors from design, fabrication, packaging, and test, it is extremely difficult for semiconductor companies to have total control over every single sector. Under the considerations of professional division of labor and production efficiency, the semiconductor industry's move towards a vertical division of labor system is becoming more and more obvious. The development cost of advanced process technologies and the capital expenditure of new tools and equipment have risen significantly, such that the industrial structure of professional division of labor has been formed. This phenomenon and the effect on the overall environment has resulted in many existing Integrated Device Manufacturers (IDMs) to announce that they will no longer actively invest in the development of advanced processes

or increase capacity due to cost vs. benefit considerations. Instead, they have increased the proportion of wafer manufacturing to foundry outsourcing. Some makers of system products have also designed ICs (such as cellphone chips) by themselves and outsourced to wafer foundry. These industrial trends all have a positive impact on the sustainable development of the professional wafer foundry industry.

For 2019, worldwide semiconductor revenue declined 12.9% due to the U.S. - China Trade War, and demand saturation for PC and smart phone, etc. The worldwide memory industry declined over 30%, due to over-capacity, inventory correction and demand weakness. Non-memory semiconductor declined 3%, while worldwide foundry business showed a slight decline. The applications of IoT, automotive electronics, AR/VR and artificial intelligence have created a major forward catalyst for the semiconductor market, which is going to be the primary driving force for the future growth of the semiconductor industry.

Summarizing the views from all major forecast agencies, continuous and steady growth of domestic and international economies can be expected in 2020, due to steady demand increase from 5G, AI, IoT and automotive electronics, and a rebound of the memory industry; however, the global economy and semiconductor market will also be negatively impacted by COVID-19. The worldwide semiconductor market is expected to grow more than 7%, the non-memory segment should grow around 5%, and foundry revenue should grow around 5%. However, there are still some uncertainties which could affect future economic development. The most crucial keys are how the industry will navigate U.S. President Donald Trump's economic decisions and the U.S. - China Trade War,

Industry Overview (Continue)

the slowdown of economic growth in China, conflicts in regional politics, decisions by the US Fed, degrees of inflation in various countries, and international energy price trends. Therefore, all major global wafer foundries should be prudent with their capital expenditures when expanding production capacity. The impact of COVID-19 to semiconductor and foundry in 2020 is great and crucial.

Within this context, UMC is cautiously expanding capacity while also increasing its 12-inch wafer foundry footprint by acquiring 100% of Mie Fujitsu Semiconductor Limited (MIFS), to make MIFS a wholly-owned subsidiary. The name was changed to United Semiconductor Japan Co., Ltd. (USJC), and technology is mainly from 90nm to 40nm. UMC has also dedicated R&D resources to advanced manufacturing and specialty process technologies to continuously differentiate itself, thus enhancing the Company's competitiveness through better product mix that will help strengthen profitability.

Correlation Among Upstream, Midstream, and Downstream Industries

The semiconductor industrial chain can be divided into IC design, mask, wafer fabrication, testing and packaging. IC design is mainly the design according to the specifications and applications required by end products. Different IC chips and products will have emphasis on different characteristics, thus leading to different process requirements. Therefore, professional wafer foundries must provide the most current technical design support services and adequate silicon intellectual property (IP) as early as possible, and continuously optimize process technology to help IC design customers in their chip development. In the end, testing and packaging companies will perform IC packaging and pre-shipment testing to ensure customer chips are meeting their respective design specifications.

The Development Trend and Competition of Electronic End Products

Conventional electronic products can be divided into four categories: Computer, Communication, Consumer, and Automotive. Electronic products have been developed towards compact size and light weight, low power consumption, interconnection, artificial intelligence, and deep learning. For example, notebooks and tablets can operate longer, and cellphones can be wirelessly connected to notebooks and tablets. In addition, the greatly enhanced bandwidth of broadband networks has contributed to the development of networked and smart TVs. By linking all things via the access, delivery, and processing of information to form a large network, many breakthrough applications and enormous business opportunities in the fields of smart home, health care system, and urban facilities become available. Looking towards the future, the key technologies of smartphones, wearable electronics, AR/VR, autonomous/electrical vehicle, AI/deep learning, voice control products, and IoT will be constantly adopted and commercialized. As such, professional wafer fabrication services should complete corresponding process development and silicon intellectual properties as soon as possible in order to meet the needs of different customers of products resulting from the Internet of Things (IoT) generation.

Overview of Technology and R&D

R&D Expenses for the Past 5 Years

In Thousand NTD

	2019	2018	2017	2016	2015
Operating Revenues	148,201,641	151,252,571	149,284,706	147,870,124	144,830,421
Research and Development Expenses	11,860,244	13,025,139	13,669,589	13,532,356	12,174,824
Research and Development Expenses as a Percentage of Operating Revenues	8.00%	8.61%	9.16%	9.15%	8.41%

Note : The R&D expense for 2020 was calculated up until the publication date of February 26, 2020, which amounted to NTD 1,764,946 thousand.

Technologies or Products Successfully Developed within the Past 5 Years

Year	R&D Achievements
2015	<ul style="list-style-type: none"> • Successful development of 14nm FinFET device with performance reaching leading industry levels. • Successful development of 28nm HPC+ (High Performance Compact Plus) process technology, which can provide lower leakage current and power consumption. It has been incorporated into customer pilot production. • Successful development of 55nm embedded flash memory technology, which has been qualified by product verification and has entered mass production. • Successful development of TSV (Through-Silicon Via) for mass production, which can drive the outstanding performance of customer GPU products.
2016	<ul style="list-style-type: none"> • Successful development of 28HPC^U process technology, which was provided to an IP provider to introduce a 12.5 Gbps SerDes PHY IP programmable design solution for high speed I/O. • Successful development of 40nm embedded charge trap (eCT) flash memory, which was provided to customers for mass production of MCU products. • Successful development of 55nm ultra-low power (55ULP) process, which was provided to an IP provider to introduce PowerSlash™ fundamental IP solutions to meet the long-term battery life-time requirements of wireless IoT products.
2017	<ul style="list-style-type: none"> • Successful development of a customized 14nm FinFET process technology, which entered mass production for customer ICs. UMC's 14nm wafer yields reached industry competitive levels, with products delivered to the Company's primary customer. • Successful pilot production of 28HPC^U+ process technology for customers to meet the demand for faster chips with better power saving features. • Introduced a 40nm non-volatile memory technology platform, which incorporated Silicon Storage Technology's (SST's) embedded SuperFlash® non-volatile memory that features low power consumption, high reliability, outstanding data retention, and high durability, which can be used for automobile, industry, consumer products, and IoT applications.
2018	<ul style="list-style-type: none"> • Successful development of 22nm ultra-low power (ULP)/ultra-low leakage (ULL) HK/MG process to provide customers chips with faster speed, better cost efficiency and improved power saving to meet future demands from IoT, automotive electronics, industrial electronics, and various wearable products applications. • 14nm FinFET customized process has entered mass production. In addition, UMC developed a new 14nm FinFET platform process (14FFC), with yield for the 128Mb SRAM on this process having reached industry competitive levels. 14FFC also passed process and product reliability verification to officially enter the pilot production stage for customer chips. • UMC partnered with the leader in next generation STT-MRAM, USA-based Avalanche, to jointly develop and produce eMRAM.
2019	<ul style="list-style-type: none"> • 14nm FinFET Plus customized process has entered mass production. In addition, UMC developed a new 14nm FinFET platform compact process (14FFC), with yield for the 128Mb SRAM on this process having reached industry competitive levels. 14FFC also passed process and product reliability verification to officially enter the pilot production stage for customer chips. • 40nm ReRAM was co-developed with Panasonic and is already at risk production stage. This high performance ReRAM is fully compatible with UMC's CMOS logic process.

Overview of Technology and R&D (Continue)

UMC's R&D team has always been dedicated to promoting the development of advanced process technology. With the adherence to the belief of "Customer's Demand Comes First," the Company has been providing pure-play wafer foundry solutions to meet market trends and customer needs, which include world-class technology, customer support services, and state-of-the-art manufacturing. With the expansion of UMC's Tainan Science Park site, the Company continues to recruit and train a large number of R&D talent. In 2019, UMC continued to significantly invest in R&D resources with total annual R&D expense reaching NTD 11.86 billion, which has led to fruitful R&D achievements in advanced and specialty technologies.

22nm ultra-low power/ultra-low leakage Process Technology

UMC has developed its 22nm process technology and 28nm high performance compact low power process technology platform (HPC^{U+}). With the same number of mask layers and compatible design criteria as 28nm, the performance of 22nm process technology has been enhanced by 10%, power consumption has been reduced by 20%, and area has been reduced by 10%. Therefore, the cost competitiveness of 22nm technology has been greatly improved to provide customers with more process options. 22nm ultra-low power/ultra-low leakage technologies are suitable for IoT, automotive electronics, industrial applications, and various wearable products that utilize analog, mixed signal, RF, and other relevant technologies. The introduction of 22nm by UMC has maximized the value of the Company's 28nm process, with IP verification from 28nm directly converting to 22nm being relatively easy due to the use of compatible design specifications. UMC's 22nm process has been introduced to customers and has completed pilot production. Mass production is expected in 2020.

14nm Process Technology

UMC reached the mass production milestone for its customized 14nm FinFET process in early 2017, and the competitiveness of device performance and yield has reached leading industry standards. In 2019, UMC's other 14nm project (14FFC FinFET process platform) was completed and has a 50% performance improvement and double the gate density compared to 28nm. 128Mb SRAM yield reached mass production quality levels for product yield and has passed process and product reliability verification. Currently several customers have already designed products using

UMC's 14FFC platform and have entered the pilot production stage, with cooperation with other customers ongoing. UMC's 14FFC is expected to be ready for customer mass production in 2020.

Embedded MRAM

For future market demands related to advanced IoT, automotive electronics, wearable products, and cloud applications, conventional embedded non-volatile flash memory based on eFlash is gradually showing an imbalance between cost and performance. In light of this, UMC invested in the R&D of eMRAM in 2018. For this R&D plan, UMC plans to verify a macro test chip in 2020 and expects that this technology can be incorporated into its 22nm platform in 2021 for potential customers.

ReRAM

ReRAM is a novel NVM with a simple structure, low operation voltage, low read current, fast program/erase speed and very good reliability. The ReRAM process is fully logic compatible with fewer add-on masks and low extra cost. UMC started to co-develop ReRAM with Panasonic in 2017 and was already in risk production in 2019. UMC plans to make this novel NVM technology widely available.

Display Driver IC Process Technology

The Display Driver IC market has demonstrated potential for rapid growth and possibilities in numerous applications, including smartphone, portable phone/PDA, computer screen, touch screen, Tablet PC, e-book, TV, digital camera, on-board screen, and wearable display. UMC's High Voltage Technology has led the development of various voltages to meet the specifications requirements of various application markets. UMC was the first in the foundry industry to introduce a 40nm High Voltage Process, and mass production has been achieved for high-end LCD Display and high-end OLED Display markets. Meanwhile, the 28nm High Voltage Platform has entered pilot production. In addition, UMC has begun developing a 22nm High Voltage Platform to provide smaller SRAM with higher capacity in order to meet the demand of the 2K/4K high-end display market.

Power Management Process Technology

As for the demands for various power management applications (PMIC), UMC's super high voltage (5V and 30V in coordination with 300V, 500V or 700V) processes have

Overview of Technology and R&D (Continue)

entered the mass production stage. This technology is suitable for special applications such as power charger, LED bulb, power amplifier, AC/DC converter, and motor driver and can meet industry demand for higher voltage and reduce the energy consumption during voltage conversion in order to save energy. As for customers with demands for highly integrated power management, UMC can provide a complete silicon IP platform compatible with the standard logic process, and various 0.5, 0.35, 0.25, 0.18, 0.11 micron and 55nm process technologies that integrate world-class, third generation low conduction resistance/high sustained voltage (5V~200V) devices that can be used for cell phone, Tablet PC, appliance, vehicle applications, etc. UMC has also begun developing a BCD+NVM technology platform, and adopted a 12-inch 55nm copper process for PMIC as a complete SoC solution for energy-saving demands.

CMOS Image Sensor (CIS), MEMS, and RFSOI Technologies

For CMOS image sensor technology development, UMC's 65nm process has been verified to enter the mass production stage. Other new processes, such as back-illuminated sensor (BIS) and 55nm CIS process technologies, have entered the verification stage. This technology is expected to provide higher sensing resolution to meet product upgrade requirements. With the rising popularity of MEMS sensor applications, the demand for CMOS-MEMS pure-play foundry service has also increased. For UMC's MEMS microphone process platform, in 2019, several customers taped out multiple new products using UMC's MEMS microphone reference process, and the volume continued to grow steadily. The second generation of CMOS-MEMS gas sensors has also entered the verification phase. Regarding RFSOI process technology, its unique substrate characteristics can prevent high-frequency signal harmonic frequency distortion and reduce power loss. At present, UMC's 0.13um and 0.11um processes have been widely adopted by smart phones for mass production. UMC also started to develop 90nm and 55nm RFSOI technology platforms to catch subsequent growth momentum.

Non-Volatile Flash Memory

UMC has always been dedicated to providing customers with complete SoC solutions, among which the non-volatile flash memory device is the essential device for most applications. Auto chips, MCU applications and consumer products such as touch control applications all require the support of

embedded flash technology. In addition to the successful mass production of 0.18um and 0.11um technologies, 55nm embedded flash memory has successfully entered the mass production stage. The MCU products equipped with 40nm embedded charge trap (eCT) flash memory is also in mass production, and the 40nm technology platform with SST (Silicon Storage Technology) embedded SuperFlash® non-volatile memory has entered small volume pilot production in order to provide customers with better performance and higher density memory. UMC has begun developing a 28nm SST embedded SuperFlash® non-volatile memory platform and researching new materials for flash memory such as ReRAM in order to meet customer demands for higher specifications. Embedded flash memory is embedded on UMC's logic technology platform, such that the silicon IP on all logic technology platforms can support the SoC design of our customers to further enhance industry competitiveness.

Mixed Signal/RF Foundry Design Kit

Foundry design kits can provide IC design houses with an automated design environment to eliminate unnecessary human manipulation to ensure the success of their chip design. UMC's complete mixed signal/RF design flows for different processes cover both the frontend and backend of RF IC Design, which can provide channels to obtain the design and simulation of circuit level, circuit layout, layout verification, and precise RF device mode. In the frontend flow, UMC's fundamental devices of its mixed signal/RF process are executed using a general design environment and simulation tools. In the backend flow, it covers parameterized cell (P Cell), including image-oriented layout, in order to provide an automated and complete design flow. Meanwhile, a callback function is provided during the design flow to reduce the data input. Design houses can enhance the productivity and reduce the risk of error via this flow.

UMC has worked with EDA vendors to provide its customers with a parameterized spiral inductor design kit based on full-wave simulation – VIL (Virtual Inductor Library). VIL can allow RF CMOS design houses to create and simulate the customized inductors compatible with UMC's process. VIL is established based on UMC's EMDM (Electromagnetic Design Methodology) such that engineers can easily and precisely create any RF structure. EMDM allows design houses to have more flexibility to create new geometric modes via editing parameters such as diameter, turn, width, and track pitch.

Overview of Technology and R&D (Continue)

In addition, UMC's foundry design kit provides the Optimum Inductor Finder (OIF). OIF allows design houses to quickly and precisely create a large amount of calibrated inductor design libraries with respect to UMC's process. Meanwhile, OIF also allows users to use software to execute the optimized inductor via several simple steps. For example, customers can define desired inductance coefficients to reach the balance between quality factor and area. OIF can select a design that best fits the specifications from the inductor design library within the shortest amount of time.

Silicon IP Support

Along with the design trends toward more precise deep sub-micron generation processes and increasing design complexity, foundry can no longer only focus on process yield improvement, but must also help customers shorten their design flow and reduce design cost. In terms of library design kits, UMC strengthens its design support capability by constantly providing optimized library design kits closely integrated with the Company's process technology in order to help designers accelerate the completion of their chip design. From mature to advanced process technologies to specialty processes, UMC can provide complete Standard Cell, I/O and customized libraries to meet customers' chip design needs. In terms of logic process, UMC's standard cell library for advanced processes can provide devices of various operating and threshold voltages (Vt). Along with low power library kits, they can meet various customer needs for design flexibility and high performance/low power applications. UMC's I/O library has an extremely small area, and it is qualified through a stringent Electrostatic Discharge (ESD) test to help customers design competitive products that can pass the ESD test with voltage as high as 4kV. So far, numerous customers have taped-out

successfully and mass produced products using UMC's I/O library on 110, 90, 65, 55, 40, and 28nm processes. UMC also provides customized embedded flash memory (eFlash) IP on various process generations according to customer needs and has successfully helped customers with quick market entry for their products. In addition to UMC making IPs, the Company has also established partnerships with industry-leading IP vendors in order to provide physical library, non-volatile memory IPs, and diversified analog/mixed signal IPs that support industrial standard interfaces (such as USB, DDR, and HDMI). This year UMC has extended its long-term IP cooperation with all leading IP vendors to 22nm and 14nm processes in order to provide customers with a competitive design support environment.

Intellectual Property

Facing increasing technological competition, UMC has significantly strengthened patent filings to protect intellectual property in addition to greatly enhancing technological capabilities in critical fields. Following the Company's operation and development planning, UMC's IP division has formulated strategies and plans for the protection and development of intellectual property to promote the steady growth of the number of patent rights. Status on the implementations is reported to the board of directors at least once a year. The Company was granted a total of 515 domestic and foreign patents in 2019, 345 of which are US patents, 94 ROC patents, and 76 China patents. The total accumulated number of UMC's patents is 13,507, which can provide a thorough and strong IP foundation for UMC's technologies. To keep this competitive edge, UMC has greatly increased the quality and quantity of critical technology patents in order further strengthen customer service and competitiveness while helping them to create profits.

Long-Term and Short-Term Business Plans

UMC is committed to delivering comprehensive wafer fabrication solutions to its customers based on cooperation with partners in the entire supply chain, including suppliers of equipment, automated electronic design tools, wafer design service, silicon IP, and packaging and testing. The Company provides customers with verified reference flows, broad silicon IP combinations, free design cell library databases, and diversified options for packaging and testing. With advanced process technologies and world-class 12-inch wafer fabrication technology, UMC can assure accelerated time-to-market for its customers' SoC designs.

Short-Term Objectives

UMC's short-term objectives are to expand the production capacity of 8-inch and 12-inch specialty technologies and advanced processes, enhance capacity utilization rate, and strengthen profitability. Currently, UMC owns four 12-inch fabs. In addition to the mass production of 14nm products, UMC's rich technology platforms at various process nodes and diversified specialty technologies can meet all requirements of primary market applications. At the same time, we continue to conduct structural productivity enhancements and manufacturing capacity optimization of 8-inch and 12-inch fabs to embrace new opportunities and improve revenue.

Medium-to-Long-Term Objectives

Advanced and specialty process technology R&D and investment has always been a primary focus of UMC. The advanced processes equipment procurement will be managed more efficiently, and all important R&D work will be implemented according to plan. UMC will work to reduce expenditures and enhance operational efficiency to effectively control costs, while providing customized advanced and specialty process technology platforms to meet customers' needs. UMC's capital expenditure for 2020 is expected to be approximately USD 1 billion. In order to expand business scale, UMC is looking for existing

fabs which are for sale, and will evaluate the possibility to acquire it, because acquiring an existing fab is more effective to meet UMC growth strategy -- to expand cost-effective capacity for competitiveness.

Facing market requirements for continuously advancing semiconductor technology, in addition to UMC's own technology R&D, the Company will work with strategic partners and supply chain vendors to jointly develop 3D chip integration technologies. UMC will also continue raising environmental protection awareness and care for the environment. In addition to establishing a low carbon supply chain, UMC is dedicated to the support of various environmental protection activities and the promotion of environmental protection education.

Outstanding UMC Achievements in 2019

- UMC led the industry by implementing the "2018 Climate Change Program" as its highest guiding principle.
- UMC earned its first "Green Chemical Application and Innovation Award".
- UMC was among the highest ranked in "Corporate Governance Evaluation" for the 5th consecutive year.
- UMC was named as a "FTSE4 Good Index Series Constituent" for the second consecutive year.
- UMC was selected as a "DJSI Global Component" for 12th consecutive year.
- UMC received final approval for 100% acquisition of Mie Fujitsu Semiconductor.
- UMC earned its first "National Enterprise Environmental Protection Gold Award".
- UMC was named as 2019 "Taiwan Enterprise Sustainability Platinum Award" for the second consecutive year.
- UMC earned the "2019 Energy Saving Gold Award by Ministry of Economic Affairs".
- UMC was awarded with "Corporate Continuous Improvement Activity" honors for the 16th consecutive year.

Overview of Market, Production, and Sales

Market Analysis

Primary Product Sales Regions

UMC's products have been well recognized by its important customers covering all global regions. The sales regions of the Company's products are mainly Asia Pacific and North America, which account for 57% and 32% of UMC's total sales revenues, respectively. Europe and Japan accounted for 11% of total sales revenues. In the future, UMC will continue to strengthen its cooperation with world-class customers in all regions and focus on the development of high-end products for customers in order to ensure consistent medium and long-term company growth.

Market Share

UMC is a world leading semiconductor wafer foundry. The total revenue of the global pure-play wafer foundry market in 2019 was approximately USD 62.2 billion. According to the estimation by market survey institution Gartner, UMC has a 7.9% share of the pure-play wafer foundry market, and its main competitors are TSMC, Globalfoundries and SMIC. In 2019, the total operating income of these four companies accounted for 84.0% of the total pure-play wafer foundry market.

Future Supply-Demand Status and Market Growth

- According to the market survey of Semiconductor Industry Association (SIA), the total sales revenue of the semiconductor industry in 2019 was close to USD 418.3 billion, which has declined by 12.9% from 2018. The semiconductor sales revenue in 2020 is expected to rebound with over 7% growth.
- According to the market survey of Semiconductor Industry Association (SIA), the sales revenue breakdown of the semiconductor industry by area in 2019 was as follows: China led with 34%, followed by North America at 22%, Europe at 9.2%, Japan at 8.5%, and Asia others (excluded China, Japan) totaling 26.3%.
- Looking forward to the driving force behind pure-play foundry market growth, the growth momentum of fabless design companies typically outpaces the semiconductor industry, and IDMs have adopted or raised the ratio of wafer fabrication outsourcing to save costs and reduce market risk. Both of these factors have contributed to the high growth of the pure-play wafer foundry market; thus the performance of the pure-play wafer foundry industry is expected to be better than the overall semiconductor industry.

Niche of Competition

- There has been prosperous development of IC design houses in China in recent years. Geographical proximity, similar culture, the acquisition of HJTC, and the operation of a 12-inch fab in Xiamen have all helped UMC to take advantage of the China's IC industry growth. In order to expand capacity globally, UMC acquired 100% of Mie Fujitsu Semiconductor Limited (MIFS), to make MIFS a wholly-owned subsidiary. It has been renamed as United Semiconductor Japan Co., Ltd. (USJC), and mainly utilizes 90nm to 40nm technology. All of these have all helped UMC gain a good position in the global semiconductor market and increase market share. It has also enabled UMC to conduct integration of products, orders, and process technologies in response to customers' needs in order to pursue the relative competitive advantages of China's market expansion and operational scale; it is expected that UMC can benefit from the rapid growth in this regional market.
- UMC is optimistic about the demand for high-end chips in the future market of mobile communication and computation; thus proper and cautious capital expenditure to promote the R&D of related processes and the establishment of advanced production capacity has been conducted. The Company has also actively deployed its specialty technology solutions, such as high voltage, embedded flash memory, advanced packaging, RFSOI, etc., to continue working with leading customers to pursue more flagship products. UMC is committed to providing sufficient production capacity and to establish an open technical platform with our back-end packaging and testing partners to provide proper services.
- The overall structure of Taiwan's semiconductor industry is complete, exhibiting world-leading competitiveness in terms of both operational efficiency and cost. Taiwan's semiconductor industry competitiveness combined with UMC's technical edge results in a positive multiplier effect for the company.

Overview of Market, Production, and Sales (Continue)

Favorable Factors for Development Outlook

Considering the continuous growth of the IC industry, the ideal position of pure-play wafer foundry, and the company's competitiveness, the favorable factors of long-term company development are summarized as follows:

- Under the trend of IC design and fabrication vertical division of labor, there has been prosperous development of the pure-play wafer foundry market and rapid growth of global demand for pure-play wafer foundry services.
- IDMs have adopted the strategy of outsourcing to wafer foundry, thus contributing to the growth of the pure-play wafer foundry market.
- Forming strategic alliances with major international companies to acquire long-term stable orders.
- A strong management team, advanced process R&D, and superior business development capability can result in outstanding operational performance.
- UMC is one of the most active companies in the foundry industry in developing 12-inch wafer fab manufacturing capabilities, owning a 12-inch fab in the Tainan Science Park, one in Singapore, and another in Xiamen, China, and the latest one in Japan. As for the future investment in 12-inch fabs, the production capacity will be further expanded according to customer needs and market application trends.
- In response to the ongoing trends of electronic products, UMC has developed specialty technologies including embedded memory, mixed signal, RF, MEMS sensor, and high voltage to meet customer demand for process technologies and to establish a leading position for UMC technology development.
- UMC has established the most powerful IoT specialized platform solution in the industry and provided an ultra-low-power (ULP) process with extremely low current leakage design suitable for all kinds of hybrid process technologies. IoT chip designers can integrate various process schematics to the customized platform based on UMC's low power consumption technology in order to meet the specific requirements to enter the IoT and wearable electronic device markets.
- UMC developed an advanced 28nm eHV (embedded High-Voltage) process, and mass-produced AMOLED display driver ICs successfully. Compared to previous-generation technology, Display drivers designed using 28nm eHV could improve power efficiency of smart phone screens. Looking forward, the rising demand of 5G smart phones is expected to bring considerable revenue growth.
- UMC developed advanced 28nm technology, including Poly-SiON and high-K metal gate processes, which have already been mass-produced successfully for many logic/RF products. Besides these, an automotive-grade process was also qualified and related IP is ready, with many customers designing-in now.
- UMC's 22nm technology process provides customers further advantage for cost-saving and improved device efficiency. The process design kit has been released to customers; we expect this process will extend our long-term competitiveness.
- UMC's 14nm (FinFET) process technology already successfully entered mass production for customer chips in early 2017. The yield for shipments to primary customers has reached industry competitive levels for this highly advanced process. Being one of the few foundries in the world to achieve 14nm production capabilities, UMC has fully demonstrated the advantages of 14nm FinFET in terms of efficiency, power, and gate density in order to drive next generation ICs in the fields of communication, AI, and various consumer products. UMC's 14nm FinFET is 55% faster with twice the gate density of 28nm, while power consumption is reduced by around 50%.
- UMC developed a mmWave process technology -- ranging from 55nm to 40nm ultra low power, and a 28nm high performance/low power platform. We are developing 22nm ultra low power/ultra low leakage process technology, which offers customers more choices for their product planning, to meet reliable, low power and cost-effective requirements.

Overview of Market, Production, and Sales (Continue)

- UMC RFSOI technology is based on a CMOS process to meet cost effective and strict technology requirements for the smart phone market. The RFSOI technology platform provides RF N-gate/P-gate MOS and scalable advanced RF modeling to precisely predict the circuit characteristics of the process. High-density and high-voltage MIM, scalable inductor and high-precision resistors will provide our customers with the best design and cost advantage.
- The process platform of 40nm integrated with Silicon Storage Technology (SST) embedded SuperFlash® non-volatile memory is 20% smaller than the mass production 55nm unit, and the total memory area has been reduced by 20-30%. There have been more than 20 customers and products manufactured at all stages based on UMC's 55nm SST embedded flash memory process, including SIM card, financial transaction, automobile, IoT, MCU, and other product applications.
- The MEMS gas flow sensor process platform jointly developed by UMC and one of its customers is in successful mass production and has been provided to end customers in various fields, including medical products and automobile gas flow sensors. Currently the customer has successfully sent samples to major mobile phone makers to be tested.
- UMC has provided Through Silicon Via (TSV) 2.5D/3D IC technology to customers requiring advanced packaging technology under the environment of an open supply chain cooperative development. With top-notch TSV and front-end wafer processes provided by foundry fabs, highly innovative mid-to-back-end 3D IC stacking, and packaging and testing from back-end service providers, a complementary and complete platform can be formed to provide a reliable 2.5D/3D IC solution for the semiconductor market.
- Among political economic tension between international society, countries sanction competing countries for their market expansion and technology development. This impacts the company's investment and operation activities. The U.S.-China trade war was caused by a long-term trade deficit between U.S. and China, and U.S. concerns about infringement of intellectual property rights and business secrets. This trade war is not expected to conclude in the near future and will even become a long-term confrontation. Intervention includes tariffs, closed sales, policy intervention and government subsidy, etc. The impacts to UMC, including a tariff barrier between the U.S. and China will lower semiconductor demand of the U.S., China and even worldwide, with customers reducing orders and a weakening global semiconductor market. U.S. regulation to stop foreign shipments of products containing U.S. technology to China's companies will possibly impact UMC's shipment to China's customers. High-tech material export bans bring uncertainty to our production and time-to-delivery.

Countermeasures

- Continuous cost saving and efficiency enhancements to effectively reduce costs, and cautiously and effectively expanding the production capacity of advanced processes; strengthening the competitive edge of the company by increasing the ratio and product mix towards high-end processes.
- Expanding the footprint of 12-inch fabs through investment participation and strategic alliances to reduce the time, risk, and cost of construction of new fabs and to serve local markets.
- Diversification of customer area and products can lower the impact of the trade war. Besides existing strong business from China and the U.S., UMC plans to expand more business from Europe, Japan, Korea, etc. To avoid the uncertainty of originally high growth business from server, automotive and industrial markets, UMC plans to gain more business opportunity from 5G, IoT, AI, etc.

Unfavorable Factors for Development Outlook

- Due to the optimism of future long-term annual growth for semiconductor demand, all major global pure-play wafer foundries and China have increased their capital expenditures for expansion of production capacity based on advanced processes, which could lead to an imbalance of supply and demand in the future market.

Overview of Market, Production, and Sales (Continue)

- Avoiding blind expansion of production capacity; all investment plans have been carefully evaluated with complete consideration of UMC's maturity of high-end processes and customer's production capacity demands at various stages.
- In response to the addition of new competitors, UMC continues to enhance development of advanced processes, and maintains the existing advantages of stable high yield and complete services. The benefits of these are twofold: UMC can increase its lead against new competitors while also creating differentiation such that UMC can continue to be the best option for its customers.
- Providing the most advanced and proper process services with respect to IC product characteristics in all application fields in order to help customers achieve the goals of lowest cost, high efficiency, and low power consumption.
- Strengthening marketing effectiveness and the customer service mechanism in order to continuously improve customer satisfaction.
- Strengthening the development of long-term partnerships with customers, providing competitive advanced processes and production capacity, helping customers expand their market share, and growing together with customers in order to seize the opportunity of new growth waves.
- Taking countermeasures at all times to respond to constant market variations while facing global recession. Expanding customer bases, improving product mix, and further enhancing the flexibility of production capacity allocation in order to mitigate the impact of periodic demand fluctuation.

Important Purposes and Production Processes of Main Products

Main Process Technologies and Corresponding Products

- CMOS Logic: for fabricating chips that execute logic computing functions, such as programmable gate array, multimedia processor, and application processor chips.
- Mixed-Signal: for fabricating chips which can simultaneously process analog/digital mixed signal, such as ICs for broadband access communication and optical storage.
- RF CMOS: for fabricating high frequency wireless communication chips, such as ICs for cellphone RF transceiver, Wireless Local Area Network (WLAN) and Bluetooth.
- Embedded Memory: for fabricating integrated logic and memory chips for high performance with low power consumption, such as chips for micro-controller, touch controller, and smart card.
- High Voltage: for fabricating driver ICs for LCD TV, cellphone, and tablet, e-paper screen driver IC, and power management IC.
- CMOS Image Sensor: for fabricating CMOS image sensors used in digital camera, cellphone, and webcam.
- MEMS: for making application products such as microphone, inertia sensor, and pressure sensor.
- 3D FinFET: for fabricating high performance chips and chips for executing fast logic computation, such as mobile phone baseband processor, application processor, and memory controller.
- RFSOI process: for fabricating wireless front-end chips, such as wireless switch, tuner used by mobile phones, WLAN, and wireless base station.

Production and Fabrication Process

A complete IC chip fabrication process can be divided into five processes, including IC design, mask fabrication, wafer fabrication, packaging, and testing. UMC has been dedicated to the R&D of advanced IC processes and specialty technologies in order to provide customers with technologies, materials, and equipment required by their IC designs.

Status of Supply of Primary Raw Material

Type of Primary Raw Material	Primary Suppliers	Market Status of Suppliers	Procurement Strategy
Silicon Wafer	<ul style="list-style-type: none"> S.E.H. Taiwan (manufacturing sites: US, Japan, Taiwan, and Malaysia) SILTRONIC Singapore (Manufacturing sites: Germany, US, and Singapore) Global Wafers (Manufacturing sites: US, Taiwan, Italy, and Japan) SUMCO Group (Manufacturing sites: Japan and Taiwan) SK Siltron (Manufacturing site: Korea) 	These five makers are the world's primary silicon wafer suppliers with production sites in the US, Japan, Germany, Italy, Korea, Taiwan, and Southeast Asia. They can offer steady and high quality silicon wafers.	<ol style="list-style-type: none"> The Company has been in long-term procurement relationships with the world's primary suppliers in order to ensure the steady access to production material. In recent years the ratio of procurement from local makers has increased, which can reduce the risk of international transportation and procurement costs. The Company will convene a supplier management committee meeting every quarter to evaluate suppliers' performance in order to adjust the ratio of procurement from these suppliers.

Major Suppliers

In Thousand NTD

Name	2019			2018		
	Amount	Percentage of Net Purchase	Relation to UMC	Amount	Percentage of Net Purchase	Relation to UMC
Supplier "A"	5,675,751	14	None	5,277,316	12	None
Others	35,982,480	86		37,620,283	88	
Net Purchase	41,658,231	100		42,897,599	100	

Note: As of the Annual Report printing date, if there is any financial data of the publicly listed company (or company with stocks transaction in securities firm's premises) certified or approved by CPA audit, it should be disclosed: None.

Reasons for changes in procurement amount: No major changes.

Major Customers

In Thousand NTD

Name	2019			2018		
	Amount	Percentage of Operating Revenues	Relation to UMC	Amount	Percentage of Operating Revenues	Relation to UMC
Customer "A"	17,576,293	12	None	15,357,470	10	None
Others	130,625,348	88		135,895,101	90	
Operating Revenues	148,201,641	100		151,252,571	100	

Note: As of the Annual Report printing date, if there is any financial data of the publicly listed company (or company with stock transactions in securities firm's premises) certified or approved by CPA audit, it should be disclosed: None.

Reasons for changes in sales amount: Due to the increased demand of communication products, the contribution of customer "A" slightly increased.

Production Figures

Segments	Unit	2019			2018		
		Capacity	Production Quantity	Production Value (In Thousand NTD)	Capacity	Production Quantity	Production Value (In Thousand NTD)
Wafer Fabrication	In Thousands of 8-inch Wafer Equivalentents	8,148	7,229	123,055,291	7,673	7,145	122,845,827
New Business				227,873			413,129
Total				123,283,164			123,258,956

Sales Figures

Segments	Unit	2019			2018	
		Shipments	Amount (In Thousand NTD)	Shipments	Amount (In Thousand NTD)	
Wafer Fabrication	In Thousands of 8-inch Wafer Equivalentents	Domestic	2,977	53,190,058	3,077	54,034,510
		Export	4,212	89,434,961	4,031	88,515,794
New Business		Domestic		17,627		82,118
		Export		26,118		73,581
Total		Domestic		53,207,685		54,116,628
		Export		89,461,079		88,589,375

Note: Net Sales.

Industry Specific Key Performance Indicators

KPI	2019		
	Target	Actual	Difference
Utilization Rate	94.7%	88.7%	-6.0ppts
Wafer Sales Contributed from 40nm and below Technologies	36.5%	34.4%	-2.1 ppts

Employees

Number of Workers

	2020	2019	2018
Engineer	11,206	11,328	11,651
Administrator	810	809	753
Clerk	23	24	31
Technician	7,387	7,416	7,494
Total	19,426	19,577	19,929

Average Age

	2020	2019	2018
Average Age	37.2	37.1	35.4

Average Service Years

	2020	2019	2018
Average Service Years	10.7	10.5	8.7

Educational Distribution Ratio (%)

	2020	2019	2018
Ph.D	1.6	1.6	1.7
Master	27.9	28.1	29.4
Bachelor/Associate/Diploma	48.1	47.6	48.5
High School and Below	22.4	22.7	20.4

Note: The data represented for 2020 was gathered until February 26, 2020.

Environmental Expenditure Information

By the publication date of the 2019 annual report, all audits on UMC by environmental protection agencies showed results in compliance with regulatory requirements with no environmental protection violations or any penalty or loss resulting from environmental pollution.

UMC has identified environmental risks during the operational process according to the spirit of international environmental management system (ISO 14001) standards, based on which corrective and preventive measures can be continuously conducted, including equipment hardware improvement, enhancement of personal educational training, and strengthening of operating system management.

In 2019, the total environmental protection related expenditures for all UMC fabs have exceeded NTD 2.27 billion. The environmental related expenditures include investment in highly efficient pollution prevention

technology and preventive equipment, totaling NTD 860 million. The monthly pollution prevention expenses and O&M of pollution prevention equipment exceeded NTD 89.5 million, while the monthly waste disposal cost exceeded NTD 19 million. Meanwhile, NTD 8.7 million has been spent on annual environment monitoring to track the overall emission of pollutants. In addition, in response to RoHS (Restriction of Hazardous Substances), around NTD 700,000 has been spent on continuous certification of the QC-080000 IECQ HSPM system, product inspection, and educational training.

In the future, the Company's primary environmental protection expenditures and items will include: 1. Costs of replacement, renewal, and upgrade of existing pollution prevention equipment; 2. Operational costs of pollution prevention equipment; 3. Waste disposal costs, and 4. Environmental monitoring costs.

Labor Relations

UMC has consistently valued employee benefits and welfare, and has actively cultivated talent, implemented labor laws and regulations, protected employee rights and interests, and created a bright and pleasant working environment. UMC complies with various local laws and regulations, and strengthens employee awareness to prevent labor disputes. Through channels such as labor-management meetings, divisional meetings, forums, suggestion boxes, grievance hotlines staffed by complaint specialists, and communication management units, the Company has achieved competent communication and effective problem-solving.

In addition to effectively maintaining harmonious labor relations, UMC respects and promotes international human rights by providing employees with a quality employment environment. Moreover, in UMC and all its subsidiaries, the management and implementation of labor relations such as employee welfare measures, in-service education, training and retirement systems are planned and conducted in accordance with or above and beyond the requirements of law. UMC has also set up in-house physicians to provide medical services and quality counseling services for the physical and mental health needs of employees, thereby promoting harmonious labor relations.

UMC is committed to providing employees with a safe and friendly working environment. Through continuous efforts, UMC has received numerous awards from the Ministry of Labor and other organizations for excellence in labor welfare, labor education, labor relations and human resource innovation, and the national excellence award for friendly workplace. Among these awards, the Special Distinction Award was given by the Hsinchu Science Park Bureau and Southern Taiwan Science Park Bureau for Excellent Workplace Equality.

At the same time, UMC also won various corporate sustainability awards in 2019. For corporate sustainability, UMC ranked in the top 5% for corporate self-governance, and has won the Taiwan Corporate Sustainability Platinum Award, Ministry of Economic Affairs Energy Saving Benchmark Award and National Enterprise Environmental Protection Award. In addition, UMC has been listed on the Dow Jones Sustainability Index (DJSI) for 12 consecutive years. From recent years to the publication of this annual report, UMC has not suffered any loss arising from labor disputes. In view of the abovementioned comprehensive system and diligent management, UMC can continue to effectively avoid labor disputes or losses.

Education and Training

High-quality talent is the cornerstone of UMC's competitiveness, and comprehensive talent development and cultivation are the keys to improving human resource quality.

UMC's human resource cultivation policies are tailored according to the career development needs of employees in their particular job type and rank. The policies provide systematic training for all employees, such as new employee, technical, management, quality control and language courses. In addition, a wide range of learning resources such as online learning courses, on the job training (OJT) and in-service training are also offered to provide all employees with a working environment that is conducive for continuing development. In 2019, UMC conducted a total of 7,733 training sessions totaling 13,740 hours of training, with 176,398 participants and total training expenses of NTD 48,335,306.

The following is a summary of training courses provided by UMC:

- **New Employee Orientation:** To help new employees quickly adapt to the work environment, orientation training is provided for new employees to give them a basic understanding of semiconductor processes and establish a common language. In addition to basic courses on company organization, remuneration and benefits, basic daily necessities and industrial safety, U-Camp courses on workplace stress management and adopting a positive attitude also help new employees understand the spirit and values of UMC. To help new employees quickly develop professionalism and an appropriate job attitude, they are paired with a mentor to help them quickly integrate into the corporate culture.
- **Technical Training:** To help engineers quickly master the overall technologies and continue to advance technologically, UMC has a comprehensive training blueprint for engineers that is specific to divisional attributes. The curriculum includes basic courses (General to Level 2 courses) and advanced, technology-specific themed seminars (Level 3 - 4 courses) to enhance the technical capability of the engineers and develop a system of internal experts.

In addition, to equip employees with multiple skills and promote cross-divisional cooperation, UMC began promoting inter-divisional training courses in 2008 to increase the depth and breadth of professional and technical training for employees. Furthermore, curriculum content is continuously improved to meet the rapid changes and progress of technology.

- **Management Skills Training:** Management skills development is an important task for supervisors at all levels. To this end, UMC provides a series of courses targeting competencies relevant to supervisors, such as management behavior, skills, knowledge and corporate culture integration. To assist supervisors with achieving cooperation in their work and management, learning resources such as foreman/sectional chief, grassroots supervisor, middle-level supervisor and senior executive training courses are conducted.
- **Quality Training:** Training courses relevant to UMC quality policies and quality requirements are conducted, such as knowledge management, proposal improvement, project management, problem analysis techniques, statistical process control and experimental design.
- **Language Training:** Employee language proficiency is determined through language testing. Training programs targeting specific learning needs are then provided accordingly to strengthen employee language skills and workplace competitiveness.
- **E-Learning:** UMC has established a learning webpage for employees that integrates all course information, training systems and data enquiries. The online platform enables employees to easily access needed information for planning and learning without schedule constraints.
- **On the Job Training:** Each fab has a Training Committee to provide training for employees in the various divisions. The training is based on skills required by specific jobs and professional skills assessment to ensure that employees have the required job competencies. Additional training based on individual differences is also provided to improve the quality of work. The Human Resources Division conducts an annual review of training outcome to determine and direct the operations of the Training Committee in each fab, and convenes a training outcome meeting so that the fabs can share their experience.
- **In-service Training:** UMC provides information on in-service courses offered by outside colleges and universities, promotes educational resources and offers subsidies for in-service training to encourage employees to develop the professional competencies or management skills required at each stage of their career.
- **Business Ethics Training:** To enhance the behavioral literacy, professional ethics and professional competence of UMC and all its employees, courses on employee ethics, insider trading prevention and conflict of interest are conducted within the Company and promoted in the

Planning Section of the UMC intranet site. To gain public trust, all employees (including high-level executives and other managers in the operation team) are expected to abide by the ethical spirit of the Company in their daily tasks and businesses, thereby ensuring the sustainable growth and development of the Company.

To ensure effective training direction and implementation, the Human Resources Division develops education and training projects in the fourth quarter of each year according to annual company-wide policies, the General Manager's directives for training focus and direction,

and company-wide survey of training needs. The projects include company-wide, cross-divisional and divisional training programs. Program implementation is reviewed each quarter, and corrective and improvement measures are proposed for unachieved goals to ensure the effectiveness of specific employee training.

UMC believes that creating a high-quality work and learning environment can increase employee performance output and retention, and that high-quality employees who continue to develop are the key foundation to the sustainable development of UMC.

Employee Benefits

Employee Welfare System

UMC believes that employees are the most important assets of the Company, and that a company can continue to develop and progress only with appropriate and sufficient talent. To this end, UMC is committed to creating a healthy workplace environment. In addition to providing competitive salaries and dividends, a comprehensive education and training system, diverse benefits and a safe and healthy working environment, UMC has also developed a comprehensive employee welfare system in accordance with local laws and regulations and regional needs.

UMC provides a variety of welfare measures as follow:

- Nutritionally balanced and delicious meals: Each fab has its independently operated cafeteria and a variety of meal options. By combining the cafeteria, cafe and convenience store into an integrated dining area, employees can enjoy healthy and balanced meals.
- Fitness Sports Center: UMC operates its own recreation center in the Hsinchu science park, and Tainan Fab 12A has the UMC Park Activity Center, a multi-purpose sports center gym and the LM Dormitory gym. In addition, other facilities such as gyms and aerobic classrooms are located in appropriate areas of UMC fabs to reflect the concept of a healthy workplace.
- Welfare Events: The Welfare Committee routinely organizes events (such as Family Day, art activities, movies, trips), and in coordination with company celebrations, organizes inter-fab competitions to cultivate team unity. At the same time, other inter-divisional and inter-fab activities are held during holidays to enhance employee work-life balance.

- Club Recreation: UMC has five major categories of clubs, such as sports, arts and community service. Whether active or more sedentary, employees can choose from a variety of content. In 2019, UMC had a total of 30 clubs and about 2,347 participants.
- Accommodation and transportation assistance: UMC provides safe and comfortable accommodations for both direct labor and indirect labor. Free scheduled transportation and shuttle services are also provided for convenient and quick connections.

At the same time, the UMC Welfare information platform was optimized in 2018 with the introduction of the Welfare Club APP; through GPS, employees can instantly find contract stores, thereby further enhancing their after-work life.

UMC also holds employee health in high regard, and plans and implements benefits in accordance with or above and beyond the requirements of the law. For example, UMC complies with the Act of Gender Equality in Employment, the Regulations for Establishing Measures of Prevention, Correction, Complaint and Punishment of Sexual Harassment at Workplace, and regulations for leave such as personal, sick, maternity, paternity, menstrual, family care, marital, bereavement, occupational sickness, annual, parental and nursing leaves.

In particular, UMC is the first private enterprise in the country to promote a 12-hour rotating shift for its direct labor. Further worth mentioning is the Company's comprehensive insurance system where from the day of their employment, employees are provided with numerous insurance services.

Employee Benefits (Continue)

In addition to labor, health and free group insurance (NT 2 million group insurance and cancer insurance), the spouse and children of employees can enjoy life insurance, accident insurance and group medical insurance, and their parents can enjoy accident and medical insurance, thereby freeing them of worry and enabling them to work their best for the company and society.

Employee Health

UMC has a longstanding commitment to creating a workplace environment that is physically, mentally and spiritually healthy. UMC is convinced that only employees who are physically and mentally healthy can be highly efficient and produce excellent work performance. In addition to assisting employees in all aspects of health management and health promotion, UMC also reaches out to their families in the hope of boosting employee work morale and improving the quality of their work.

While valuing the physical condition of employees, UMC also spares no effort in their mental health management. Through a confidential agreement mechanism, employees are also provided with free professional psychological counseling. Moreover, employees and their families are given new health knowledge through online platforms, lectures, conference and publicity materials to help them maintain good physical and mental health.

To help employees balance their physical and mental health and that of their families in their busy work life, UMC provides free counseling services to ensure the mental health of employees. Through confidential professional counseling, employees are assisted in addressing their psychological and spiritual issues. In addition, through the Internet, brochures and lectures, employees are given the knowledge and skills for healthy living, thus enabling them to meet the multiple challenges of work and family.

In 2019, UMC adopted the “My UMC Health Diary” as the main focus of health promotion activities for each quarter, and integrated occupational safety and health laws such as maternal protection, overwork prevention, human factors engineering and healthy body posture regulations to protect employee health. At the same time, medical checks for employees and hospital check-ups for their families are provided annually. A variety of health promoting

activities and education are then organized for employees accordingly to give them further knowledge and skills for self-managing their health and the health of their families. Furthermore, through occupational safety and health project management, UMC's Health Center has installed an internal reporting system for potential occupational chronic injury and disease, with regular hearing inspections and vision care programs to effectively prevent occupational injuries. Moreover, as of 2019, UMC's IT divisions have integrated their existing systems to construct a customized personal Health Care System for employees. In addition to allowing employees to instantly access their health check report and consult with medical staff online, the system increases the daily follow-up rate by the medical care team. In addition to regulatory annual checkups, UMC also offers a variety of preventive screening and health promoting activities such as cancer screening for women (PAP smear, gynecological ultrasound, breast ultrasound), other cancer screening, flu vaccination, abdominal ultrasound and other out-of-pocket items so that employees can choose appropriate health checks according to their needs.

Risk control identifies and mitigates risks before they can cause harm, and to minimize the probability of occurrence and degree of damage, the Health Center must naturally assume frontline duty. The above-mentioned health management methods and health promotion activities are intended to ensure that employees sufficiently understand and actively participate in improving their own health condition, so that the purpose of early diagnosis and treatment can be achieved. It is hoped that every employee can support and grow with the Company, and can work together for the sustainable development of UMC.

Labor Pension System

In terms of labor pension system, UMC allocates the worker's retirement reserve funds to the Labor Pension Reserve Supervisory Committees in compliance with regulations, and processes the employee labor pension payment in accordance with the Labor Standards Law. Since July 1, 2005, for employees who opt for the retirement system under the Labor Pension Act, 6% of their monthly salary is paid into their individual labor pension account to secure their rights and interests.

Major Contracts

Supply and Marketing

The Company has signed sales and service contracts with the following companies to grasp the current situation of

the global market. In addition, UMC maintains a long-term business relationship with major wafer material suppliers. The main supply and sales contracts are as follows:

Contract Type	Contracted Party	Contract Period	Key Content	Restrictive Clause
Sales	UMC Group (USA)	Jan. 1, 2019~Dec. 31, 2024	Sales and related service for semiconductor products	None
Service	United Microelectronics (Europe) B.V.	Jan. 1, 2018~Dec. 31, 2022	Marketing support service for semiconductor products	None
Sales	UMC Group Japan Co., Ltd.	Jan. 1, 2018~Dec. 31, 2022	Sales and related service for semiconductor products	None
Service	UMC Korea Co., Ltd.	Jan. 1, 2019~Dec. 31, 2019	Marketing support service for semiconductor products	None
Purchase	Shin-Etsu Handotai Taiwan Co., Ltd.	Indefinite	wafer material supply	None

Patent and Technology License

UMC values and protects intellectual property rights. With nearly 40 years dedication in earning semiconductor patents, UMC has achieved a predominant position in the semiconductor industry. UMC also enters into patent or technology licensing contracts with major semiconductor or

technology patent holders to ensure that UMC's customers are not subject to the risk of wafer process infringement. The following are patent licensing contracts received and given by UMC:

Contract Type	Contracted Party	Contract Period	Key Content	Restrictive Clause
Patent Cross-license	International Business Machines Corporation	Jun. 25, 2009~Jun. 30, 2029	Patent cross-licensing for semiconductor process, semiconductor device and semiconductor design.	None
Technology License	International Business Machines Corporation	From Jun. 29, 2012	IBM licensed its 20nm CMOS and FinFET technology to UMC.	None
Patent License	Conversant Intellectual Property Management Inc. & Conversant IP (Taiwan) Inc.	Feb. 8, 2018~Dec. 31, 2021	Patent license for semiconductor process.	None
Patent Cross-license	International Business Machines Corporation	Jun. 13, 2013~Dec. 30, 2035	Patent cross-license for semiconductor process, semiconductor device and semiconductor design.	None
Technology License	HeJian Technology (Suzhou) Co., Ltd.	Jul. 11, 2013~Jul. 10, 2028	UMC licensed its 0.13um process technology to HeJian Technology (Suzhou) Co., Ltd.	UMC signed and implemented the contract in accordance with the scope approved by the Investment Commission, Ministry of Economic Affairs.
Technology License	Mie Fujitsu Semiconductor Limited	From Aug. 29, 2014	UMC licensed its 40nm process technology to Mie Fujitsu Semiconductor Limited.	None

Major Contracts (Continue)

Contract Type	Contracted Party	Contract Period	Key Content	Restrictive Clause
Patent Cross-license	Avago Technologies General IP Pte. Ltd.	Sep. 29, 2019~Dec. 31, 2023	Patent cross-license for semiconductor component related patents.	None
Patent License	NXP B.V.	Sep. 30, 2015~Sep. 29, 2020	Patent license and assignment of right for patent application.	None
Patent Cross-license	Katana Silicon Technologies, LLC	From Nov. 05, 2019	Cross license for specific patents.	None
Technology License	United Semiconductor (Xiamen) Co., Ltd.	Dec. 1, 2015~Dec. 31, 2019	UMC licensed its 55/40nm process technology to United Semiconductor (Xiamen) Co., Ltd.	UMC signed and implemented the contract in accordance with the scope approved by the Investment Commission, Ministry of Economic Affairs.
Technology License	United Semiconductor (Xiamen) Co., Ltd.	Apr. 1, 2017~Mar. 31, 2022	UMC licensed its 28nm process technology to United Semiconductor (Xiamen) Co., Ltd.	UMC signed and implemented the contract in accordance with the scope approved by the Investment Commission, Ministry of Economic Affairs.
Technology License	United Semiconductor (Xiamen) Co., Ltd.	Nov. 23, 2018~Nov. 22, 2028	UMC licensed its 80/90nm process technology to United Semiconductor (Xiamen) Co., Ltd.	UMC signed and implemented the contract in accordance with the scope approved by the Investment Commission, Ministry of Economic Affairs.

Technology Collaboration

Contract Type	Contracted Party	Contract Period	Key Content	Restrictive Clause
Technology Development	Fujian Jinhua Integrated Circuit, Co., Ltd.	May 13, 2016~May 12, 2021	Collaborative development of DRAM process technology	None

Construction

Contract Type	Contracted Party	Contract Date	Key Content	Restrictive Clause
Construction	Nomura Micro Science Engineering Co., Ltd., Wholetech System Hitech Limited, Sumitronics Taiwan Co., Ltd., K. J. Filtration Technologies Ltd., Organo Technology Co., Ltd., and Taiyo Nippon Sanso Engineering Taiwan Co., Ltd. and others.	From Jan. 2019	For building the facilities of Fab 12A in the Tainan Science Park, UMC signed construction contracts with the vendors listed in the second column. The total contracted amount exceeded NT\$1.4 billion.	None
Construction	Anhui 3S Mechanical and Electrical Engineering Co. Ltd., Nova Technology Corp., L&K Engineering (Suzhou) Co., Ltd., Shanghai Hantech Co. Ltd., Wholetech Group (Shanghai) Trading Co. Ltd. and others.	From Jan. 2019	United Semiconductor (Xiamen) Co., Ltd. entered into construction contracts with the vendors listed in the second column for building fab facilities. The total contracted amount exceeded US\$3.12 million.	None

Review of Financial Position, Operating Results, Risk Management

- 141 Financial Position
- 142 Financial Performance
- 143 Cash Flow
- 143 Major Capital Expenditures from Recent Years and Impact on Company's Finance and Business
- 143 Main Reasons and Improvement Plans for Recent Annual Reinvestment Policies and Profit or Loss, and Investment Plans for the Coming Year
- 144 Risk Management and Evaluation
- 153 Other Necessary Supplements

Financial Position

In Thousand NTD

	2019	2018	Differences	Differences (%)
Current assets	153,757,141	141,193,432	12,563,709	9
Property, plant and equipment	150,374,096	172,846,595	(22,472,499)	(13)
Intangible assets	5,198,247	2,991,804	2,206,443	74
Other assets	60,857,881	47,573,075	13,284,806	28
Total assets	370,187,365	364,604,906	5,582,459	2
Current liabilities	72,714,322	49,899,337	22,814,985	46
Non-current liabilities	90,258,621	108,169,078	(17,910,457)	(17)
Total liabilities	162,972,943	158,068,415	4,904,528	3
Capital	117,575,798	124,243,187	(6,667,389)	(5)
Additional paid-in capital	39,550,394	40,399,363	(848,969)	(2)
Retained earnings	60,820,280	61,588,543	(768,263)	(1)
Total equity	207,214,422	206,536,491	677,931	0

Analysis of deviation of over 20% between 2019 and 2018:

1. Intangible assets:
Due to United Semiconductor Japan Co., Ltd. becoming a subsidiary of the Company this year.
2. Other assets:
Due to the Company adopting IFRS 16 this year and recognizing right-of-use assets.
3. Current liabilities:
Due to the increase in current portion of long-term liabilities.

Financial Performance

In Thousand NTD					
Items	Years	2019	2018	Differences	Differences (%)
Operating revenues		148,201,641	151,252,571	(3,050,930)	(2)
Operating costs		(126,886,669)	(128,412,544)	1,525,875	(1)
Gross profit		21,314,972	22,840,027	(1,525,055)	(7)
Operating expenses		(21,807,284)	(22,159,679)	352,395	(2)
Net other operating income and expenses		5,182,162	5,116,884	65,278	1
Operating income		4,689,850	5,797,232	(1,107,382)	(19)
Non-operating income and expenses		1,045,787	(3,612,833)	4,658,620	(129)
Income from continuing operations before income tax		5,735,637	2,184,399	3,551,238	163
Income tax benefit (expense)		393,130	458,653	(65,523)	(14)
Net income		6,128,767	2,643,052	3,485,715	132

Analysis of deviation of over 20% between 2019 and 2018:

1. Non-operating income and expenses

Due to an increase in net gain of financial assets and liabilities at fair value through profit or loss and share of profit of associates and joint ventures.

2. Income from continuing operations before income tax

Due to an increase in net gain of financial assets and liabilities at fair value through profit or loss caused by stock market volatility and an increase in share of profit of associates and joint ventures.

Cash Flow

Analysis of Cash Flow for the Year Ended December 31, 2019

In Thousand NTD

Cash at Beginning of Year	Net Cash Flow from Operating Activities	Net Cash Flow from Investing and Financing Activities	Cash at End of Year	Remedial Measures for Cash Flow Shortfalls	
				Investment Plans	Financing Plans
83,661,739	54,904,148	(43,073,410)	95,492,477	-	-

Note: Net cash flow from investing and financing activities includes the effect of exchange rate changes of NT\$(1,524,847).

Analysis of Cash Flow

1. Operating activities:

Net cash flow from operating activities is mainly from adding back depreciation expense to net income.

2. Investing activities:

Net cash flow from investing activities is mainly from acquisition of subsidiary, acquisition of property, plant and equipment and acquisition of intangible assets.

3. Financing activities:

Net cash flow from financing activities is mainly from repayments of long-term and short-term loans and bonds, distribution of cash dividends and acquisition of treasury stock, which are partially offset by borrowing long-term loans.

4. Remedial measures for cash flow shortfalls:

Not applicable.

Analysis of Cash Flow in the Coming Year

In Thousand NTD

Cash at Beginning of Year	Estimated Net Cash Flow from Operating Activities	Estimated Net Cash Flow from Investing and Financing Activities	Estimated Cash at End of Year	Estimated Remedial Measures for Cash Flow Shortfalls	
				Investment Plans	Financing Plans
95,492,477	55,581,978	(58,396,603)	92,677,852	-	-

Major Capital Expenditures from Recent Years and Impact on Company's Finance and Business

Execution Status of Major Capital Expenditures and Sources of Funding

In Thousand NTD

Operating Segment	Project	Actual and Expected Sources of Funding	Completion Status (Up To 2019)	Total Amount (Up To 2019)	Capital Expenditures Plan	
					2019	2018
Wafer Fabrication	Production Equipment	Cash flows generated from operations, bank loans and issuance of bonds	Completed	34,225,028	15,874,483	18,350,545
	R&D Equipment	Cash flows generated from operations, bank loans and issuance of bonds	Completed	3,106,514	1,867,289	1,239,225
New Business	Production and R&D Equipment	Cash flows generated from operations and bank loans	Completed	18,993	18,688	305

Expected Benefit from Capital Expenditures

Based on aforementioned capital expenditures, in 2019 the ratio of production capacity from high-end processes of 40nm or below is above 30%, of which the production capacity for high-end 28nm or below has grown by 11% from the previous year.

Main Reasons and Improvement Plans for Recent Annual Reinvestment Policies and Profit or Loss, and Investment Plans for the Coming Year

China's domestic market demand for semiconductors now ranks No. 1 in the world, and the Chinese government has recently adopted a multi-pronged approach to support its semiconductor industry. To be more aligned with the market and better meet the needs of IC design companies in China, UMC and its subsidiaries have invested about USD 1.35 billion into United Semiconductor (Xiamen) Co., Ltd. over a period of five years since 2015 in accordance with the projected plan. As of December 31, 2019, a total capital of USD 1.22 billion has been invested into the Company's Xiamen 12-inch fab for 28-90nm wafer service to pursue

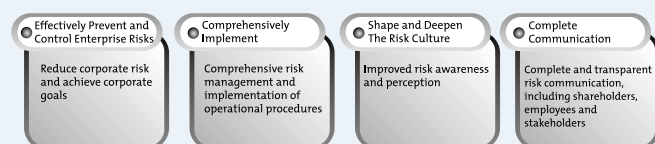
further growth of the Company. The Company mitigates risk by building capacity in different countries and also increases its operation efficiency. The Company completed the acquisition of Mie Fujitsu Semiconductor Limited on October 1, 2019 to closely serve the Japanese market. By doing so, the Company attributes its capacity to different production sites and effectively penetrates into Japanese niche markets (automotive and IoT). Moreover, the acquisition can help to elevate the Group's operational efficiency.

UMC's investment policies are based on long-term strategic investments to match the Company's operations and development.

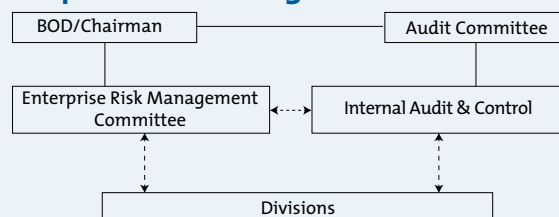
Risk Management and Evaluation

Enterprise Risk Management Policies

Through risk management methods and organizations, UMC effectively prevents and controls enterprise risks; comprehensively implements them in daily operations; shapes and deepens risk culture; and establishes transparent and smooth risk communication to maintain steady operations.



Enterprise Risk Management Architecture



Under the guidance of the risk management policy, the Enterprise Risk Management Committee coordinates relevant departments of the Company to jointly review the internal and external risks that the Company faces, facilitates risk response measures for company-wide major risks, and reports regularly to the board of directors. It also incorporates internal audit and internal control functions to ensure that the risks associated with operations have been effectively controlled.

Risk event impacts and measures include important risks related to environmental, social or corporate governance issues of the company's operations.

Future R&D Projects and the Estimated R&D Expenses

Estimated annual R&D expenses for the next three years

Item/Year	2020	2021	2022
R&D expenses	Not applicable	Not applicable	Not applicable
Operating revenue	Not applicable	Not applicable	Not applicable
(undisclosed financial forecast of the Company)			
The share of R&D expenses to operating revenue	7% to 10%	7% to 10%	7% to 10%

Major R&D Projects in the Future

Latest Annual Project	Current Progress	R&D Expenses Which Should Be Invested for the Next Two Years	Time of Mass Production	Key Success Factors for Future R&D
22nm process technology	22nm ultra-low power/ultra-low leakage technology development by securing strategic customers, determining device specifications and starting new process technology development. The process development is expected to be completed with customer product pilot production starting in 2020.	NTD 900 million	2020	Customer circuit design verification and product yield have been qualified to mass production standards.
28nm HPC+ image signal processor technology	Relevant process development and verification should be conducted according to the project schedule of 28nm HPC+ image signal processor.	NTD 400 million	2021	Customer circuit design verification and product yield have been qualified to mass production standards.
14nm process technology	UMC finished 14nm FinFET process platform development and also passed process & product qualification. Currently passed customer product assessment and will enter risk production by 2020.	NTD 1.4 billion	2020	The lead customer has verified UMC's 14nm FinFET process platform for production.
Embedded magneto-resistive memory	Relevant process development and verification should be conducted according to the development project schedule for embedded magneto-resistive memory.	NTD 1.2 billion	2021	Customer's circuit design verification and product yield have been qualified to mass production standards.
Special technology R&D	Development and verification of 90/55/40/28/22nm specialty technology platform (including HV, CIS, eFlash, RFSOI, etc.)	NTD 1.7 billion	2021	<ul style="list-style-type: none"> Cooperating with customers to create a win-win situation. Completing IP verification on time. Quality verification is in compliance with customer requirements.

Note: The R&D expenses for the next three years will account for around 60% to 75% of the total annual R&D expenses.

Risk Management and Evaluation (Continue)

In 2019, UMC has been constantly strengthening its independent R&D capabilities and fabrication; in the future, UMC will continue to be dedicated to the R&D of advanced and specialty processes. The Company will adhere to its R&D strategy to establish independent R&D capabilities and will work with important partners, such as IDMs and Fables, to develop key process technologies through technology licensing. UMC will also work with suppliers of photomask, packaging, equipment, material, and EDA to speed up the market launch schedule in order to fulfill the Company's promise to provide customers with R&D of key processes.

In terms of independent R&D capabilities, UMC's focus is on recruitment and cultivation of R&D talent in order to build an outstanding R&D team. The 12-inch R&D production line will continue to be expanded in the R&D Center located in Tainan Science Park with sufficient funds for enriching the overall R&D resources. In 2019, UMC's R&D led to fruitful achievement. Mass production optimization has been ongoing for 28nm. The development of a 22nm ultra-low power/ultra-low leakage shrink process technology can be provided as a planar process technology solution with lower cost and better cost efficiency for customers. UMC is offering a 22ULP (ultra Low Power) version that has compatible design rules and the same mask count as the foundry's 28nm technology, and also a 22ULL (ultra Low Leakage) version. UMC's 22ULP and 22ULL form a super set to support a voltage domain from 1.0V to 0.6V, allowing customers to enjoy the benefits of both technologies on system-on-chip (SoC) designs. The 22nm platform is supported by foundation IP and is ideal for a wide variety of semiconductor applications including consumer ICs for set top box, digital TV, surveillance, power or leakage sensitive IoT chips (with Bluetooth or WiFi) and wearable products that require longer battery life.

In terms of 14nm process technology, UMC finished 14nm FFC platform development and pass process qualification, which has entered the customer chip mass production stage. UMC's R&D team will continue with the optimization of 14nm to take the full advantages of the performance, power consumption, and gate density of 14nm FinFET in order to drive next generation Internet, AI, and consumer product applications. For embedded magneto-resistive memory, this year's scheduled development milestone was completed with high test chip yields. UMC will provide the embedded MRAM macro IP for potential customers on the Company's 22ULL platform next year. For specialty technologies, UMC has launched the development of "More than Moore" processes and successfully provided comprehensive solutions such as ultra-low power platform (ULP), CMOS image sensor (CIS), MEMS, eFlash, embedded high voltage (eHV), power management IC (PMIC), and RFSOI.

In order to control the technology and development schedule to fulfill the promise of customer market launch, UMC will continue with the independent R&D strategy, adhere to a customer-first philosophy and integrate

external R&D resources. The Company will also accelerate R&D, expand production capacity and enhance revenue mix of key processes so that higher profits can be created in order to respond to the challenges resulting from constant technology evolution.

The Impacts of Interest Rates, Foreign Exchange Rates and Inflation on Corporate Profitability and Future Countermeasures

Interest Rate Fluctuation

The bank loans of the Company are floating rate debts. Therefore, changes in market interest rates will result in fluctuations in future cash flows. Based on the bank loans as of December 31, 2019, if the interest rate increases/decreases by 10 basis points, the Company's net profit for 2019 will decrease/increase by NTD 45,917 thousand. In order to reduce interest rate risk, the Company continues to monitor changes in market interest rates. Besides bank loans, the Company also utilizes various financing instruments. To support operating needs, the Company will take advantage of long-term debts with favorable fixed rates depending on market conditions.

Foreign Exchange Rate Fluctuation

The Company's exposure to the risk of changes in foreign exchange rates relates primarily to the Company's operating activities (when revenue or expense is denominated in a different currency from the Company's functional currency) and the Company's net investments in foreign subsidiaries. Based on the assets and liabilities of risk-avoiding management denominated in foreign currencies as of December 31, 2019, when the NT dollar strengthens/weakens by 10 percent against the US dollar, the Company's net profit for 2019 will decrease/ increase by NTD 1,009,197 thousand. On the other hand, when the Chinese Yuan strengthens/weakens by 10 percent against the US dollar, the Company's net profit for 2019 will increase/decrease by NTD 2,200,266 thousand.

The Company applies natural hedges on the foreign currency risk arising from purchases or sales denominated in foreign currencies, which means balancing the assets and liabilities denominated in foreign currencies to reduce the impact from fluctuation in foreign exchange rates. The Company may use derivatives, such as currency forward contracts, to partially hedge foreign currency risks associated with certain highly probable forecast transactions. These hedges will offset only a portion of, but do not eliminate, the financial impact from changes in foreign exchange rates. Furthermore, as net investments in foreign subsidiaries are for strategic purposes, they are not hedged by the Company. The Company continues to monitor the changes in foreign exchange rates in order to respond promptly to any significant fluctuation.

Risk Management and Evaluation (Continue)

Inflation

The inflation status in 2019: Due to lower-than-expected international oil prices and prices of raw materials in the first half of 2019, the annual growth rate of the Taiwan Consumer Price Index (CPI) was below that of 2018. However, the average consumer price index (CPI) in Taiwan still grew by about 2.55%. Overall prices remain stable and there is no concern regarding inflation.

Policies for High-Risk and Highly Leveraged Investments, Lending, Endorsements, Guarantees for Other Parties, and Financial Derivatives Transactions, Main Reasons for Profit and Loss, and Future Countermeasures

The Company has not engaged in any transaction of high-risk or highly leveraged investments. Any financial derivatives transaction is to enhance the Company's operating performance and reduce operating and financial risks.

The Company has established its "Loan Procedure," "Endorsements and Guarantees Procedure," and "Financial Derivatives Transaction Procedure" in compliance with the relevant rules and regulations issued by Financial Supervisory Commission. These internal procedures serve as the basis for the Company to enter into transactions mentioned above. The Company has announced and reported these transactions, and also established a registration book in order to review these transactions regularly. If necessary, measures will be taken to control financial risks.

Impact and Corresponding Measures of Major Domestic and International Policy and Legal Changes on UMC's Finances and Business

UMC complies with national policies and laws. The Company's relevant divisions keep abreast of major policy and legal changes at all times. UMC adjusts its internal systems and business activities accordingly to ensure the smooth operation of the Company.

Impact on the Company's Financial Results and Corresponding Contingency Plans in Response to Changes in Technology and the Industry

The Company places significant importance on the dynamics of the semiconductor industry and continues to invest and develop semiconductor manufacturing process technology and know-how. In order to accelerate the development of logic and specialty technologies, optimize transistor performance, reduce power consumption,

and continuously enhance its technical advantages, UMC invested a total of NTD 11.86 billion in research and development in 2019. At the same time, the Company is also actively working with external academic and government institutions to develop new process technologies for next generation product applications to diversify the Company's process technology offerings. The Company invested approximately USD 574 million in capital expenditure during 2019. UMC will continue to invest in existing logic and specialty technologies, expanding 8" and 12" capacity to penetrate emerging applications and driving internal operational efficiencies. The Company believes that these efforts will create higher customer adoption of its logic and specialty technologies and expand UMC's market share to fuel growth. UMC will strive to enhance its operations and preserve the best interests of its shareholders.

The Impact of Corporate Image Change on Corporate Crisis Management and Response Measures

The Company's business philosophy is based on the Company's sustainable operation and long-term partnership with customers and social groups. The Company regularly holds shareholders' meetings and legal person briefings to increase financial transparency. The Company also actively participates in community and public welfare activities, and effectively fulfills its responsibility as a member of society. For a variety of different emergencies, there are special personnel responsible for planning and responding to minimize the uncertainty of business operations.

Expected Benefits, Possible Risks and Response Measures for Mergers and Acquisitions

With UMC's customers located all over the world and given the Company's business philosophy of continuously improving the service quality to its customers, UMC understands the importance of satisfying customer needs and providing local services. At the same time, UMC also recognizes that with expansion through mergers and acquisitions, the Company can take advantage of the increased economies of scale and operational efficiency. Based on this concept, UMC's Board of Directors approved the acquisition of the entire share capital of Mie Fujitsu Semiconductor Limited in June, 2018. The transaction was completed on October 1, 2019 and it was renamed as UNITED SEMICONDUCTOR JAPAN CO., LTD. upon completion of the acquisition. The acquired company is UMC's production base in Japan for 12-inch wafer services. In addition, UMC will also continue to invest in United Semiconductor (Xiamen) Co., Ltd. to provide 12-inch wafer services in China. UMC's global operational capabilities can be strengthened, and

Risk Management and Evaluation (Continue)

customers are given more competitive foundry solutions. On the other hand, UMC's overall value can be increased and shareholder interests can be enhanced.

The main risk of cross-border merger and acquisition involves integration and compliance with the regulations and compliance of various countries. To comply with the regulations of related authorities for equity purchase or merger and acquisition, UMC conducts careful planning and consultation with professionals from the respective countries. The goal is to not only complete equity purchases or mergers, but also to strategically plan to sustain future business and maximize shareholders' interest.

Risk of Excess Capacity from Fluctuating Economic Conditions

The Company increases its production capabilities through fab expansion in order to accommodate more customer orders, thus providing the means to increase revenue, profits and market share. When production capacity reaches economies of scale, manufacturing costs can be dramatically reduced. However, the significant potential for fluctuations in the semiconductor industry economic cycle creates financial risk, as any excess capacity still must be accounted for under depreciation of plants and equipment during demand softening caused by economic conditions. This risk would be considered a burden to the Company.

The Company's capacity expansion is under deliberate capital expenditure plans, which focus on satisfying customers' needs while optimizing capital utilization. Disciplined capital expenditure can help to develop a healthy industry environment.

The Company has set forth the Capital Budget Committee from 2013, which comprises of members from the Company's Independent directors and non-executive directors. The Committee's goal includes review of the Company's capital expenditure budget, with the intent to strengthen long-term corporate strategy, financial planning and business performance.

Risk and Response Measures to Procurement Concentration

Risk of material shortage: for example, insufficient production capacity, accidents in the fab, or natural disaster could result in material shortage.

Risk avoidance approach: currently, UMC adopts a supplier self-management mode, in that these materials are stored in the Company's and suppliers' warehouses near UMC fabs. The safety inventory level is increased to meet emergency demand and to shorten the emergency response time in order to effectively reduce material shortage risk, and the Company's operation regulations are formulated

according to the four subjects of "Risk Assessment Operation," "Operational Impact Analysis Operation," "Accident Response and Operation Sustainability Plan" and "Emergency Material Procurement Operation."

In addition, UMC has established alternative suppliers and regularly implements evaluations of supplier capabilities, flexibilities and natural disaster risk mechanisms that correspond to the production site. Currently, there are no high risk incidents. In case of emergency, the emergency response mechanism will be activated, and it will be managed according to the "Accident Response and Operation Sustainability Plan" and "Emergency Material Procurement Operation."

Risks of Sales Concentration and Response Measures

UMC has established long-term steady cooperation with multiple world-class customers, and the long-term steady growth of the Company can be ensured by combining the competitive edges of UMC and these customers. In 2019, the total sales revenues of UMC's top 10 customers accounted for approximately 51% of UMC's total sales revenues. UMC will continue to closely cooperate with customers who require advanced and specialty processes, and provide customized solutions for specific products and applications. UMC will continue to provide comprehensive customer oriented pure-play wafer foundry solutions in order to expand its customer base and improve product mix. The Company will further enhance the flexibility of production capacity allocation to reduce the impact of periodic demand fluctuations with the goal of mitigating risk.

Risk of Change of Control and Stock Price Fluctuation from Large Scale Transfer of Shares

If the Company's directors or major shareholders holding more than 10% of issued and outstanding shares transfer a significant portion of their shareholding in the Company, then a change of control may occur. Furthermore, such transfer may give rise to investors' concerns on the operation of the Company and may cause the market price of the Company's shares to fluctuate.

The share withholding status of the Company's directors and managers have been reported based on official regulations and laws. Meanwhile, there has been no significant share transfer activity.

Risk Management and Evaluation (Continue)

Risk of the Company Losing One or More Key Personnel without Adequate Replacement Due to any Change of Company Control

UMC's future success depends to a large extent on the continued service of the Company's chairman and key executive officers. If the chairman or key executive officers leave their positions as a result of a change in Company control, and qualified replacement personnel cannot be found and integrated in a short period of time, operations may be adversely affected.

The Company's management focuses its operations with the intent to maximize value for its shareholders, thus gaining their trust and recognition. If there were a replacement of management, the succeeding personnel would have to recognize corporate culture, be qualified to assume professional duties, and be able to execute the Company's policy.

Litigation and Non-Litigation Incidents

On August 31, 2017, the Taichung District Prosecutors Office indicted UMC based on the Trade Secret Act of R.O.C., alleging that employees of UMC misappropriated the trade secrets of MICRON TECHNOLOGY, INC. ("MICRON"). On December 5, 2017, MICRON filed a civil action with similar cause against UMC with the United States District Court, Northern District of California. MICRON claimed entitlement to the actual damages, treble damages and relevant fees and requested the court to issue an order that enjoins UMC from using its trade secrets in question. UMC has appointed counsels to prepare answers against these charges. Currently the civil complaint has been stayed by the court and the criminal proceeding is ongoing.

On January 12, 2018, UMC filed three patent infringement actions with the Fuzhou Intermediate People's Court against, among others, MICRON (XI'AN) CO., LTD. and MICRON (SHANGHAI) TRADING CO., LTD., requesting the court to order the defendants to stop manufacturing, processing, importing, selling, and committing to sell the products deploying the infringing patents in questions, and also to destroy all inventories and related molds and tools. On July 3, 2018, the Fuzhou Intermediate People's Court granted preliminary injunction against the aforementioned two defendants, holding that the two defendants must immediately cease to manufacture, sell, and import products that infringe the patent rights of UMC. The court has approved withdrawal of one of the patent infringement actions on our motion while the other two actions are still on trial.

On November 1, 2018, the Department of Justice of the United States ("DOJ") unsealed an indictment against UMC, FUJIAN JINHUA INTEGRATED CIRCUIT CO., LTD. ("JINHUA"), and three individuals, including one current employee and two

former employees of UMC, alleging that UMC and others conspired to steal trade secrets of MICRON, and used that information to develop technology that was subsequently transferred to JINHUA. On the same day, the DOJ filed a civil complaint enjoining the aforementioned defendants from exporting to the United States any products containing DRAM manufactured by UMC or JINHUA and preventing the defendants from transferring the trade secrets to anyone else. UMC has appointed counsels to prepare answers against these charges. Besides, UMC has suspended the joint technology development activities with JINHUA. Currently the civil complaint has been stayed by the court and the criminal proceeding is ongoing. Given these litigations are still in the preliminary stages, UMC cannot assess the legal proceeding and probable outcome or impact.

On March 14, 2019, a putative class action styled Meyer v. United Microelectronics Corporation and several executives, was filed under Securities Exchange Act of 1934 and Rule 10b-5 in the United States District Court for the Southern District of New York. The court appointed a lead plaintiff and approved lead plaintiff counsels on May 23, 2019. On September 27, 2019, UMC received the service of plaintiffs' amended complaint and appointed counsels to prepare the relevant procedures. Currently the mediation process is ongoing. The Company does not expect material financial impact resulting from this claim.

Risks Relevant to Intellectual Property

UMC values technology development and respects intellectual property rights, hence UMC develops independently to acquire intellectual property rights actively and devotes itself to protecting its and its business partners' intellectual property rights. Although UMC dedicates itself to enforcing and protecting intellectual property rights, it cannot completely prevent its intellectual property rights which strongly related to UMC's business, such as process, technology, software, trade secrets, or know-how from being infringed or misused by third parties. In addition, responsibilities for some of the infringements of intellectual property rights are strict liability and require no finding of mens rea or intent, so when UMC independently develops the process, technology, software, trade secrets or know-how required to engage in business, it may infringe on third parties' intellectual property rights unknowingly. Therefore, UMC may need to obtain technology or patent licenses from third parties on reasonable terms. However, if UMC cannot obtain the technology or licenses on reasonable terms, it may be accused of intellectual property infringement by third parties or even receive an injunction granted by the court on third parties' motion for injunctive relief, thereby jeopardizing UMC's abilities to perform business contracts and eventually leading to breach of contracts.

Risk Management and Evaluation (Continue)

UMC's ability to compete also depends on its ability to operate without infringing on third parties' intellectual property rights. As is the case for many companies in the semiconductor industry, UMC from time to time receives letters from third parties asserting and alleging infringement of some intellectual property rights of their technology. Due to the rising of active Non-Practicing Entity (NPE), UMC expects to receive similar letters in the future. Irrespective of the validity or the successful assertion of such claims, UMC could incur significant costs and management resources for defending these claims, which in turn could seriously impair UMC's business and operation.

In order to minimize the liabilities arising from third parties' claims alleging UMC's manufacturing of semiconductor devices or designs of UMC's customers' end products infringe on third parties' intellectual property rights, generally, UMC accepts orders only from companies with satisfactory reputation and for products without potential infringement risks. Furthermore, UMC also obtains indemnification rights from customers and equipment vendors to hold UMC harmless from any damages resulting from any suits or proceedings brought against UMC alleging UMC infringes third parties' intellectual property rights by manufacturing products for customers or using equipment supplied by vendors.

Risk of Climate Change

The Risk of Climate Change May Negatively Affect UMC's Business Operation

UMC actively focuses on the new business operational concern of climate change. UMC has developed the UMC Climate Change Risk Assessment methodology based on the Fifth Assessment Report (AR5), which is published by the Intergovernmental Panel on Climate Change (IPCC), and the government's downscaling scenario projection for identifying potential physical hazards under climate change situation, and the ISO 14090: Adaptation to Climate Change and the assessment procedure in the UK Climate Impact Programme (UKCIP). The assessment concluded that UMC's top 3 climate change risks in the most recent 5 years were "electricity price rising and imposition of carbon tax caused by energy policy," "a dramatic rise in green investment" and "super typhoon influences on water supply continuity." The inevitable global carbon risk will not only bring rising manufacturing and transportation costs due to increased prices for petroleum and electricity, but will also directly impact the economy and the operation of enterprises from the perspectives of energy tax, carbon tax, border carbon tariff, and stringent environmental laws and regulations, and lead to additional investment costs. UMC has actively implemented measures in response to mitigate the impact caused by climate change. For example, to reduce the emissions from fluorinated greenhouse gases used in wafer foundries, UMC was the first in the industry to complete a

two-phase fluorinated greenhouse gases replacement plan for all its fabs (by replacing C₂F₆ with C₃F₈ and C₃F₈ with C₄F₈) in order to greatly reduce greenhouse gas emission and the impact of global warming. In the meantime, UMC supported the EPA early reduction project and acquired a carbon reduction allowance, thus successfully turning risk into competitiveness. Facing the issues of global climate change and the management of energy and greenhouse gases, in recent years UMC has been actively drafting environmental protection objectives through various stages and aspects and developed specific implementation plans for gradual promotion.

Disaster Risk Management

As a leader in the semiconductor fabrication industry, UMC is fully aware of the impacts of natural disasters and man-made accidents on production and operation. Therefore, UMC has always faced disaster risk management with an active attitude of prevention management, and pursues the highest safety standards within the semiconductor industry through stringent risk engineering control and implementation management of safety regulations and standards.

Fire Safety

UMC has applied international standards, such as Factory Mutual (FM) Insurance Company, Underwriters Laboratories Inc. (UL), National Fire Protection Association (NFPA), and Semiconductor Equipment and Materials International (SEMI) to building structure, equipment, and risk engineering control and assessment, and the company regulations have been formulated to serve as definite requirements. UMC is also the only company in the semiconductor industry with its own fire brigade. In addition to being equipped with professional fire engines and fire rescue equipment, the fire brigade normally conducts professional training to teach emergency response capabilities to employees, while having the ability to respond on-site in case of disaster.

Protection Against Natural Disaster

UMC has actively planned and established a complete and sound disaster risk management response procedure. It has worked with world-renowned structure consultation companies specialized in responding to earthquake disaster, such as EQE (EQE International Inc.) and JENSEN HUGHES to include seismic safety of buildings, factory facilities, pipelines, and production machines into the design criteria at the preliminary stage of fab construction. There are plans for continuous improvement of older fabs built prior to 1999. In February 2016, an earthquake of Richter scale magnitude 6.6 took place in southern Taiwan, registering close to 6 at UMC's Fab 12A in Tainan Science Park. However, hardware loss was rather moderate compared to other companies in the industry, which was an indication of the effectiveness of UMC's seismic design. In addition, UMC has

Risk Management and Evaluation (Continue)

continued to introduce new seismic protection technologies, including anti-earthquake damper for buildings and seismic isolation platforms for reticle stoker and furnace and the establishment of an onsite earthquake early warning system for further enhancement of personal safety and reduction of risks associated with losses of machine and equipment due to earthquake.

Responses to Climate Change Risk

UMC has always cared about the possible impacts from extreme weather. The Company has completed flood potential simulations for fabs in Taiwan since 2014, and conducted hardware improvement to strengthen the flood control capacity of Fab 12A. UMC was also the first in this industry to develop an early warning system to detect water shortage that is integrated with quarterly long-term weather forecast data to provide the prediction of water conditions in the coming three months so that water saving measures can be conducted, and water truck contract and rehearsals can be prepared in advance to reduce any risk to operations. Furthermore, UMC climate change risk and opportunity assessment was accomplished by referring to the fifth assessment report published by the intergovernmental panel on climate change (IPCC AR5) and the assessment procedure in the UK Climate Impact Programme (UKCIP) in 2019, and related results will be disclosed to stakeholders in the CSR report during the following year.

Safety Protection of Process Equipment

Safety, Health, and Environmental Protection Standards of Semiconductor Manufacturing Equipment (SEMI S2) is the primary international standard for UMC to establish the mechanism for review of new machines and company regulations. The “UMC Process Equipment ESH Procurement Specifications” has been introduced at the procurement stage. The safety of machines can be under effective control with the machine specifications compliance review before machines are moved in and machine installation inspection after they are moved in.

International Risk Rating (Triple-Star Rating System)

UMC introduced the Triple-Star Rating System in 1998, and the Company has since invited international insurance company AIG (American International Group) to conduct risk audits so that UMC could continuously enhance fab protection level in order to be in compliance with international standards and to maintain the commitment level of Highly Protected Risk (HPR) for our customers and the insurance market. Aside from some items in older fabs, the ratings of all other fabs are maintained at the highest level.

Business Continuity Management (BCM)

UMC recognizes that pursuing the sustainable operation of its organization actually means providing strategic customers and important stakeholders with continuous services. Therefore, the highest mission of the Company is to provide customers with diversified, high quality, and uninterrupted wafer foundry services.

In 2013, UMC was the first in the industry to be granted the ISO22301 Business Continuity Management System Certificate issued by SGS Taiwan Ltd., for both its Hsinchu HQ and Fab 12A. In 2016, Fab 12i in Singapore was granted ISO22301 Business Continuity Management System Certificate after only its first evaluation. In 2019, Hsinchu HQ, Tainan Fab 12A, and Singapore Fab 12i passed the 3-year review cycle by BSI (British Standard Institution) to extend the validity of certification.

Under such operation and maintenance mechanism, UMC will continue to review, refine, and ensure the maintenance and recovery of the highest operational objectives upon occurrence of disaster or impact in order to protect the rights and interests of customers and stakeholders.

Business Continuity Policies

- The highest purpose of the Company’s sustainable operation and management is to provide customers with diversified, high quality, and uninterrupted wafer foundry services while continuously pursuing partnerships with its customers.
- UMC will implement the operation of the business continuity management organization and conduct business impact analysis and risk assessment when the business environment changes, so that sustainable operation strategies and objectives can be formulated and secure resources can be obtained for such implementation with continuous review and refinement.
- In case of disaster or impact, UMC will invest sufficient resources according to its business continuity strategies in order to maintain and restore optimal operations. The Company will keep good communication with, fight for and protect the rights and interests of its customers and stakeholders.

Enterprise Information Security Risk Management

Risk Management Organization

In 2018, UMC established the “Enterprise Risk Management Committee” to collaborate with key organizations in the Company’s risk management and control to jointly examine and manage internal and external risks, and prioritize risk response strategies for major risk issues across the Company. It is combined with internal audit functions to

Risk Management and Evaluation (Continue)

ensure that the operational risks associated with operations are properly managed. In the same year, UMC established the “Corporate Security Division” responsible for the Company’s information security and physical security planning and related audit matters, which works together with the “Information Technology Division” to further strengthen information security.

Information Security Policy

UMC’s information security policy is based on the guiding principle: “To establish Information Security Management rules in accordance to customer requirements, to reach a consensus that information security is everyone’s responsibility through full awareness, to protect information Confidentiality, Integrity, Availability for the Company and Customer, and to provide a safe production environment to ensure sustainable operation of the Company’s business.” The major information security objectives are aimed at antivirus, anti-intrusion and anti-leakage through the building of multiple internal controls such as firewall, intrusion detection and antivirus systems to enhance the Company’s ability to defend against external attacks. Also, with the support of top management and through regular education and training programs, security operation/awareness is tightly involved and seamlessly integrated into every employee’s daily work.

Establish Enterprise Risk Management System

The Enterprise Risk Management Committee integrates the identified various risk items, including strategy, operations, finance, disasters, etc., assesses the likelihood and severity of the occurrence, defines the priority order and risk level of the risk items, and takes response actions. The management plan periodically reviews the potential occurrence of risks and the potential for changes in severity over time to grasp the effectiveness of risk management plans and related control operations.

UMC complies with multiple ISO certification standards as a means of achieving risk-oriented management and inspection purposes in the areas of quality, environment, water resources, carbon footprint, green energy, etc. Related information security certifications include ISO15408, ISO22301 and ISO27001. The Company has also established corresponding risk management committees to promote standardization processes and reduce the risk to business operations. Please refer to the Company website for related certification information. http://www.umc.com/English/CSR/b_5.asp.

Assessment of Information Security and Cyber Risks

UMC puts particular emphasis on preventing Information security and cyber risks, and builds a complete multi-layer defense mechanism including firewall, intrusion detection, antivirus system, vulnerability scanning, patch

management procedure and penetration testing, etc. In 2019, we also leveraged an international professional security company’s resources to help on inspecting the robustness of overall security as a trusted third party verifier and a basis for further improvement. The summary of the annual information security assessment is as follows: “Overall, UMC has implemented an information security management system. According to this system and control measures, conventional malicious programs such as attacks by viruses, Trojans, worms and external hackers will not easily damage UMC’s information system.”

Information Security Management System

UMC is listed on NYSE and complies with the Sarbanes-Oxley Act (SOX 404) for internal key financial processes. The Company intends to strengthen information security by introducing ISO27001 information security management system certification, so that information systems can be operated under standard management procedures to reduce security risk and production anomalies that may be caused by human error. Continuous improvement of PDCA is then carried out through annual recertification.

In 2014, a cross-division security committee was established. Based on the need to produce secure products like smart card ICs, the Company decided to introduce ISO15408 (CC, Common Criteria) certification. The certification is specifically designed for secure production procedures not only in data receiving, processing and destroying but also higher physical access control request for securing entire production line purposes. Continuous improvement of PDCA is then carried out through biennial recertification.

The Arrangement of the Security Insurance

In view of recent reports about data leakage, virus infection and hacking events in Taiwan and the world, together with the ransomware incident of a peer semiconductor manufacturer’s information system in August 2018 which caused billions of NT dollars in operational disruption (BI, Business Interruption), the worldwide security threat has been drastically intensified. There is no guarantee that enterprises will not become the target of being attacked even if they already have good security protection in place. UMC’s strategy is to adopt cyber security insurance as a new option for partly transferring and mitigating the risk. This insurance has been in effect since Jan. 2019 with a retroactive option that can trace back stealth threats existing in the enterprise before the effective implementation date. Initial insurance amount is set to be \$10 million US and covers all UMC fabs in Taiwan and Singapore. In the future, they will be reviewed annually to protect the Company from potential losses in the event of a cyber attack.

Risk Management and Evaluation (Continue)

The Impact of Occurred Major Security Incidents and Corresponding Response Measures

UMC had a major WannaCry ransomware incident in 2016, causing 42 Servers/PCs/NBs used in the OA area to be infected and needing to be re-built. Fortunately, due to early detection and proper handling, it did not spread to production line computers. This is considered a relatively serious virus incident within recent years. In addition to immediately upgrading to a new version of antivirus software with behavior-based detection capability and implementing strict information device in/out management, the Company policy also requires that production line computers update critical patches to defend against such worm-type viruses that may attack system vulnerabilities. Another countermeasure is to set the Access Control List (ACL) in production line networks to grant necessary access between equipment tools, which can block viruses from spreading and limiting them to a small extent of impact. After the virus incident in August, SEMICON TAIWAN formed a task force that included UMC to co-study equipment information security standards and responsibly contribute as a local enterprise.

In short, the current security risks disclosed by UMC in this annual report should be supplemented with a famous quote from the information security industry: "There is no such thing as 100% security." While new attack techniques are constantly introduced, defense systems are faced with a zero-day attack limitation. Past defense achievements do not necessarily mean or guarantee that anomalies will not happen in the future.

Enterprises must keep pace with the times to face the ever-changing and growing information security threat. Information security has a long way to go and requires continuous improvement. UMC will uphold the values of "Customer-orientation, Integrity, Innovation, Accountability, Efficiency" as its corporate culture and will fulfill "due care/due diligence" management responsibility to provide customers with a secure production environment to reduce operational risk and reward shareholders with the highest possible investment value.

Tension in Political or Economic Relations between Major International Countries; The Impact on The Investment and Operation of The Company's Foundry Industry and Corresponding Measures

Internationally, due to political or economic tensions between major countries, national power has been exerted

to penalize specific entities or even trigger a trade war. The main methods include raising tariffs, embargoes, policy interventions, government subsidies, etc., which may have an impact on the company's investment and operations. It also affects revenue, delivery, and goodwill. For example, a sharp increase in tariffs in importing countries may drive up end-market prices, thereby reducing consumer purchase demand and further reducing UMC customer orders; The United States Export Control Act regulates that if those whose content originating from the United States exceeds a certain ratio, their products may not be exported to specific countries. This may affect UMC's direct or indirect supply to specific customers; restrictions on the export of high-tech materials may affect UMC's production, resulting in failure to deliver on time and damage to goodwill.

UMC's countermeasures include:

- 1) Increasing the diversification of customers' region and product application. Besides cautiously facing existing business in North America and the Asia Pacific, UMC also aggressively expands its business from other regions such as Europe and Japan. In response to business uncertainty for server, automotive and industrial applications that originally enjoyed high growth, UMC also tries to expand its opportunities in IoT, AI, etc.
- 2) Monitoring and evaluating the impact of external changes (including global regulations, politics, economic conditions, etc.) on the Company's business (raw materials, customer demand, etc.) and taking necessary risk response plans. In practice, a raw material supply chain tracking mechanism is established, and the legal compliance response system is strengthened. Through a more accurate grasp of the country's component ratio of raw materials, UMC can analyze the possible impacts and respond in a timely manner.

The Impact of Talent Retention and Training & Development on the Company's Operations and Corresponding Practices.

At UMC, employees are considered the most important asset and the foundation of sustainable operations. Facing external labor market competition and the attractiveness of salary conditions have caused staff turnover, so the failure to effectively maintain and extend experience has potential risks to the company's operations.

Regarding talent retention and training & development practices, UMC provides a comprehensive learning environment for employees to improve the skills and expertise of their colleagues. The Company focuses on "talent attraction, cultivation, and retention" as the key

Risk Management and Evaluation (Continue)

goals of training & development, while continuously improving the quality and effectiveness of training, cultivating talent to meet the needs of the organization, and ensuring the continuation of experience. Meanwhile, we also pay attention to external market salary information and provide competitive salary and welfare conditions to achieve the Company's sustainable operation goals.

Any Outbreak of Contagious Diseases, Such as the Recent Coronavirus Pandemic, may Materially and Adversely Affect our Staff Attendance and Operation, and its Countermeasures

Any outbreak of infectious diseases, such as coronavirus, Ebola virus, bird flu, swine flu, or severe acute respiratory syndrome (SARS), can affect staff attendance and even affect company operations. For example, the recent outbreak of the coronavirus pandemic is spreading globally and has an adverse effect on the world's economic conditions, which has impacted both the demand within the semiconductor market and the stability of the supply chain. If the epidemic cannot be effectively controlled in the short term, the impact of emergency control measures taken by governments to curb the spread of the epidemic will be expanded, which may expose us to relevant risks, including: reduced sales activities and customer orders, reduced plant operations and labor, international travel and communication difficulties, and limited transnational cooperation in research and development. In addition, if any employee is suspected

or diagnosed with an infectious disease, we may need to quarantine these employees or close the relevant workplace to temporarily suspend some or all production operations. UMC established its coronavirus epidemic control and response center in January 2020 to coordinate relevant information and resources usage, such as:

1). Daily review for conditions of production impact, supply chain management, epidemic prevention strategies and action preparation, etc.

2). Defined clear stages of infectious disease disaster management and prepared response measures in advance according to the situation of each stage, and launched corresponding activities in accordance with epidemic development. For example: reduce human infection and production impact (for detailed related measures, please refer to "4-3. Health and Safety Workplace" in the CSR report); reduce material shortages by increasing inventory, find and expedite the verification of second suppliers; reduce the operation impact of specific fabs by cross-plant products and order adjustment and transfer.

Up until February 2020, the epidemic has not had a significant impact on the Company's operations. The Company will maintain a positive and cautious attitude and continue to pay close attention and respond to it.

Other Significant Risks

None.

Note: The analysis and valuation of Risk Items shown above include the data during 2019 and as of the Annual Report Printing Date.

Other Necessary Supplements

None.

Social Responsibility

- 155 Description of Corporate Social Responsibility
- 157 About Social Charity
- 163 Environmental Protection, Safety and Health Management Instructions

Description of Corporate Social Responsibility

To fulfill corporate social responsibility and facilitate economic, environmental and social progress for the purpose of achieving sustainable development, UMC has formulated and complies with its Corporate Social Responsibility Practice Principles.

Currently, through the Corporate Sustainability Committee, UMC keeps abreast of relevant domestic and international standards in corporate social responsibility and changes in the corporate environment. UMC regularly reviews and improves its corporate social responsibility practices, systems and management policies to improve the effectiveness of its corporate social responsibility implementations.

In 2019, UMC was awarded with multiple honors related to corporate social responsibility, including being listed as a FTSE4Good Emerging Index component and FTSE4Good TIP Taiwan ESG Index component, and earning the Taiwan Corporate Sustainability Report Award, Green Procurement Award, Occupational Safety and Health Award, and Enterprises Environmental Protection Award. Meanwhile, UMC has been listed as one of the DJSI-World constituent stocks of DJSI (Dow Jones Sustainability Indices) for 12 consecutive years. DJSI is one of the most credible international corporate sustainability evaluation tools, so this is an indication that UMC's sustainability performance has been recognized by the international investor sector as a global leading enterprise.

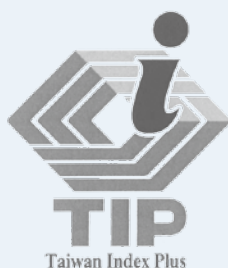
MEMBER OF

Dow Jones Sustainability Indices

In Collaboration with RobecoSAM



FTSE4Good
TIP Taiwan ESG Index



In addition to continuous dedication to this industry, the self-expectation of UMC is to become a green giant within the semiconductor industry. Energy saving and carbon reduction is a long-term undertaking, in which UMC is an advocator of low carbon innovation and provider of low carbon solution as well as an implementer of low carbon actions. UMC established the Fluorinated Greenhouse Gases Reduction Work Group as early as 1999 in response to global warming, and it achieved its 2000 voluntary reduction goal outlined by Taiwan Semiconductor Industry Association ahead of schedule. On Earth Day (April 22) in 2000, UMC was the first in the industry to announce a “Climate Change

Policy” and “UMC's Low Carbon Commitment” as the highest guidelines in response to climate change.

In 2013, UMC started an early reduction project for carbon reduction allowance approved by the EPA, which was based on the company's carbon reduction achievements for more than a decade. UMC completed the first carbon trade recognized by Taiwan's EPA in 2014, which can be regarded as an important milestone for the domestic carbon trading market. The income from this carbon trade was used for the environmental protection fund. Meanwhile, the “UMC Eco-Echo Ecology Preservation Hope Project” was activated to work with The Society of Wilderness to promote the Sauter's frog habitat preservation action in Hsinchu, where UMC's HQ is located, as an effort for contributing to environmental sustainability. In 2016, UMC extended the spirit of this project and launched the UMC Eco Echo Award. It has collected outstanding projects and creative ideas for a friendly environment via the execution and selection of the Eco Echo Award in order to urge more people to join this environmental protection effort. By 2019, more and more enterprises were participating in the care for local Taiwan ecology; in terms of society, UMC also provides disadvantaged organizations with energy saving and carbon reduction services through its energy saving service team in the three aspects of energy conservation and safety counseling, technical information on energy resources and engineering improvement in order to fully utilize corporate resources in response to global warming. UMC has also actively promoted clean production and green product management. In 2006, the Company was the first among all semiconductor makers in the world to complete the third party verification audit of Hazardous Substance Process Management (HSPM) system, and UMC became the first company in the world to acquire QC-080000 IECQ HSPM certification for all fabs. In 2009, it completed the first “product carbon footprint” verification of IC wafers according to the International Carbon Footprint Standard PAS2050. In 2010, UMC completed the “product water footprint” verification of IC wafers according to the Business Water Footprint Accounting criteria of the non-profit international organization “Water Footprint Network.” As an important milestone for development of green production, these results can also provide complete, scientific, and reliable product information as the basis for self-review and continuous improvement. In 2017, UMC took the initiative to launch the Triple R Major League project. UMC expects to cooperate with suppliers to promote measures for energy and resource reuse, recycling and reducing to achieve green products with lower environmental impact. On the other hand, UMC has also established a supplier management strategy to strengthen the economic, social and environmental performance by implementing supplier sustainability assessments, on-site audits, and coaching improvements and tracking to create a positive influence and enhance sustainable competitiveness of the overall supply chain.

Description of Corporate Social Responsibility (Continue)

Furthermore, UMC referenced the nature of its businesses as well as the 5 key principles of AA1000 SES (Stakeholder Engagement Standard) to identify the major stakeholders and formulated a management system for the identification of and communication with various stakeholders. In accordance with the materiality principle, UMC conducts impact assessments of environmental, social and corporate governance issues related to the company’s operations every year, and formulates corresponding improvement measures and plans. At the same time, the results were disclosed through the corporate social responsibility reports and Company websites.

UMC’s Corporate Social Responsibility Report issued in 2019 was composed by referring to the Global Reporting Initiative (GRI) Standards, and the content of this report was verified by a third party according to “Account Ability 1000 Assurance Standard.” In the same year, the Corporate Social Responsibility Report published by UMC was awarded the Taiwan Corporate Sustainability Report Award for the 12th consecutive year. These honors and recognitions indicate that, after long-term dedication to corporate social responsibility, UMC’s actions, transparency and completeness of information disclosure have all reached the international level, such that it has become a global benchmark enterprise.

Structure of UMC’s Corporate Social Responsibility Organization

UMC’s Corporate Sustainability Committee was established in April 2008. This is an important milestone of UMC’s implementation of social responsibility and direction towards the road to sustainability, and it also represent UMC’s focus on corporate social responsibility and resolution of promoting relevant measures. This committee is the highest level organization within UMC in charge of sustainable development and formulation of directions and objectives of corporate social responsibility for the entire company. The performance and objective achievement will be reviewed regularly by the chairman and committee members, and the director general of this committee will report to the board of directors annually on the effectiveness and plan of promotion, and important issues and response measures that stakeholders are concerned about.

There are seven sub-committees under the Corporate Sustainability Committee, which are Corporate Governance Committee, Customer Relationship Management Committee, Supplier Management Committee, Innovation

Technology Committee, Human Rights and Social Participation Committee, Environment Committee, and Green Manufacturing Committee. Their functions are as described below:

Corporate Governance Committee

Helps strengthen the function of the Board and shareholder equity, integrates related regulations and policies of relevant departments, and helps complete and implement the Company’s internal control system to ensure information transparency and disclosure, and compliance with regulations.

Customer Relationship Management Committee

Refines customer service and quality control, improves service quality and customer satisfaction, and protects customer interests and relevant trade secrets.

Supplier Management Committee

To establish a protective environment and emphasize the obligation to society, labor rights, security and health while pursuing the goal of a continuously evolving supply chain, this sub-committee develops long-term partnerships with vendors for quality, cost leadership, delivery, service/ response, and sustainability.

Innovation Technology Committee

Promotes green product research and development and innovations, and leads in cutting-edge green technology.

Human Rights and Social Participation Committee

Responsible for protecting the basic rights of employees and promoting communication with outside communities and society. Integrates the UMC Cultural and Educational Foundation, and with focus on education, arts, sports, public service and environmental protection, strives to promote technological research and development cooperation, long-term educational assistance, arts and sports activities and other social welfare events.

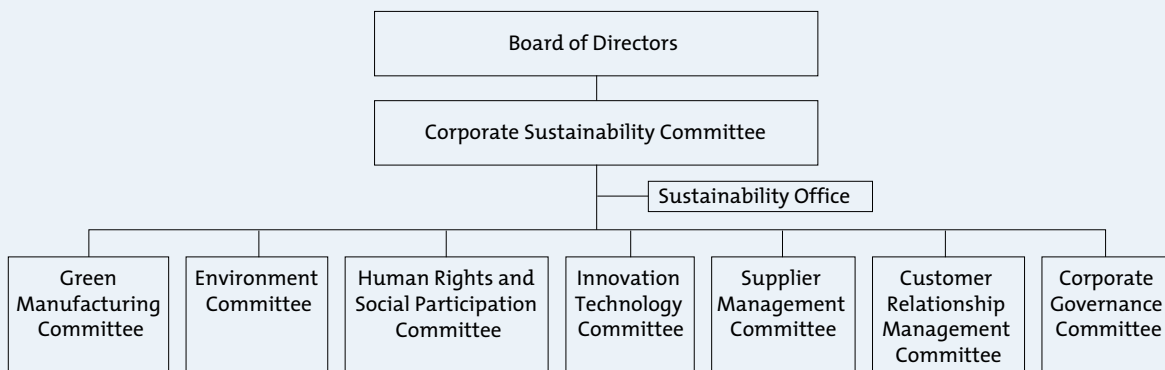
Environment Committee

Promotes company-wide environmental, safety and health, energy, water and greenhouse gas emission management. Establishes sustainable supply chains and long-term partnerships with suppliers to enhance sustainable competitiveness.

Green Manufacturing Committee

Promotes company-wide green processes, such as hazardous materials management and increases in resource productivity.

The organizational structure of Corporate Sustainability Committee is as shown below:



About Social Charity

UMC Science and Culture Foundation

Established in 1996, the UMC Science and Culture Foundation has been promoting social charity for many years. Currently, the focus is long-term educational assistance, and the Spreading the Seeds of Hope Project was launched in 2005 to help disadvantaged families through tutoring. Collaborating with agencies in Hsinchu and Tainan, the Foundation funds classrooms and the hourly wages of teacher trainees from universities to provide free tutoring to disadvantaged students needing academic assistance.

Summary of key implementations in 2019 :

Key Items	Description	Outcome
Education for the Disadvantaged	During its 25th anniversary celebration in 2005, UMC launched the Spreading the Seeds of Hope Project, an educational program that provides after-school tutoring for children from disadvantaged families in Hsinchu and Tainan.	In 2019, 110 children received a total of 750 hours of tutoring.
Life Education	Formed in 2009, the Love Storyteller Club has given drama performances in Pingtung, Hsinchu and Tainan.	Over the last 10 years, the Club has given 68 performances to a total audience of more than 20,000 people.
UMC Drum Club	Organized by the former Executive Director, the UMC Drum Club was launched in the Hsinchu and Tainan Science Park in July 2013. The group hopes to give back to society with "friendships through drums and inspiration through love." Moreover, through executive participation, a culture of volunteering is promoted.	Over the last 7 years, the group has given 40 inspiring performances to a total audience of more than 25,000 people.
Parent Education	Exclusively sponsored the Whatever Makes Sense for Voice of IC Teacher Hung Lan. Discussions are based on brain science research and audience opinion on parent education, and the vast influence of media is used to jointly create smart living with the audience.	Continued to sponsor the program in 2019.
Story-telling Volunteers	Employees volunteering for story-telling led reading activities in Baoshi Elementary School in Hsinchu County to motivate children to read on their own.	In 2019, the volunteers provided 24 sessions of activities to a total of about 400 children.

Key Items	Description	Outcome
Letter Writing Volunteers	Through letters, the volunteers reach out to their sponsored school children to encourage them, which is the simplest way of offering friendship, care and hope.	Sponsored a total of 110 children from the Fund for Children and Families.

- For more information on charity events, please refer to the UMC Science and Culture Foundation webpage at <http://foundation.umc.com/>

Donations for 2019 are as follow:

		In NTD
Social Participation		Amount
UMC Science and Culture Foundation	Spreading the Seeds of Hope Project Tutoring Program	4,305,779
	Sponsored 110 children from the Fund for Children and Families.	1,321,883
	Sponsored the Nantou Karate Association.	2,000,000
	Sponsored art and cultural events.	1,288,395
	Life education promotion and other sponsorships.	1,704,847
	Subtotal	10,620,904
UMC LOHAS Education Foundation	Sponsored the Hsinchu City Government's 2019 Special Learning Programs for Foreign Residence.	135,200
	Provided free admissions for charity/ visitations (a total of 700 students visited the UMC Recreation Center, and 300 free admissions to the recreational facilities were given to charity groups.	100,000
	Sponsored events organized by the Hsinchu City Department of Education in 2019.	100,000
	Sponsored Science Park Cup sports competitions.	60,000
	Sponsored the sites for Taiwan Learning and Development Association and Taiwan Toy Library Association.	120,000
	Subtotal	515,200
	Total	11,136,104

Promoting UMC Volunteer Culture

Under the leadership of UMC Science and Culture Foundation, the volunteer culture at UMC has gradually expanded to include volunteers from throughout the Company. At present, a large group of eager UMC volunteers has spontaneously formed the Candlelight Club for community services. The volunteer climate has gradually expanded to various clubs, and in 2019, 8 clubs participated in charity services.

About Social Charity (Continue)

UMC is passionate about public charity. The Company recognizes the limited resources of organizations for the disadvantaged and their great need for energy conservation and carbon reduction. Therefore, in 2015, UMC began forming the Energy Conservation Service Team, which was officially launched in 2016. The volunteer team comprises of experts in energy conservation, water conservation, air conditioning, lighting and fire prevention, and focuses on prioritizing the disadvantaged, energy conservation and safety, feedback and improvement. Based on these positions, the volunteer team provides organizations for disadvantaged groups with energy and safety diagnostics, and funding for immediate improvement projects. Charity services provided by clubs and the Energy Conservation Service Team in 2019:

Clubs	Services
Candlelight Club	Charity bazaars (Holiday Bazaar, Rebirth Bazaar and Concert, St. Joseph Social Welfare Foundation, Eden Social Welfare Foundation) Fundraisers (World Vision, St. Joseph Social Welfare Foundation, Joy Welfare Foundation) Organization events (Joy Kindergarten)
Ukelele Club	Teaching (Nan-he Elementary School, Fu-sing Elementary School and Xin-xing Elementary School in Hsinchu County) Free performances (Hsinchu Where! Youth Services Thanksgiving Dinner, Ukulele Parent-Child Competition, Ukulele Carnival in Taiwan, Hsinchu Museum of Imagery, Rebirth Concert at 16 th Children's Park, Hsinchu Science Park 39 th Anniversary Garden Reception, Wavetek, Candlelight Club Love Bazaar)
UMC Drum Club	Charity performances (Catholic Social Service Center fair, St. Joseph Social Welfare Foundation Garden Party, Hsinchu Science Park 39 th Anniversary Garden Reception)
Taichi Club	Huakuang Social Welfare Foundation- Huaguang Outreach, Chang-an Nursing home Charitable donations
Music Fellow Club	Free performances (L'arc Hotel Second-hand Market Activities, STSP Bureau Love-month Activity, Fab 12A Valentine's Day and Moon Festival Activities)
Hsinchu Energy Conservation Service Team	Kansai Huakuang Welfare Foundation, Hsinchu City Intellectual Disability Welfare Association, Hsinchu County Special Education School, Goodshepherd Foundation
Tainan Energy Conservation Service Team	Nan Jeon University of Science and Technology, Deguang Catholic Senior High School, Tainan Municipal An-Nan Hospital, St. Teresa Opportunity Center
I-Ching Club	St. Joseph Social Welfare Foundation Garden Party

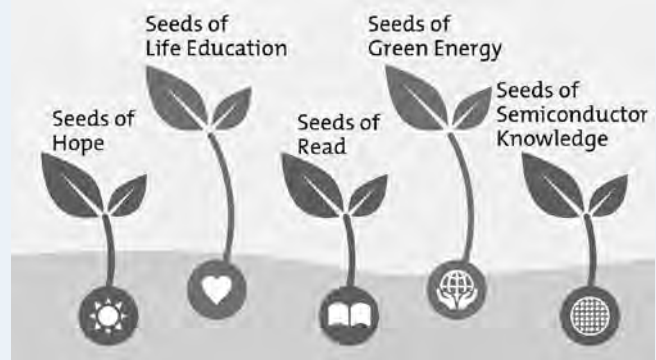
UMC Social Charity Units

The UMC Science and Culture Foundation and the UMC LOHAS Education Foundation are two major UMC foundations. The series of social participation events by the Spreading the Seeds of Hope Project, which started out as education assistance for the disadvantaged, the UMC Love Storyteller Club for life education and the Voice of IC Teacher Hung Lan for parent education, consistently convey love and hope, bringing warmth to every needed corner. In addition to the two major foundations, UMC is the only electronics corporation in Taiwan to establish an independent fire brigade to assist with disaster relief in the Science Park and surrounding communities, and further provide fire prevention education by promoting fire safety in elementary schools. The various integral social participations are key forces in UMC social citizenship and outreach to the disadvantaged. The combination of UMC's internal resources allows UMC employees to contribute wholeheartedly to society and create a safer and warmer society through their caring conviction and social outreach.

2019 Outcome for Spreading the Seeds of Hope-Educational Assistance for Children from Disadvantaged Families Project

In view of the huge gap in Taiwan's educational resources, UMC began implementing the Spreading the Seeds of Hope - Educational Assistance for Children from Disadvantaged Families Project in 2005. Through corporate strength, UMC strives to improve education for children from disadvantaged families by providing them with afterschool tutoring, and fulfilling the "spreading hope" stage of the project. In 2019, UMC continued to invest in the Seeds of Hope to help disadvantaged school children, and is committed to cultivating four key areas, namely life education, reading, environmental protection and green energy, and basic technology talents. Based on these spiritual, educational, environmental and basic technology dimensions, a new series of cultivation activities were implemented.

Strengthening educational foundation-- "Let Hope Sprout - Cultivate New Energy for the Future"



About Social Charity (Continue)

In 2010, UMC launched five key programs around the theme "Let Hope Sprout - Cultivate New Energy for the Future." The program is summarized below:

I. Spreading the Seeds of Hope—Educational Assistance for Children from Disadvantaged Families

The UMC Science and Culture Foundation continues to sponsor the tutoring costs for school children, and provides comprehensive education through reading and character education activities by volunteers. It is hoped that with the launch of the program, tutoring centers can be established in Hsinchu Science Park and Tainan Science Park to provide long - term educational assistance to children from disadvantaged families. In 2010, key tasks in Stage 1 of the Spreading the Seeds of Hope-Educational Assistance for Children from Disadvantaged Families Project were extended. In addition, long-term outreach such as reading and character education helped cultivate positive values and a learning attitude in children from disadvantaged families. To further incorporate the strength of UMC employees and their families into the program for helping children from disadvantaged families, the UMC volunteer tutoring team, formed in 2005, was integrated with the UMC Science and Culture Foundation and the UMC Candlelight Club. In addition to collaborating on activities such as collecting gift donations for Christmas and other holidays, camps and visitations are also organized at various times each year where volunteer teams comprising of UMC employees and their families interact with children from the Spreading the Seeds of Hope Tutoring Program. It is hoped that more passionate like-minded educators and companies can be recruited into the program. Moreover, the Company hopes that by giving long-term and sustained attention, it can inspire human care and love so that children with limited educational resources can also access educational resources through professional tutoring, and learn and grow confidently and happily like other children. Furthermore, it is hoped that the program can sprout, grow and thrive in even more places.

The outcome of UMC's Seeds of Hope long-term projects are as follow:

1. Through close collaboration between academic counseling and families/schools, children from disadvantaged families regained confidence and growth in their learning.
2. Volunteer outreach helped prevent deviant behaviors in children by allowing them to feel understood and cared for, and helped them begin to break out of poverty through the power of education.
3. In 2019, 110 children received a total of 750 hours of tutoring.
4. Through sponsoring the Nantou Karate Association, disadvantaged students gained confidence and discovered their strength through karate training.

II. Promoting National Reading Culture Through Me 2 We Reading Club

To promote the National Reading Culture, UMC employees formed the Me 2 We Reading Club to not only share the joy of reading within the Company, but also to train UMC employees for volunteer storytelling. The storytelling skills not only allow employees to experience the pleasure of storytelling, but also enhance the quality of their reading time with their children.

In addition to sharing reading with their colleagues and children, UMC employees went beyond their personal scope and participated in the Spreading the Seeds of Hope Tutoring Program to promote reading in remote rural elementary schools.

III. Promoting Life Education Through Life Education Volunteer Club

The Life Education Volunteer Club recruits members from UMC's employees and their families to help disadvantaged youths avoid delinquency and discover their personal strengths. After receiving former training and certification, the volunteers visit indigenous students and marginal youths in Hsinchu and Nantou to help them understand the true meaning of living and personal growth.

In addition, the UMC Love Storyteller Club was formed, where volunteers worked in teams to choreograph, rehearse, construct props and costumes and perform. In addition to public performances in the 88 Flood disaster areas, the club was also invited by the Ministry of Justice to perform in Cheng Jheng High School so that given limited educational resources, those in remote rural areas and those on probation can still enjoy a rich spiritual feast. Through these experiences, UMC volunteers were also inspired to reflect on their own lives and cherish their blessings.

Summary of achievements in 2019:

Key Items	Outcome
Sponsored the Whatever Makes Sense for Voice of IC Teacher Hung Lan program	A total of 52 episodes were broadcasted in 2019.
Candlelight Club-Community outreach and fundraising bazaar	A total of 73 bazaars, totaling 4,370 participants. 342 volunteers participated, totaling 1,148 hours.
Ukelele Club-Volunteer performance and teaching	A total of 11 sessions, totaling 3,142 participants. 113 volunteers participated, totaling 528 hours.

About Social Charity (Continue)

IV. Eco Green Energy Programs for Promoting Environmental Education and Green Energy Technology Talent Cultivation

In view of the growing problem of global warming, environmental issues have become a responsibility for everyone. In addition to its commitment to establishing a low-carbon supply chain and green energy industry, UMC is passionate about supporting environmental events and promoting environmental education. Through various environmental programs, eco concepts are further promoted to students, friends and families so that environmental protection becomes a responsibility and life standard for everyone.

V. Semiconductor Programs for Cultivating Taiwan's High-Tech Talent

With the mission of cultivating Taiwan's high-tech talent, UMC not only invests in developing and improving the Company's existing talent, but also in cultivating seed talent for Taiwan's semiconductor technology through early contact. The semiconductor process practicum courses in National Cheng Kung University, National Central University and Chung Yuan Christian University are taught by experts from UMC for early cultivation of semiconductor seed talent at the university stage so that young students can acquire deeper semiconductor knowledge and skills in their studies. Furthermore, they can better dovetail into their subsequent workplace development and actively integrate into their career, thereby achieving talent cultivation for Taiwan's semiconductor technology.

In addition, UMC collaborates with National Cheng Kung University, National Tsing Hua University, National Chiao Tung University and National Sun Yat-sen University on advanced technology R&D and projects. The research scope includes artificial intelligence algorithms, micro-sensors and actuators, machine learning algorithms, deep learning and wafer defect detection, etc., to achieve the most effective industry-university cooperation for integrating theory and practice.

Summary of key implementation outcomes in 2019:

	Key Items	Outcome
Industry-University	National Central University, Chung Yuan Christian University, industry-university courses on semiconductors	Offered semiconductor processing practicum courses in 2019. About 193 students enrolled.
	Nano Generation course at National Cheng Kung University	Offered an introductory course on Semiconductor Processing in the Nano Generation at National Cheng Kung University in 2019. About 269 students enrolled.
Campus Cultivation	Domestic and Overseas Summer Internship	Provide a specific number of internship opportunities each summer vacation. In 2019, a total of 21 interns were recruited.
	Equipment Intern	Collaborated with National Taiwan University of Science and Technology, National Taipei University of Technology, Chung Hua University, Southern Taiwan University of Science and Technology, National Chin-Yi University of Technology, National United University, Da-Yeh University, National Kaohsiung University of Science and Technology and National Formosa University to provide student internship opportunities at UMC. In 2019, a total of 29 interns were accepted.

About Social Charity (Continue)

Key Items	Outcome	Key Items	Outcome
Enterprise Visitations	Provide enterprise visitation opportunity for schools. In 2019, the Company received a total of 822 visitors from National Cheng Kung University, National Kaohsiung University of Science and Technology, National Central University, Chung Yuan Christian University, National Tsing Hua University, National Chiao Tung University, National Quemoy University and National Formosa University.	National Cheng Kung University Career Advisor Program	In its collaboration with key schools in recent years, UMC offers career seminars and career coaching programs to help students understand the future pulse from the perspective of industrial professionals. Moreover, based on student traits and learning, the career coaches provide career plan suggestions to help students find career paths that are appropriate for them. With National Cheng Kung University as an example, UMC has been providing career coaching for 8 years, with more than 200 students from the university participating each year, and the program is still being implemented. In addition, students are assisted with resume writing to help them discover their strengths, sell themselves in their resume and capture the attention of companies and executives. At the same time, colleagues from National Taiwan University, National Tsing Hua University and National Chiao Tung University have their colleagues serve as career counselors to provide professional counseling to their students.
Campus Ambassador for disabled students	Employed students who are disabled for work study. Strengthened campus talent recruitment and encouraged disadvantaged students to actively learn. Since the program began in 2013, a total of 128 students with physical disabilities were provided with work study opportunities, and in 2019, 22 students were still employed.	PTP Prospective Talent Program	The early contact and agreement with prospective talent on campus enhances connection and interaction with targeted talent. The broadening UMC PTP also expands the image and influence of UMC. Since UMC began recruiting outstanding talent in 2013, 4,435 students have been recruited and 856 prospects are still in school.
Campus relationship development (Including technical career lectures)	Helped arranged a series of brand image cultivation activities, including book discussion, career sharing, internship cooperation, and exhibits for semiconductor display. In 2019, 21 book discussion sessions were held, with a total of more than 2,151 participants.	Advanced Intelligent Elite Development (AIED)	To acquire higher quality employees, campus relationships and the connection and interaction with outstanding equipment talents are systematically established. Recruitment for outstanding talent began in 2018, and 2,409 students have attended in AIED campus briefings, recruiting a total of 749 members.

About Social Charity (Continue)**UMC Social Participation**

Committed to the core philosophy of “people-orientation and co-prosperity with society,” UMC fulfills its corporate social responsibility according to the concept of LOHAS (Lifestyle of Health and Sustainability). UMC believes that the success of a company not only requires personal diligence, but also the support of a harmonious society for it to flourish and develop robustly. Therefore, since its establishment, UMC has declared itself a public instrument in its long-term management policy, and is committed to giving back to society. Therefore, in addition to their commitment to the Company’s business growth, the “Happy Employees” of UMC are also enthusiastic about social charity. To encourage employee participation in charity, UMC provides Charity Leave for employees to participate in volunteer services.

UMC has always been wholehearted in social charity, and continues to donate money to cultural, and educational and academic units. Recipients include groups such as National Tsing Hua University, UMC Science and Culture Foundation, UMC Operation Management Thesis Award, National Cheng Kung University academic funding for Nano-IC Engineering, loan transfer to feedback fund for management talent, Taiwan Semiconductor Industry Association Environmental Protection Fund, Global Views Educational Foundation Green Award prizes, VLSI Design/CAD Symposium, GLO Leadership Training Summit and ASUS Foundation, as well as charity events.

In the days to come, UMC will remain dedicated to its philosophy of receiving from society and giving back to society by supporting social charity.

Summary of donations in 2019:

		In NTD
Social Participation		Amount
UMC	Donated to UMC Science and Culture Foundation	10,000,000
	Donated to the 9 th UMC Operation Management Thesis Award	2,801,459
	Donated to the National Cheng Kung University academic funding for Nano-IC Engineering	3,000,000
	Loan transfer to feedback fund for management talent	530,000
	Donated to Taiwan Semiconductor Industry Association Environmental Protection Fund	512,021
	Donated to the Global Views Educational Foundation Green Award prizes	610,000
	Donated to VLSI Design/CAD Symposium	100,000
	Donated to National Tsing Hua University	35,000,000
	Donated to GLO Leadership Training Summit	62,500
	Donated to ASUS Foundation	37,800
	Donated to Taipei Awakening Association	500,000
	Total	53,153,780

Environmental Protection, Safety and Health Management Instructions

In terms of environmental protection, safety and health, UMC has set the objectives of zero pollution and zero incidents to become an enterprise of sustainable development; in addition to being in compliance with and exceeding the requirements of environmental safety and health laws and regulations, the Company utilizes advanced environmental protection, safety and health, risk and disaster rescue technologies to actively enhance environmental protection and safety aspects based on a forward-looking vision. UMC has also continued with environmental safety and health education and advocacy for all its employees and encouraged active participation in related activities to strengthen the environmental safety and health belief and habits of all employees through subtle influence.

ESH Management System

UMC's ESH management system is established according to ISO 14001 and ISO 45001 standards. It is intended to integrate daily management with total quality management (TQM) activities such that the ESH management plan can be integrated with actual fab operation in order to achieve the effectiveness of implementation. As for various

ESH risks of company operation, the possible impacts of various activities (from the use of raw materials to the generation of waste) on the environment and all company employees will be evaluated via a systematic approach. As for the items which could result in major environmental impact, the management and reduction will be applied via the assessment/replacement/reduction approach for raw materials, control and reduction of process pollution source, effective treatment of end-of-the-pipe pollution, and residual by-product reclamation. In terms of safety and health, UMC will start with management of equipment, chemical, and operation safety in order to maintain the safety and health of all employees.

In order to achieve the objective of sustainable development, the Company has set clean production and zero incident as the promotion direction of environmental protection and safety and health. Every year UMC will set the objectives and targets of the ESH management system in coordination with the Company's operation direction, and each fab will launch various plans for reducing environmental impact and strengthening safety and health in order to continuously improve company performance of environmental protection and safety and health management.

Achievement status of UMC's Important ESH Objectives/Targets in 2019:

Objective	Target	Achievement Status
Eliminating major accidents and continuously promoting self-management of safety and care and individual occupational safety	1. Zero Major / Serious occupational safety incident	Zero occupational safety incident throughout the year
	2. Fewer than 11 minor (or above) accidents	A total of 11 incidents throughout the year
Promoting green management Green 2020 project to reduce the Company's impact on the environment	To reduce water, electricity, and waste by 10% over the base year by 2020. 1. Water Usage: 10% reduction (Intensity) 2. Electricity Usage: 10% reduction (Intensity) 3. Waste Generation: 10% reduction (Intensity)	The milestone of 2019 was achieved
Note: the base year is 2015		

Environmental Protection, Safety and Health Management Instructions (Continue)**Environmental Protection****Greenhouse Gas Reduction and Management**

Facing the issues of climate change and worsening global warming, UMC has already prepared and implemented response strategies. It set up the “Fluorinated Greenhouse Gases Reduction Work Group” in 1999 to be dedicated to the research and promotion of reduction of fluorinated greenhouse gases. It formulated the “UMC Climate Change Policy” in 2010 as the highest guiding principle of the Company in response to climate change.

The major reduction plans with respect to fluorinated greenhouse gases to be promoted include:

- Measuring the utilization rates of process tools using fluorinated greenhouse gas and the destruction and removal efficiency of its emissions control technologies to be fully aware of the machine performance and to improve those with poor performance.
- Implementing survey and assessment of the consumption amount for fluorinated greenhouse gases in order to understand the greenhouse gas emission volume of each process tool.
- Carrying out a research project on alternative gas to reduce the consumption of process gasses that contribute to global warming potential (GWP) via source improvement.
- As for the new fluorinated greenhouse gas emissions control technologies, the selection, assessment, and investment have been applied for installation of high performance fluorinated greenhouse gas abatement systems in order to reduce the emission of fluorinated greenhouse gases year by year.

In 2007 and 2011, UMC led the industry in completing the 2-Phase fluorinated greenhouse gases replacement plan (replacing C_2F_6 with C_3F_8 and replacing C_3F_8 with C_4F_8) for the entire company, thus greatly reducing greenhouse gas emissions and its impact on global warming. After years of effort, UMC has achieved the objectives of the “Carbon Reduction 333” project and the “369+ Energy and Resources Productivity Enhancement Project” in 2012 and 2015, respectively. The company has also formulated the “Green 2020” project to commit to goals of 10% water saving, 10% power saving, and 10% waste reduction in the future based on more stringent self-requirement standards and more active spontaneous actions. At this stage, UMC has also applied for GHG Offset Project in 2019, according to Taiwan’s voluntary GHG reduction incentive program to apply for carbon credits. UMC estimates it can build 10 years of carbon assets totaling more than 1.5 million tons.

Energy Saving Management

The use of energy will consume the Earth’s resources, and it will also generate carbon dioxide resulting in the greenhouse effect. To reduce the environmental impact

of the greenhouse effect, UMC has set annual goals and plans to reduce greenhouse gas emission. In addition to constant evaluation and introduction of various energy saving technologies, UMC will carry out energy saving plans for relevant facilities in order to directly and effectively reduce the Company’s energy consumption. In addition, UMC has promoted the implementation of energy saving management plans for offices and public areas together with advocacy activities and educational training in order to enhance the concepts and habits of all employees with regard to energy saving and greenhouse gas reduction.

Water Resources Saving and Management

For more effective utilization of limited water resources, UMC formulated its “Water Management Policy and Commitment” in 2015. From the perspectives of introduction of water resources risk management system, development and application of diversified water resources, supply chain cooperation, and strengthening of water resources education, UMC will continue to promote various water saving measures, actively enhance water efficiency, and introduce new water saving technology in order to promote the emphasis and saving of water resources. According to the fab construction schedule, the fab water recycling rate and process water recycling rate of all fabs are superior to the standard set by Science Park Bureau. The water saving measures for general water consumption include the adoption of water-efficient taps, rainwater interception for landscape watering, and water conservation of air conditioners and kitchens. In addition to internal water resource assessment and management and active promotion of water conservation, the Company also serves as a representative in industrial unions & associations. The Company cooperates with the government and industrial peers in water resources communication and exchange counseling.

Waste Management and Resource Recycling Management

UMC’s waste management is established on an economic and effective waste management mechanism to achieve the objectives of safe, healthy and harmless resource utilization. The strategies include total amount reduction, recycling and reuse of resources, and waste management. UMC has always adhered to the belief of green production while promoting waste and resource recycling management. On one hand, it has reduced the generation of waste through process improvement, raw material reduction and source management; on the other hand, it has actively promoted waste recycling and reuse to replace the existing end-of-the-pipe treatment mode and to convert garbage into useful resources. In addition to reducing the resources and cost of waste treatment, the company hopes to help alleviate increasingly serious environmental problems. Finally, in

Environmental Protection, Safety and Health Management Instructions (Continue)

terms of waste management, manpower will be dedicated to regular auditing of the Company's waste disposal service provider and tight control of waste destination while selecting the optimal waste disposal approach.

Pollution Emission and Control

End-of-the-pipe treatment has been regarded as the last resort in recent years. In terms of pollution control, in addition to development of required technologies in response to new environmental protection laws and regulations or standards, UMC has also considered the tolerance and interaction of the overall environment to apply self-control and constantly introduces high performance pollution prevention technologies and equipment. All pollution prevention equipment are operated and maintained by professional work teams, and the operation status of all pollution prevention equipment is monitored by a central system with shifts covering 24-hours to ensure emission quality.

Environment-related Data Disclosure

UMC is committed to the spirit of initiative, openness, transparency and quality, and publicly discloses its management of environment-related information. At present, UMC has set 2025 management targets for important indicators such as greenhouse gas emissions, electricity consumption, water consumption, waste generation and volatile organic compound emissions. At the same time, UMC also disclosed the data of the last 5 years in the corporate social responsibility report and through third-party verification to confirm the latest information and verify the reduction outcome every year. The annual information for 2019 will be verified by third party inspection and publicly disclosed before June 2020.

On the other hand, UMC was also invited to participate in the international CDP organization's climate change and water disclosure project, and further disclosed the identification results of risks and opportunities and related management information. In 2019, UMC's climate change disclosure was awarded the Level 4 Leadership (A-) score; and water disclosure was awarded the highest rating for Taiwan's enterprises with a (B) rating. It shows that UMC has been recognized by international investment institutions for its sustainable information disclosure.

Other Environmental Management Plans

Over the years, UMC has continued with its effort in environmental protection by constantly introducing various environmental management tools such as environmental management system, product life cycle assessment, and environmental accounting. The hope is to achieve the substantial objectives of environmental improvement and reduction of environmental impact via the environmental

management approach, and spontaneous and continuous improvement.

UMC was aware of the green wave coming from the international environmental protection trend and customer demand as early as 2003, and it began the promotion of the green supply chain management system and became a member of SONY Green Partner in the same year. To date, the Company has continuously passed re-verification, indicating UMC's hazardous substance management effectiveness has been recognized by customers. In 2006, UMC was the first among global semiconductor manufacturers to complete the hazardous substance process management (HSPM) system audit and to be granted the recommended registration. UMC has also become the first semiconductor manufacturer in the world to have all fabs granted with the QC-080000 IECQ HSPM certificate.

In addition, for laying the foundation of green product, process and design, UMC has actively implemented comprehensive carbon/water management plans. In September 2009, it completed the world's first "Product Carbon Footprint" and EPD (Environmental Product Declaration) verification of IC wafer, and obtained the independent verification statement issued by a third party to become the first semiconductor company in Taiwan to independently and completely calculate and verify the product carbon emission information. In 2000, it was the first in the industry to complete the water footprint verification of 8-inch and 12-inch fabs. With the important operational belief of symbiosis with a sustainable environment, UMC has provided its comprehensive green production system plans to help its customers produce environmental friendly, high quality products. The completion of carbon footprint, water footprint, and environmental product declaration indicates that UMC has tracked and monitored the information of various environmental impacts during the IC wafer manufacturing process through rigorous systems with international certification, and helped customers completely construct the environmental information of green product and supply chain. This also specifically demonstrates UMC's active undertaking of social responsibility.

In the future, UMC will more aggressively promote the green supply chain project based on carbon footprint, water footprint, and Environmental Product Declaration to help customers produce green products with lower environmental impact and to enhance the sustainable competitiveness of the entire supply chain.

Safety and Health

Promoting the Culture of Individual Occupational Safety

The analysis of the causes of domestic and foreign accidents has revealed that 90% of them are due to "Human Factors," such that the safety of personal behavior has a more profound impact on the safety of the organization.

Environmental Protection, Safety and Health Management Instructions (Continue)

Therefore, UMC is dedicated to promoting the safety and health culture of “Individual Occupational Safety.” Starting from “Pay attention to your own safety and care about other’s safety” and “Occupational safety is everyone’s responsibility” and under the declaration and leadership of the chairman, UMC has introduced the safety thinking mode, and established complete communication and proposal channels so that employees can express their opinions and receive professional response and assistance, implement safety and health protection work, and continuously enhance the quality of the work environment. It is expected that UMC can become the global role model of safety and health.

Safety and Health Management

By law, all UMC fabs have formulated labor safety and health management plans every year, and the contents include:

• **ESH Risk Assessment**

Ever since the founding of Company, UMC has been introducing various methods for risk assessment of the company’s processes, equipment, and chemicals. UMC has also tried to reduce the occurrence of accidents and environmental pollution caused by process and equipment through engineering improvement and process replacement. As for the safety and health risk, UMC has divided them into preliminary review, change review, and regular review. As for the execution of preliminary review, in addition to using a simple risk matrix for selecting operating activities with higher risks to carry out improvement and management, UMC has also conducted the review and risk reduction of hazardous workplace with respect to the items listed in the Hazardous Workplace Review and Inspection Rules.

As for the environmental and safety and health risks caused by change of equipment, and introduction of new chemicals and new machines, the assessment should be carried out according to the rules of change review. In addition to managing these according to domestic laws and regulations, the specification requirements of safety facilities and environmental protection of equipment and chemicals should be specified according to international standards, so that the ESH impacts can be minimized at the beginning of such change.

In addition to the aforementioned preliminary review and change review, the ESH risk assessment will be conducted again for all operations ever three years, and the operation items with increased risk levels must be examined to see if there is a need for improvement.

• **Management of Machine, Equipment, or Appliance**

In addition to being in compliance with domestic standards, such as CNS (Chinese National Standards) and machine equipment appliance safety standard, the machines used by UMC must come with the reports (provided by the equipment supplier) meeting the semiconductor

manufacturing equipment safety, health, and environmental protection standard (SEMI S2) formulated by international semiconductor equipment and material organization. If there is any non-conforming item, it must be improved before entry into the fab. After fab entry, the water, electrical, gas, and chemical use safety inspection must be conducted according to different stages of machine installation before these machines can be used.

During machine operation and maintenance, employees should receive the educational training of the machine operation and be in compliance with the operation rule. Unless there is approved application and adoption of alternative safety measures, it is prohibited to disable the safety interlock device of the machine in order to avoid any significant occupational incident.

• **Management of Hazardous Chemicals**

UMC has a hazardous chemical management strategy. All chemicals entering UMC must comply with the strategy and strict safety review mechanisms before they can be used in UMC.

UMC’s sound chemical management process meets regulatory requirements. In addition to labeling and training by law, the exposure risk assessment method should be introduced and the chemical risk level and classification management measures should be established in order to reduce the exposure hazard risks to workers.

The working environment monitoring should be conducted every six months according to the Rules for Implementation of Working Environment Monitoring. The effective sampling strategy should be formulated, and the monitoring results should be verified by statistical analysis tool to ensure the exposure situation of every similar exposure group and to protect the health of employees.

There are toxic gas detectors distributed in the working environment in the fab for early control of trace gas leaks with timely warning and automatic broadcasts to notify employees to evacuate to designated safe areas.

• **Procurement Management and Contractor Management**

UMC has specified the safety and health rule of procurement in the operation regulation of the Company’s procurement department. The raw materials suppliers will be requested to conduct labeling, production, and transportation according to domestic laws and regulations, and there will be regular audit of suppliers to ensure that there will not be any safety or health or environmental protection accidents that would cause abnormal supply.

As for the contractor management, the active and effective management approach should be adopted to prevent contractors from accidents. In addition to carrying out qualified contractor evaluation and formulating “Notices of ESH Contractor” to be signed by the person in charge of the contractor, all workers entering the fab should receive UMC’s “Contractor ESH Educational Training.” In addition, the “Contractor Work Place Hazard Notification and Agreement

Environmental Protection, Safety and Health Management Instructions (Continue)

Meeting” should be completed for all contractors entering the fab. A complete online application system should be established for effective control of construction application and the management before, during, and after the construction. In addition to requesting the contractor to assign onsite supervisory personnel, a safety agreement meeting should be convened every day before construction. During the construction period, occupational safety personnel should conduct frequent audits in addition to the onsite supervision by the responsible department in order to ensure that all operations are in compliance with safety regulations.

• Formulation of Safety and Health Operational Standard

UMC has formulated the safety and health protection standard which is applicable to the entire company, and each operational department should formulate operational standards for different operations according to company regulation. The content should include: operating procedure, operation inspection and regular inspection items, protective equipment to be used, and operation frequency.

In addition to being in compliance with the operational standard, all employees should pay attention to the unsafe behaviors of others and offer reminders at the work place according to the spirit of individual occupational safety in order to achieve the optimal effect of personal discipline control.

• Regular Inspection, Key Points Inspection, Operation Inspection, and Onsite Walkthrough

Regular and key points inspections should be arranged for various facilities and operations according to laws and regulations, and operation inspections should be conducted regularly by employees in charge of facilities and operations. In addition to the matters specified by laws and regulations, supervisors at all levels and occupational safety personnel should arrange regular and irregular onsite walkthroughs and audits. The deficiencies of audits should be tracked by computer system, and these cases can only be closed after the improvement is completed.

• Safety and Health Educational Training

By nature, UMC’s ESH educational trainings can be divided into three categories:

- Company-wide safety and health educational training
- Fab-wide safety and health educational training arranged by each fab
- ESH trainings formulated by each department according to the nature of each department

The continuous educational training and advocacy can develop employees’ emergency response capability and safety concept, strengthen employees’ perception, and reduce the occurrence of accidents caused by unsafe conduct. UMC has included the emergency response, licenses required by laws and regulations, maintenance of the safety and health management system, safety

protection of special operation, and construction supervision personnel in the annual training plan. In addition to the training courses in the plan, educational training should be arranged from time to time with respect to any specific incident or major deficiency if necessary. In 2019, the Awareness of Hazardous Chemicals course was held. To date, 2,099 classes have been offered, attracting a total of 82,225 participants. It contained e-learning and physical courses so that employees could learn about safety and health knowledge without being limited by time and venue.

• Management of Personal Protective Equipment

UMC establishes management procedures based on the type of the hazards and provides adequate personal protective equipment (PPE) for workers to use. The condition of PPE is regularly checked, and the supervisors and occupational safety personnel also occasionally inspect the use of PPE.

• Health Examination, Health Management, and Health Promotion Matters

UMC believes that employees are the most important asset of an enterprise. Only employees that are healthy both physically and mentally can provide highly efficient and high quality work performance. Therefore, over the years UMC has been dedicated to creating a work place that can contribute to physical, mental, and spiritual health. In addition to helping employees with comprehensive health management and health promotion, care has been extended to employees’ families, hoping to achieve the goals of work moral and work quality enhancement.

• Collection, Sharing, and Utilization of Safety and Health Information

The collection and sharing of company safety and health information are conducted via diversified modes. Domestic and foreign safety and health regulations are collected and reviewed by the Division of Risk Management and Safety and Health, which will suggest to carry out the proposal within the Company to be approved by the ESH Committee. The external major accidents and safety and health news will be advocated to employees via CSR newsletter or BBS within the Company. The safety and health advocacy posters will be put on occupational safety bulletin boards in all fabs frequently. In addition, communication channels such as ESH mailbox and ESH proposal systems have been established on the Company’s intranet website for our employees to reflect opinions or problems related to safety and health management.

• Emergency Response Measures

In order to allow employees to be equipped with the knowledge and skills of immediate disaster relief upon occurrence of any accident, all employees must take basic fire-fighting, safety and emergency response courses arranged by the Company every 5 years. These courses cover fire safety, disaster response, and actual operation

Environmental Protection, Safety and Health Management Instructions (Continue)

of fire extinguishers, and all employees are expected to be equipped with such skills. In addition, an emergency response team (ERT) is formed in every fab, and the members of this team should receive various emergency response trainings and regular rehearsals with respect to various accidents in order to strength the disaster response skills of ERT members and to achieve the objectives of protection and control at the initial stage of disaster.

• Statistical Analysis of Occupational Incidents

As for occupational incidents that take place at the work place, in addition to regular summaries and reports, every accident must be registered in the accident report and investigation system to be tracked. In addition to the investigation of accident causes and improvement and prevention, accident prevention should be included as the Company's objectives and targets of safety and health management. Various activities must be promoted in order to achieve the accident reduction and safety enhancement.

• Safety and Health Management Record, Performance Review, and Rewards

For facilitating management, in addition to written records, UMC has established multiple computer systems as an aid for safety and health management, such as automatic inspection system, ISO 14001 & ISO 45001 management systems, accident report and investigation system, and walkthrough report system. In addition to facilitating data inquiry by employees, the tracking of preventive management measures should also be strengthened.

For the performance of safety and health management, in addition to management review meetings regularly convened in each fab and for the entire company to review the objectives and targets, occupational competitions will be arranged in each fab, and all active occupational management indicators should be included as the evaluation items for individuals and departments. The departments with outstanding performances should be rewarded, and the selection of outstanding occupational safety achievement will be arranged every year in the Company to encourage the active improvement of safety and health in the work environment and the exchange of safety and health improvement matters among different fabs. These will also contribute to the promotion of individual occupational safety and reduction of accidents.

Granted Awards of Safety and Health and Environmental Protection

UMC has been devoted to the promotion of environmental protection and labor safety and health. In addition to being dedicated to achieving the international level of risk control and environmental protection and safety and health management performance, UMC's various ESH management behaviors have also been well received by competent authorities and among peers.

The awards granted to UMC in 2019 are as shown below:

- "The Best Participation of Green Procurement for Enterprises" by the Environmental Protection Administration of Executive Yuan, R.O.C.
- "The 1st Green Chemical Application and Innovation Award" by the Environmental Protection Administration of Executive Yuan, R.O.C.
- "National Enterprise Environmental Protection Award" by the Environmental Protection Administration of Executive Yuan, R.O.C. (Fab 12A)
- "Energy Saving Leadership Award" by the Bureau of Energy, Ministry of Economic Affairs, R.O.C. (Fab 12A)
- "Science Park Water Saving Outstanding Achievement Prize" by the Hsinchu Science Park Bureau, Ministry of Science and Technology, R.O.C. (Fab 8F)
- "Award of Enterprise with Outstanding Waste Reduction and Resources Circulation" by the Hsinchu Science Park Bureau, Ministry of Science and Technology, R.O.C. (Fab 8S)
- "Business with Outstanding Environmental Protection Performance" by the Southern Taiwan Science Park Bureau, Ministry of Science and Technology, R.O.C. (Fab 12A II)
- "Outstanding Occupational Safety and Health Unit" by the Occupational Safety and Health Administration, Ministry of Labor (Fab 8A)
- "Outstanding Occupational Safety and Health Unit" by the Southern Taiwan Science Park Bureau (Fab 12A II)
- "Outstanding Occupational Safety and Health Unit" by the Hsinchu Science Park Bureau, Ministry of Science and Technology, R.O.C. (Fab 8F)

Special Disclosures

- 170 Summary of Affiliated Enterprises
- 182 Issuance of Private Placement Securities
- 182 Acquisition or Disposal of UMC Shares by Subsidiaries
- 182 Other Necessary Supplements
- 182 Disclosures of Events Which May Have a Significant Influence on Stockholders' Equity or Share Price, in Compliance with Item 3, Paragraph 2 in Article 36 of the Securities and Exchange Law of the R.O.C.

Summary of Affiliated Enterprises (Continue)

Basic Data of Affiliated Enterprises

In NTD

Name of Corporation	Date of Establishment	Address	Capital	Major Business / Production Items
UMC Group (USA)	1997.08.11	488 De Guigne Drive, Sunnyvale, CA 94085, USA	508,231,063	IC Sales
United Microelectronics (Europe) B.V.	1989.05.23	De Entree77, 1101BH, Amsterdam Zuidoost, The Netherlands	119,820,688	Marketing support activities
UMC Capital Corp.	2001.01.16	190 Elgin Avenue, George Town, Grand Cayman, Cayman Islands	2,215,747,586	Investment holding
UMC Group Japan	2013.02.08	15F Akihabara Centerplace Bldg., 1 Kanda Aioi-cho, Chiyoda-ku, Tokyo 101-0029, Japan	8,505,000	IC Sales
UMC Korea Co., Ltd.	2013.04.12	1117, Hanshin Intervals 24, 322, Teheran-ro, Gangnam-gu, Seoul, Korea	14,575,000	Marketing support activities
TLC Capital Co., Ltd.	2005.10.14	5F, No.17, Lane 120, Neihu Road Section 1, Taipei, Taiwan 114, R.O.C.	3,979,563,000	Venture capital
Fortune Venture Capital Corp.	1993.09.21	5F, No.17, Lane 120, Neihu Road Section 1, Taipei, Taiwan 114, R.O.C.	4,017,344,480	Consulting and planning for venture capital
Green Earth Limited	2009.09.09	Maystar Chambers, P.O. Box 3269, Apia, Samoa	29,988,444,000	Investment holding
UMC Investment (Samoa) Limited	2011.03.30	Maystar Chambers, P.O. Box 3269, Apia, Samoa	43,519,120	Investment holding
NexPower Technology Corp.	2005.11.25	No.2, Houke S. Rd., Houli Dist., Taichung, Taiwan 42152, R.O.C.	711,986,480	Sales and manufacturing of solar power batteries
UMC Capital (USA)	2001.02.13	488 De Guigne Drive, Sunnyvale, CA 94085, USA	6,183,800	Investment holding
ECP Vita Pte. Ltd.	2012.05.10	138 Market Street, #07-02 CapitaGreen, Singapore 048946	278,271,000	Insurance
Soaring Capital Corp.	2008.03.25	Level 2, Lotemau Centre, Vaea Street, Apia, Samoa	27,351,000	Investment holding
Unitruth Advisor (Shanghai) Co., Ltd.	2008.10.16	No.1468, Nanjing Road West, Suite 2908 Shanghai, China	24,735,200	Investment holding and advisory
Tera Energy Development Co., Ltd.	2011.07.19	1F., No.1, Jinshan 8th St., Hsinchu, Taiwan 30080, R.O.C.	186,550,910	Energy technical services
Everrich Energy Investment (HK) Limited	2009.12.16	Room 2702-03, CC Wu Building, 302-8 Hennessy Road, Wanchai, Hong Kong	25,988,211	Investment holding
Everrich (Shandong) Energy Co., Ltd.	2009.11.02	Entrepreneurship Service Center, Building 4, Torch City, High-tech Zone, Jining City, Shandong Province, China	23,189,250	Solar engineering integrated design services

Summary of Affiliated Enterprises (Continue)

In NTD				
Name of Corporation	Date of Establishmen	Address	Capital	Major Business / Production Items
Wavetek Microelectronics Corporation	2010.10.18	3F., No.10, Chuangxin 1st Rd., Baoshan Township, Hsinchu, Taiwan 30076, R.O.C.	1,813,771,110	Sales and manufacturing of integrated circuits
Wavetek Microelectronics Investment (Samoa) Limited	2013.08.28	Le Sanalele Complex, Ground Floor, Vaea Street, Saleufi, Apia, Samoa	46,275,000	Investment holding
Wavetek Microelectronics Corporation (USA)	2013.09.26	488 De Guigne Drive, Sunnyvale, CA 94085, USA	1,855,140	Sales and marketing service
Best Elite International Limited	2001.07.12	P.O. Box 957, Offshore Incorporations Centre, Road Town, Tortola, B.V.I.	7,388,888,122	Investment holding
Infoshine Technology Limited	2002.02.12	P.O. Box 957, Offshore Incorporations Centre, Road Town, Tortola, B.V.I.	10,945,326,000	Investment holding
Oakwood Associates Limited	2002.02.12	P.O. Box 957, Offshore Incorporations Centre, Road Town, Tortola, B.V.I.	10,945,326,000	Investment holding
HeJian Technology (Suzhou) Co., Ltd.	2001.11.23	No. 333, Xinghua Street, Suzhou Industrial Park, Suzhou, Jiangsu Province 215025, China	14,342,758,387	Sales and manufacturing of integrated circuits
UnitedDS Semiconductor (Shandong) Co., Ltd.	2014.03.25	17th Floor, Building3, Aosheng Plaza, 1166 Xinluo Ave., Jinan High-Tech Development Zone, Shandong Province, China	134,253,000	Design support of integrated circuits
Omni Global Limited	2013.07.02	Maystar Chambers, P.O. Box 3269, Apia, Samoa	130,160,000	Investment holding
United Microtechnology Corporation (New York)	2013.07.08	488 Deguigne Drive, Sunnyvale, CA 94085, USA	29,373,050	Research & development
United Microtechnology Corporation (California)	2014.12.10	488 Deguigne Drive, Sunnyvale, CA 94085, USA	30,919,000	Research & development
United Semiconductor (Xiamen) Co., Ltd.	2014.10.01	No. 899, Wan Jia Chun Road, Xiang An, Xiamen, Fujian Province, China	56,823,897,929	Sales and manufacturing of integrated circuits
United Microchip Corporation	2015.02.04	Suite 102, Cannon Place, P.O. Box 712 North Sound Rd., George Town, Grand Cayman, KY1-9006	29,874,878,250	Investment holding
UMC Technology Japan Co., Ltd.	2016.04.01	15F Akihabara Centerplace Bldg., 1 Kanda Aioi-cho, Chiyoda-ku, Tokyo 101-0029, Japan	4,961,250	Semiconductor manufacturing technology development and consulting services
Sino Paragon Limited	2016.06.06	Maystar Chambers, P.O. Box 3269, Apia, Samoa	83,204,400	Investment holding
United Semiconductor Japan Co., Ltd.	2014.09.18	2000, Mizono, Tado-cho, Kuwana-shi, Mie, Japan	2,835,000,000	Sales and manufacturing of integrated circuits

Note: The data is dated December 31, 2019.

Summary of Affiliated Enterprises (Continue)

Data for Common Shareholders of Treated-as Controlled Companies and Affiliates

None.

Business of United Microelectronics Corporation (UMC) and Its Affiliated Enterprises

The business of UMC and its affiliated enterprises includes semiconductor wafer manufacturing, electronics, optronics, investment activities, insurance, and trade.

Summary of Affiliated Enterprises (Continue)

Directors, Supervisors and Presidents of Affiliated Enterprises

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
UMC Group (USA)	Director	Jason Wang	—	—
	Director	Chitung Liu	—	—
United Microelectronics (Europe) B.V.	Director	Stan Hung	—	—
	Director	Jason Wang	—	—
UMC Capital Corp.	Chairman	Stan Hung	—	—
	Director	SC Chien	—	—
	Director	Jason Wang	—	—
	Director	Chitung Liu	—	—
	Director	Chih Chiang Peng	—	—
UMC Group Japan	Director	Yen Huang	—	—
	Director	Jinhong Lin	—	—
UMC Korea Co., Ltd.	Director	Carissa Tseng	—	—
TLC Capital Co., Ltd.	Chairman	United Microelectronics Corporation Representative: Stan Hung	397,956,300 —	100.00 —
	Director	United Microelectronics Corporation Representative: SC Chien	397,956,300 —	100.00 —
	Director	United Microelectronics Corporation Representative: Jason Wang	397,956,300 —	100.00 —
	Director	United Microelectronics Corporation Representative: Chitung Liu	397,956,300 —	100.00 —
	Director	United Microelectronics Corporation Representative: Chih Chiang Peng	397,956,300 —	100.00 —
	Supervisor	United Microelectronics Corporation Representative: Jinhong Lin	397,956,300 —	100.00 —

Summary of Affiliated Enterprises (Continue)

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
Fortune Venture Capital Corp.	Chairman	United Microelectronics Corporation Representative: Stan Hung	401,734,448 —	100.00 —
	Director	United Microelectronics Corporation Representative: SC Chien	401,734,448 —	100.00 —
	Director	United Microelectronics Corporation Representative: Jason Wang	401,734,448 —	100.00 —
	Director	United Microelectronics Corporation Representative: Chitung Liu	401,734,448 —	100.00 —
	Director and President	United Microelectronics Corporation Representative: Chih Chiang Peng	401,734,448 —	100.00 —
	Supervisor	United Microelectronics Corporation Representative: Bellona Chen	401,734,448 —	100.00 —
Green Earth Limited	Director	Chitung Liu	—	—
UMC Investment (Samoa) Limited	Director	United Microelectronics Corporation	1,520,000	100.00
NexPower Technology Corp.	Chairman	United Microelectronics Corporation Representative: Jinhong Lin	33,998,269 —	47.75 —
	Director	United Microelectronics Corporation Representative: Eric Zhou	33,998,269 —	47.75 —
	Director	United Microelectronics Corporation Representative: Watson Tsai	33,998,269 —	47.75 —
	Supervisor	Fortune Venture Capital Corp. Representative: Tachih Lung	23,826,545 —	33.46 —

Summary of Affiliated Enterprises (Continue)

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
UMC Capital (USA)	Director and President	Jason Wang	—	—
	Director	Stan Hung	—	—
ECP Vita Pte. Ltd.	Director	Chitung Liu	—	—
	Director	Bellona Chen	—	—
	Director	Vic Yen	—	—
	Director	Sofia Wang	—	—
Soaring Capital Corp.	Director	TLC Capital Co., Ltd.	900,000	100.00
Unitruth Advisor (Shanghai) Co., Ltd.	Director	Chih Chiang Peng	—	—
Tera Energy Development Co., Ltd.	Chairman	Fortune Venture Capital Corp.	18,655,091	100.00
		Representative: Steven Sheng	—	—
	Director	Fortune Venture Capital Corp.	18,655,091	100.00
		Representative: Su Ying Shih	—	—
	Director	Fortune Venture Capital Corp.	18,655,091	100.00
		Representative: Jinhong Lin	—	—
Supervisor	Fortune Venture Capital Corp.	18,655,091	100.00	
Everrich Energy Investment (HK) Limited	Director	Tera Energy Development Co., Ltd.	750,000	100.00
	Director	Jinhong Lin	—	—
Everrich (Shandong) Energy Co., Ltd.	Executive Director	Steven Sheng	—	—
	Supervisor	Su Ying Shih	—	—

Summary of Affiliated Enterprises (Continue)

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
Wavetek Microelectronics Corporation	Chairman	United Microelectronics Corporation	144,948,118	79.83
		Representative: Wen-Yang Chen	—	—
	Director	United Microelectronics Corporation	144,948,118	79.83
		Representative: SC Chien	—	—
	Director	United Microelectronics Corporation	144,948,118	79.83
		Representative: Jason Wang	—	—
	Supervisor	Chih Chiang Peng	15,001	0.00
Wavetek Microelectronics Investment (Samoa) Limited	Director	Wen-Yang Chen	—	—
Wavetek Microelectronics Corporation (USA)	Director	Chian Gauh Shih	—	—
Best Elite International Limited	Director	Chau-Shen Yu	—	—
	Director	Jeremy Wang	—	—
	Director	Eric Chen	—	—
	Director	Jinhong Lin	—	—
Infoshine Technology Limited	Director	Best Elite International Limited	—	—
Oakwood Associates Limited	Director	Infoshine Technology Limited	—	—

Summary of Affiliated Enterprises (Continue)

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
HeJian Technology (Suzhou) Co., Ltd.	Chairman	Stan Hung	—	—
	Director	Chau-Shen Yu	—	—
	Director	Ming-Cheng Kao	—	—
	Director	Chitung Liu	—	—
	Director	Wan Ling Cheng	—	—
	Director	Jinhong Lin	—	—
	Independent Director	Qingheng An	—	—
	Independent Director	Feng-I Lin	—	—
	Independent Director	Wenli Zhang	—	—
	Supervisor	Jeremy Wang	—	—
UnitedDS Semiconductor(Shandong) Co., Ltd.	Supervisor	Ming-Chun Chu	—	—
	Supervisor	I-Cheng Lu	—	—
Omni Global Limited	Executive Director	Steven Sheng	—	—
	Supervisor	Archi Chen	—	—
United Microtechnology Corporation (New York)	Director	Chitung Liu	—	—
	Director	Jason Wang	—	—
United Microtechnology Corporation (California)	Director	Chitung Liu	—	—
	Director	Jason Wang	—	—

Summary of Affiliated Enterprises (Continue)

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
United Semiconductor (Xiamen) Co., Ltd.	Chairman	Chau-Shen Yu	—	—
	Vice Chairman	Chih-Ching Hsu	—	—
	Director	Jinhong Lin	—	—
	Director	Wayne Tan	—	—
	Director	T C Chen	—	—
	Director	I Cheng Lu	—	—
	Director	Yi Yan Hong	—	—
	Director	Guo Dong Di	—	—
	Director	Tao Yang	—	—
	Supervisor	Rong Fang Li	—	—
Supervisor	Angel Sun	—	—	
United Microchip Corporation	Director	Chitung Liu	—	—
UMC Technology Japan Co., Ltd.	Director	Chitung Liu	—	—
	Director	Jinhong Lin	—	—
Sino Paragon Limited	Director	Jason Wang	—	—
	Director	Chitung Liu	—	—
United Semiconductor Japan Co., Ltd.	Chairman	S S Hong	—	—
	Director	Ming Hsu	—	—
	Director	Chitung Liu	—	—
	Director	James Wang	—	—
	Director	Michiari Kawano	—	—
	Director	Koichi Onomura	—	—
	Director	Tatsuya Deguchi	—	—
	Supervisor	Yen Huang	—	—

Note: The data is dated December 31, 2019.

Summary of Affiliated Enterprises (Continue)

Summarized Operating Results of UMC Subsidiaries

In Thousand NTD

Company	Capital	Assets	Liabilities	Net Worth	Operating Revenues	Operating Income (Loss)	Net Income (Loss)	Earnings (Loss) Per Share (NTD)
UMC Group (USA)	508,231	8,663,813	6,834,067	1,829,746	49,228,134	66,001	77,135	4.69
United Microelectronics (Europe) B.V.	119,821	166,334	27,489	138,845	48,625	3,648	2,803	311.45
UMC Capital Corp.	2,215,748	3,882,222	879	3,881,343	507,496	342,966	342,966	4.79
UMC Group Japan	8,505	883,795	774,236	109,559	4,329,195	73,065	47,467	47,466.78
UMC Korea Co., Ltd.	14,575	24,520	3,532	20,988	15,001	1,496	979	8.90
TLC Capital Co., Ltd.	3,979,563	4,325,652	51,740	4,273,912	311,587	22,513	24,565	0.06
Fortune Venture Capital Corp.	4,017,344	4,738,118	21,773	4,716,345	84,417	(136,390)	(119,265)	(0.26)
Green Earth Limited	29,988,444	11,643,953	-	11,643,953	-	-	(5,124,276)	(5.24)
UMC Investment (Samoa) Limited	43,519	42,022	-	42,022	-	-	(886)	(0.58)
NexPower Technology Corp.	711,986	847,694	1,142,660	(294,966)	27,225	(301,265)	(420,302)	(5.90)
UMC Capital (USA)	6,184	17,222	151	17,071	922	44	191	0.96
ECP Vita Pte. Ltd.	278,271	583,465	30,829	552,636	32,646	30,054	29,580	3.29
Soaring Capital Corp.	27,351	10,264	-	10,264	1	(3,556)	(3,560)	(3.96)
Unitruth Advisor (Shanghai) Co., Ltd.	24,735	14,279	3,758	10,521	5,314	(3,404)	(3,529)	NA
Tera Energy Development Co., Ltd.	186,551	65,700	4,462	61,238	5,537	1,141	(22,063)	(1.18)
Everrich Energy Investment (HK) Limited	25,988	38,509	40	38,469	-	(52)	7,443	9.92
Everrich (Shandong) Energy Co., Ltd.	23,189	50,723	11,033	39,690	40,417	2,816	7,505	NA

Summary of Affiliated Enterprises (Continue)

In Thousand NTD								
Company	Capital	Assets	Liabilities	Net Worth	Operating Revenues	Operating Income (Loss)	Net Income (Loss)	Earnings (Loss) Per Share (NTD)
Wavetek Microelectronics Corporation	1,813,771	1,639,434	1,118,591	520,843	1,631,401	(257,507)	(279,115)	(1.55)
Wavetek Microelectronics Investment (Samoa) Limited	46,275	3,680	1,556	2,124	-	(7,307)	(6,920)	(4.61)
Wavetek Microelectronics Corporation (USA)	1,855	3,187	327	2,860	7,244	348	237	3.94
Best Elite International Limited	7,388,888	23,186,048	3,043	23,183,005	-	(5,422)	870,821	1.31
Infoshine Technology Limited	10,945,326	23,113,468	-	23,113,468	-	-	877,676	NA
Oakwood Associates Limited	10,945,326	23,113,468	-	23,113,468	-	(8,738)	877,676	NA
HeJian Technology (Suzhou) Co., Ltd.	14,342,758	26,544,484	2,821,231	23,723,253	10,422,268	2,269,111	908,836	0.28
UnitedDS Semiconductor (Shandong) Co., Ltd.	134,253	281,440	48,828	232,612	194,709	38,042	36,889	NA
Omni Global Limited	130,160	611,890	21,188	590,702	-	(87)	31,312	7.28
United Microtechnology Corporation (New York)	29,373	31,213	62	31,151	66	4	20	521.55
United Microtechnology Corporation (California)	30,919	37,229	1,020	36,209	25,984	1,471	1,583	39,595.79
United Semiconductor (Xiamen) Co., Ltd.	56,823,898	83,294,064	59,319,295	23,974,769	8,572,759	(7,609,390)	(10,098,778)	NA
United Microchip Corporation	29,874,878	11,617,342	-	11,617,342	-	(20)	(5,124,089)	(5.26)
UMC Technology Japan Co., Ltd.	4,961	9,232	51	9,181	774	45	(169)	(48.25)
Sino Paragon Limited	83,204	121,840	-	121,840	-	(27)	940	0.36
United Semiconductor Japan Co., Ltd.	2,835,000	23,676,772	5,544,096	18,132,676	4,277,323	270,518	270,787	2.33

Note 1: USD:NTD=1:30.919, JPY:NTD=1:0.2835, EUR:NTD=1:34.615, RMB:NTD=1:4.4751, KRW:NTD=1:0.02650.

Note 2: United Semiconductor Japan Co., Ltd. became consolidated entity on October 1, 2019.

Issuance of Private Placement Securities

None.

Acquisition or Disposal of UMC Shares by Subsidiaries

In Thousand NTD, Shares

Subsidiary	Paid-in Capital	Source of Capital	Holding % by the Company	Acquisition or Disposal Date	Shares Acquired and Amount	Disposal Shares and Amount	Profit/Loss	As of Annual Report Printing Date	
								Shares	Amount
Fortune Venture Capital Corp.	4,017,344	New shares for cash	100.00	2020	None	None	None	16,078,737	105,114
				2019	None	None	None	16,078,737	105,114

Note: (1) The data is dated February 26, 2020.

(2) None of the above companies pledged UMC shares as collateral.

(3) The Company did not provide endorsements or guarantees to these subsidiaries.

(4) The Company did not provide loans to these subsidiaries.

Other Necessary Supplements

None.

Disclosures of Events Which May Have a Significant Influence on Stockholders' Equity or Share Price, in Compliance with Item 3, Paragraph 2 In Article 36 of the Securities and Exchange Law of the R.O.C. during 2019 and as of the Annual Report Printing Date

None.

Financial Review

184	Condensed Balance Sheets
186	Condensed Statements of Comprehensive Income
188	Financial Analysis
192	Audit Committee's Review Report
193	Financial Statements – Consolidated
269	Financial Statements – Parent Company

Condensed Balance Sheets

Condensed Balance Sheets-Consolidated

In Thousand NTD

Item		2019	2018	2017	2016	2015
Current assets		153,757,141	141,193,432	139,160,486	110,469,594	94,816,521
Property, plant and equipment		150,374,096	172,846,595	205,741,681	224,983,404	186,433,395
Intangible assets		5,198,247	2,991,804	3,787,509	4,088,303	4,504,088
Other assets		60,857,881	47,573,075	45,409,486	47,113,881	51,612,806
Total assets		370,187,365	364,604,906	394,099,162	386,655,182	337,366,810
Current liabilities	Before distribution	72,714,322	49,899,337	88,061,070	71,978,462	48,245,518
	After distribution	*	56,815,442	96,618,093	78,090,621	55,152,491
Non-current liabilities		90,258,621	108,169,078	92,000,508	95,935,096	60,303,889
Total liabilities	Before distribution	162,972,943	158,068,415	180,061,578	167,913,558	108,549,407
	After distribution	*	164,984,520	188,618,601	174,025,717	115,456,380
Equity attributable to the parent company		206,804,357	206,069,723	213,080,776	216,579,895	226,790,338
Capital		117,575,798	124,243,187	126,243,187	126,243,187	127,581,329
Additional paid-in capital		39,550,394	40,399,363	40,858,350	40,997,092	41,651,569
Retained earnings	Before distribution	60,820,280	61,588,543	48,065,899	47,655,176	50,707,642
	After distribution	*	54,672,438	39,508,876	41,543,017	43,800,669
Other components of equity		(11,022,314)	(14,513,940)	2,632,377	6,403,477	10,675,404
Treasury stock		(119,801)	(5,647,430)	(4,719,037)	(4,719,037)	(3,825,606)
Non-controlling interests		410,065	466,768	956,808	2,161,729	2,027,065
Total equity	Before distribution	207,214,422	206,536,491	214,037,584	218,741,624	228,817,403
	After distribution	*	199,620,386	205,480,561	212,629,465	221,910,430

Note 1 : * Subject to change based on resolutions of the 2020 shareholders' meeting.

Note 2 : The company listed on the TWSE or traded on the TPEx shall include in its analysis the updated financial data which are audited or reviewed by a CPA for the most recent period up to the publication date of the annual report: None.

Condensed Balance Sheets-Parent Company

In Thousand NTD

Item	2019	2018	2017	2016	2015
Current assets	107,866,299	101,335,770	106,676,034	82,558,263	72,211,211
Property, plant and equipment	79,486,445	101,115,727	127,101,974	157,573,131	169,031,687
Intangible assets	4,082,826	2,886,159	3,459,829	4,015,370	4,399,963
Other assets	111,315,394	93,849,564	84,756,630	82,908,196	80,159,888
Total assets	302,750,964	299,187,220	321,994,467	327,054,960	325,802,749
Current liabilities	43,764,772	26,797,263	58,655,702	47,397,892	41,441,501
Before distribution					
After distribution	*	33,713,368	67,212,725	53,510,051	48,348,474
Non-current liabilities	52,181,835	66,320,234	50,257,989	63,077,173	57,570,910
Total liabilities	95,946,607	93,117,497	108,913,691	110,475,065	99,012,411
Before distribution					
After distribution	*	100,033,602	117,470,714	116,587,224	105,919,384
Equity	206,804,357	206,069,723	213,080,776	216,579,895	226,790,338
Capital	117,575,798	124,243,187	126,243,187	126,243,187	127,581,329
Additional paid-in capital	39,550,394	40,399,363	40,858,350	40,997,092	41,651,569
Retained earnings	60,820,280	61,588,543	48,065,899	47,655,176	50,707,642
Before distribution					
After distribution	*	54,672,438	39,508,876	41,543,017	43,800,669
Other components of equity	(11,022,314)	(14,513,940)	2,632,377	6,403,477	10,675,404
Treasury stock	(119,801)	(5,647,430)	(4,719,037)	(4,719,037)	(3,825,606)
Total equity	206,804,357	206,069,723	213,080,776	216,579,895	226,790,338
Before distribution					
After distribution	*	199,153,618	204,523,753	210,467,736	219,883,365

Note 1 : * Subject to change based on resolutions of the 2020 shareholders' meeting.

Note 2 : The company listed on the TWSE or traded on the TPEX shall include in its analysis the updated financial data which are audited or reviewed by a CPA for the most recent period up to the publication date of the annual report: None.

Condensed Statements of Comprehensive Income

Condensed Statements of Comprehensive Income-Consolidated

In Thousand NTD

Item	2019	2018	2017	2016	2015
Operating revenues	148,201,641	151,252,571	149,284,706	147,870,124	144,830,421
Gross profit	21,314,972	22,840,027	27,057,758	30,379,430	31,768,527
Operating income	4,689,850	5,797,232	6,568,321	6,193,576	10,835,657
Non-operating income and expenses	1,045,787	(3,612,833)	1,230,101	(1,346,938)	2,876,488
Income from continuing operations before income tax	5,735,637	2,184,399	7,798,422	4,846,638	13,712,145
Net income	6,128,767	2,643,052	6,631,265	3,863,075	12,835,651
Other comprehensive income (loss), net of tax	3,408,785	949,944	(4,034,355)	(4,364,780)	(1,794,644)
Total comprehensive income (loss)	9,537,552	3,592,996	2,596,910	(501,705)	11,041,007
Net income attributable to stockholders of the parent	9,707,614	7,072,990	9,628,734	8,315,660	13,448,624
Net income attributable to non-controlling interests	(3,578,847)	(4,429,938)	(2,997,469)	(4,452,585)	(612,973)
Comprehensive income attributable to stockholders of the parent	13,131,612	8,126,828	5,705,980	3,983,198	11,716,094
Comprehensive income attributable to non-controlling interests	(3,594,060)	(4,533,832)	(3,109,070)	(4,484,903)	(675,087)
Earnings per share (NTD)	0.82	0.58	0.79	0.68	1.08

Note 1 : EPS was calculated based on weighted average shares outstanding for the period.

Note 2 : The company listed on the TWSE or traded on the TPEX shall include in its analysis the updated financial data which are audited or reviewed by a CPA for the most recent period up to the publication date of the annual report: None.

Condensed Statements of Comprehensive Income-Parent Company

In Thousand NTD

Item	2019	2018	2017	2016	2015
Operating revenues	123,622,436	132,834,602	132,179,198	135,592,136	130,685,516
Gross profit	27,161,230	30,548,191	29,718,771	28,358,887	28,686,022
Operating income	10,281,974	12,790,237	11,538,896	9,605,769	10,913,811
Non-operating income and expenses	(1,148,875)	(6,581,581)	(1,114,125)	(594,179)	3,032,406
Income from continuing operations before income tax	9,133,099	6,208,656	10,424,771	9,011,590	13,946,217
Net income	9,707,614	7,072,990	9,628,734	8,315,660	13,448,624
Other comprehensive income (loss), net of tax	3,423,998	1,053,838	(3,922,754)	(4,332,462)	(1,732,530)
Total comprehensive income	13,131,612	8,126,828	5,705,980	3,983,198	11,716,094
Earnings per share (NTD)	0.82	0.58	0.79	0.68	1.08

Note 1 : EPS was calculated based on weighted average shares outstanding for the period.

Note 2 : The company listed on the TWSE or traded on the TPEx shall include in its analysis the updated financial data which are audited or reviewed by a CPA for the most recent period up to the publication date of the annual report: None.

Auditors' Opinions from 2015 to 2019

Year	CPA	Audit Opinion
2015	Shao-Pin Kuo, Meng-Lin Song	Unqualified-Modified Opinion
2016	Shao-Pin Kuo, Meng-Lin Song	Unqualified Opinion with Emphasis of Matter Paragraphs or Other Matter Paragraphs
2017	Shao-Pin Kuo, Wan-Ju Chiu	Unqualified Opinion with Emphasis of Matter Paragraphs or Other Matter Paragraphs
2018	Wan-Ju Chiu, Hsin-Min Hsu	Unqualified Opinion with Emphasis of Matter Paragraphs or Other Matter Paragraphs
2019	Wan-Ju Chiu, Hsin-Min Hsu	Unqualified Opinion with Emphasis of Matter Paragraphs or Other Matter Paragraphs

Financial Analysis

Financial Analysis- Consolidated

Item		2019	2018	2017	2016	2015
Capital structure	Debt ratio (%)	44.02	43.35	45.69	43.43	32.18
	Long-term funds to property, plant and equipment (%)	169.65	158.30	129.95	124.22	148.23
Liquidity	Current ratio (%)	211.45	282.96	158.03	153.48	196.53
	Quick ratio (%)	172.13	222.80	121.72	114.73	155.43
	Times interest earned (times)	2.96	1.79	4.24	4.33	16.35
Operating performance	Average receivables turnover (times)	5.98	6.75	6.78	6.98	6.95
	Days sales outstanding	61	54	54	52	53
	Average inventory turnover (times)	6.36	7.04	6.93	6.78	6.88
	Average payables turnover (times)	16.19	19.26	18.26	18.34	18.65
	Average inventory turnover days	57	52	53	54	53
	Property, plant and equipment turnover (times)	0.92	0.80	0.69	0.72	0.82
	Total assets turnover (times)	0.40	0.40	0.38	0.41	0.45
Profitability	Return on assets (%)	2.31	1.28	2.21	1.35	4.07
	Return on stockholders' equity attributable to the parent company (%)	4.70	3.37	4.48	3.75	6.00
	Pre-tax income to paid-in capital (%)	7.92	5.32	8.54	7.35	11.20
	Net profit margin (%)	4.14	1.75	4.44	2.61	8.86
	Earnings per share (NTD)	0.82	0.58	0.79	0.68	1.08
Cash Flow	Cash flow ratio (%)	75.51	102.08	59.59	64.53	123.92
	Cash flow adequacy ratio (%)	96.56	86.78	81.49	75.74	89.02
	Cash flow reinvestment ratio (%)	4.54	4.03	4.68	4.11	5.93
Leverage	Operating leverage	23.16	19.11	16.86	17.77	9.78
	Financial leverage	2.67	1.91	1.58	1.25	1.05

Analysis of changes of over 20% between 2018 and 2019:

1. Current ratio: Due to increase in current portion of long-term liabilities.
2. Quick ratio: Due to increase in current portion of long-term liabilities.
3. Times interest earned: Due to increase in income before income tax.
4. Return on assets: Due to increase in net income.
5. Return on stockholders' equity attributable to the parent company: Due to increase in net income attributable to stockholders of the parent.
6. Pre-tax income to paid-in capital: Due to increase in income before income tax attributable to stockholders of the parent.
7. Net profit margin: Due to increase in net income.
8. Earnings per share: Due to increase in net income attributable to stockholders of the parent.
9. Cash flow reinvestment ratio: Due to increase in current portion of long-term liabilities.
10. Operating leverage: Due to decrease in operating income.
11. Financial leverage: Due to decrease in operating income.

Financial Analysis (Continue)

Note 1 : The calculation of EPS was based on weighted average shares outstanding for the year.

Note 2 : The calculation formulas of financial analysis are listed as follows:

1. Capital structure

(1) Debt ratio = total liabilities / total assets

(2) Long-term funds to property, plant and equipment = (total equity + bonds payable + long-term loans) / net worth of property, plant and equipment

2. Liquidity

(1) Current ratio = current assets / current liabilities

(2) Quick ratio = (current assets – inventory – prepaid expenses – non-current assets held for sale – other current assets) / current liabilities

(3) Times interest earned = income before interest and tax / interest expenses

3. Operating performance

(1) Average receivables (including accounts receivable and notes receivable arising from business operations) turnover = net sales / average receivables (including accounts receivable and notes receivable arising from business operations) for each period

(2) Days sales outstanding = 365 / average receivables turnover

(3) Average inventory turnover = cost of sales / average inventory

(4) Average payables (including accounts payable and notes payable arising from business operations) turnover = cost of sale / average payables (including accounts payable and notes payable arising from business operations) for each period

(5) Average inventory turnover days = 365 / average inventory turnover

(6) Property, plant and equipment turnover = net sales / average net worth of property, plant and equipment

(7) Total assets turnover = net sales / average total assets

4. Profitability

(1) Return on assets = [net income + interest expenses (1- tax rate)] / average total assets

(2) Return on stockholders' equity attributable to the parent company = net income attributable to stockholders of the parent / average total equity attributable to the parent company

(3) Pre-tax income to paid-in capital = income before tax attributable to stockholders of the parent / paid-in capital

(4) Net profit margin = net income / net sales

(5) Earnings per share = (net income attributable to stockholders of the parent – preferred shares dividends) / weighted average number of outstanding shares

5. Cash flow

(1) Cash flow ratio = net cash provided by operating activities / current liabilities

(2) Cash flow adequacy ratio = five-year sum of net cash provided by operating activities / five-year sum of capital expenditures, inventory increase and cash dividend

(3) Cash flow reinvestment ratio = (net cash provided by operating activities – cash dividend) / (gross property, plant and equipment + long-term investments + other non-current assets + working capital)

6. Leverage

(1) Operating leverage = (net operating revenue – variable operating costs and expenses) / operating income

(2) Financial leverage = operating income / (operating income – interest expenses)

Note 3 : The company listed on the TWSE or traded on the TPEX shall include in its analysis the updated financial data which are audited or reviewed by a CPA for the most recent period up to the publication date of the annual report: None.

Financial Analysis (Continue)

Financial Analysis- Parent Company

Item		2019	2018	2017	2016	2015
Capital structure	Debt ratio (%)	31.69	31.12	33.82	33.78	30.39
	Long-term funds to property, plant and equipment (%)	288.59	242.91	186.51	160.90	161.31
Liquidity	Current ratio (%)	246.47	378.16	181.87	174.18	174.25
	Quick ratio (%)	204.33	313.86	150.22	139.84	131.82
	Times interest earned (times)	12.16	9.14	12.13	11.00	18.45
Operating performance	Average receivables turnover (times)	5.95	6.02	5.69	6.50	6.99
	Days sales outstanding	61	61	64	56	52
	Average inventory turnover (times)	6.12	6.73	6.90	7.00	6.77
	Average payables turnover (times)	16.41	18.60	18.47	19.18	18.83
	Average inventory turnover days	60	54	53	52	54
	Property, plant and equipment turnover (times)	1.37	1.16	0.93	0.83	0.81
	Total assets turnover (times)	0.41	0.43	0.41	0.42	0.42
Profitability	Return on assets (%)	3.44	2.47	3.21	2.73	4.41
	Return on equity (%)	4.70	3.37	4.48	3.75	6.00
	Pre-tax income to paid-in capital (%)	7.77	5.00	8.26	7.14	10.93
	Net profit margin (%)	7.85	5.32	7.28	6.13	10.29
	Earnings per share (NTD)	0.82	0.58	0.79	0.68	1.08
Cash Flow	Cash flow ratio (%)	106.12	182.12	102.75	119.78	132.17
	Cash flow adequacy ratio (%)	155.16	135.24	121.08	97.08	92.02
	Cash flow reinvestment ratio (%)	4.09	4.20	5.95	5.56	5.55
Leverage	Operating leverage	8.88	7.82	8.70	10.55	8.99
	Financial leverage	1.09	1.06	1.09	1.08	1.04

Analysis of changes of over 20% between 2018 and 2019:

1. Current ratio, Quick ratio and Cash flow ratio: Due to increase in current liabilities.
2. Times interest earned, Return on assets, Return on equity, Pre-tax income to paid-in capital, Net profit margin and Earnings per share: Due to increase in income before tax and net income.

Financial Analysis (Continue)

Note 1 : The calculation of EPS was based on weighted average shares outstanding for the year.

Note 2 : The calculation formulas of financial analysis are listed as follows:

1. Capital structure

(1) Debt ratio = total liabilities / total assets

(2) Long-term funds to property, plant and equipment = (total equity + bonds payable + long-term loans) / net worth of property, plant and equipment

2. Liquidity

(1) Current ratio = current assets / current liabilities

(2) Quick ratio = (current assets – inventory – prepaid expenses – non-current assets held for sale – other current assets) / current liabilities

(3) Times interest earned = income before interest and tax / interest expenses

3. Operating performance

(1) Average receivables (including accounts receivable and notes receivable arising from business operations) turnover = net sales / average receivables (including accounts receivable and notes receivable arising from business operations) for each period

(2) Days sales outstanding = 365 / average receivables turnover

(3) Average inventory turnover = cost of sales / average inventory

(4) Average payables (including accounts payable and notes payable arising from business operations) turnover = cost of sale / average payables (including accounts payable and notes payable arising from business operations) for each period

(5) Average inventory turnover days = 365 / average inventory turnover

(6) Property, plant and equipment turnover = net sales / average net worth of property, plant and equipment

(7) Total asset turnover = net sales / average total assets

4. Profitability

(1) Return on assets = [net income + interest expenses (1- tax rate)] / average total assets

(2) Return on equity = net income / average total equity

(3) Pre-tax income to paid-in capital = income before tax / paid-in capital

(4) Net profit margin = net income / net sales

(5) Earnings per share = (net income – preferred shares dividends) / weighted average number of outstanding shares

5. Cash flow

(1) Cash flow ratio = net cash provided by operating activities / current liabilities

(2) Cash flow adequacy ratio = five-year sum of net cash provided by operating activities / five-year sum of capital expenditures, inventory increase and cash dividend

(3) Cash flow reinvestment ratio = (net cash provided by operating activities – cash dividend) / (gross property, plant and equipment + long-term investments + other non-current assets + working capital)

6. Leverage

(1) Operating leverage = (net operating revenue – variable operating costs and expenses) / operating income

(2) Financial leverage = operating income / (operating income – interest expenses)

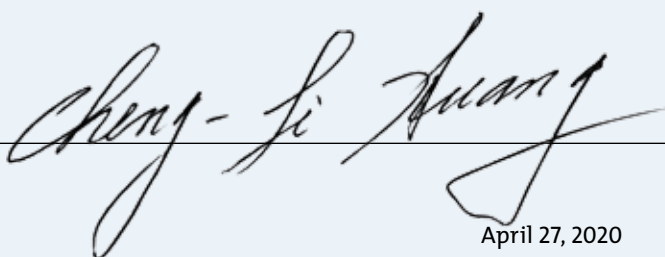
Note 3 : The company listed on the TWSE or traded on the TPEX shall include in its analysis the updated financial data which are audited or reviewed by a CPA for the most recent period up to the publication date of the annual report: None.

Audit Committee's Review Report

The Board of Directors has prepared and submitted to us the Company's 2019 Business Report, Financial Statements, and proposal for earnings distribution. Financial Statements were audited by Ernst & Young and they issued an audited report accordingly. We, as the Audit Committee of the Company, have reviewed the Business Report, Financial Statements, and proposal for earnings distribution and do not find any discrepancies. According to Article 14-4 of the Securities and Exchange Act and Article 219 of the Company Act, we hereby submit this report.

To United Microelectronics Corporation 2020 Annual General Shareholders' Meeting

Chairman of the Audit Committee: Cheng-Li Huang



April 27, 2020

Independent Auditors' Report

To United Microelectronics Corporation

Opinion

We have audited the accompanying consolidated balance sheets of United Microelectronics Corporation and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of comprehensive income, changes in equity and cash flows for the years ended December 31, 2019 and 2018, and notes to the consolidated financial statements, including the summary of significant accounting policies (together "the consolidated financial statements").

In our opinion, based on our audits and the reports of other auditors (please refer to the *Other Matter – Making Reference to the Audits of Component Auditors* section of our report), the consolidated financial statements referred to above present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2019 and 2018, and their consolidated financial performance and cash flows for the years ended December 31, 2019 and 2018, in conformity with the requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers and International Financial Reporting Standards, International Accounting Standards, Interpretations developed by the International Financial Reporting Interpretations Committee or the former Standing Interpretations Committee as endorsed and became effective by 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 (the "Norm"), and we have fulfilled our other ethical responsibilities in accordance with the Norm. Based on our audits and the reports of other auditors, we believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

**UNITED MICROELECTRONICS CORPORATION
AND SUBSIDIARIES
CONSOLIDATED FINANCIAL STATEMENTS
WITH REPORT OF INDEPENDENT AUDITORS
FOR THE YEARS ENDED
DECEMBER 31, 2019 AND 2018**

Address: No. 3 Li-Hsin Road II, Hsinchu Science Park, Hsinchu City, Taiwan, R.O.C.
Telephone: 886-3-578-2258

The reader is advised that these consolidated financial statements have been prepared originally in Chinese. In the event of a conflict between these financial statements and the original Chinese version or difference in interpretation between the two versions, the Chinese language financial statements shall prevail.

Key Audit Matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of 2019 consolidated financial statements. 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.

Valuation for slow-moving inventories

As of December 31, 2019, the Company's net inventories amounted to NT\$21,715 million. As the semiconductor industry is characterized by rapid changes in technology, management had to evaluate and estimate a reserve for slow-moving inventories that are expected to be written-off or otherwise disposed of at a future date. Auditing the valuation for slow-moving inventories was complex due to judgement involved in the Company's estimation of the appropriate amount of the slow-moving inventories reserve, utilizing key inputs including historical usage, write-off activities and inventory aging. Therefore, we consider this is a key audit matter.

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls over the Company's slow-moving inventories reserve process. For example, we tested the control over management's review of the reserve method and the key inputs used in the valuation process. To test the slow-moving inventories reserve, our audit procedures included, amongst others, an evaluation of the appropriateness of management's determination of inventory aging and testing the accuracy and completeness of the underlying data such as historical usage and write-off activities used in determining the inventories reserve percentages. We also recalculated inventory reserve for the application of the reserve percentages to the inventory aging categories.

In addition, we evaluated the adequacy of disclosures of inventories. Please refer to Notes 5 and 6 to the Company's consolidated financial statements.

Other Matter – Making Reference to the Audits of Component Auditors

We did not audit the financial statements of certain associates and joint ventures accounted for under the equity method. Those financial statements were audited by other auditors, whose reports thereon have been furnished to us, and our opinions expressed herein are based solely on the reports of other auditors. These associates and joint ventures under equity method amounted to NT\$11,704 million and NT\$8,714 million, representing 3.16% and 2.39% of consolidated total assets as of December 31, 2019 and 2018, respectively. The related shares of profits (loss) from the associates and joint ventures under the equity method amounted to NT\$1,231 million and NT\$(751) million, representing 21.46% and (34.37)% of the consolidated income before tax for the years ended December 31, 2019 and 2018, respectively, and the related shares of other comprehensive income (loss) from the associates and joint ventures under the equity method amounted to NT\$1,184 million and NT\$(225) million, representing 12.41% and (6.27)% of the consolidated total comprehensive income (loss) for the years ended December 31, 2019 and 2018, respectively.

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 requirements of the Regulations Governing the Preparation of Financial Reports by Securities Issuers and International Financial Reporting Standards, International Accounting Standards, Interpretations developed by the International Financial Reporting Interpretations Committee or the former Standing Interpretations Committee as endorsed and became effective by 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 ability to continue as a going concern of the Company, 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 audit committee or supervisors, are responsible for overseeing the financial reporting process of the Company.

Auditor's 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 auditor's 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 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 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 internal control of the Company.
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 ability to continue as a going concern of the Company. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's 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 auditor's 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 accompanying notes, 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 2019 consolidated financial statements and are therefore the key audit matters. We describe these matters in our auditor's 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.

Other

We have audited and expressed an unqualified opinion including an Other Matter Paragraph on the parent company only financial statements of the Company as of and for the years ended December 31, 2019 and 2018.

/s/Chiu, Wan-Ju

/s/Hsu, Hsin-Min

Ernst & Young, Taiwan

February 26, 2020

Notice to Readers

The accompanying consolidated financial statements are intended only to present the consolidated financial position, results of operations 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 accepted and applied in the Republic of China.

Accordingly, the accompanying consolidated financial statements and report of independent auditors are not intended for use by those who are not informed about the accounting principles or auditing standards generally accepted in the Republic of China, and their applications in practice.

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
 December 31, 2019 and 2018
 (Expressed in Thousands of New Taiwan Dollars)

	Notes	As of December 31,	
		2019	2018
Assets			
Current assets			
Cash and cash equivalents		\$ 95,492,477	\$ 83,661,739
Financial assets at fair value through profit or loss, current	4, 6(1), 6(26), 6(27)		
Contract assets, current	4, 5, 6(2), 12(7)	722,794	528,450
Notes receivable	4, 6(18)	214,243	92,210
Accounts receivable, net	4	98	118
Accounts receivable-related parties, net	4, 6(3), 6(26), 6(27)	25,438,703	23,735,989
Other receivables	4, 7	289,945	138,912
Current tax assets	4	654,466	708,432
Inventories, net	4	26,220	20,856
Prepayments	4, 5, 6(4), 6(26), 6(27)	21,714,802	18,203,119
Other current assets	6(18)	6,290,518	11,225,322
Total current assets		153,757,141	2,878,285
Non-current assets			
Financial assets at fair value through profit or loss, noncurrent	4, 5, 6(2), 7, 12(7)	13,298,679	11,555,847
Financial assets at fair value through other comprehensive income, noncurrent	4, 5, 6(5), 12(7)	14,723,232	11,585,477
Investments accounted for under the equity method	4, 6(6), 7	13,322,143	10,363,977
Property, plant and equipment	4, 5, 6(7), 6(26), 6(27), 8	150,374,096	172,846,595
Right-of-use assets	4, 6(8), 6(26), 8	8,291,517	-
Intangible assets	4, 6(9), 6(26), 7	5,198,247	2,991,804
Deferred tax assets	4, 5, 6(23), 6(26)	7,807,583	6,387,909
Prepayment for equipment		217,906	661,402
Refundable deposits		2,600,733	2,757,399
Other noncurrent assets-others	8	596,088	4,261,064
Total non-current assets		216,430,224	223,411,474
Total assets		\$ 370,187,365	\$ 364,604,906

(continued)

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	As of December 31,	
	2019	2018
	\$	\$
Current liabilities		
Short-term loans	12,015,206	13,103,808
Contract liabilities, current	988,115	932,371
Notes and accounts payable	8,877,065	6,801,745
Other payables	15,235,384	12,455,861
Payables on equipment	3,031,184	4,008,142
Current tax liabilities	939,207	2,059,172
Lease liabilities, current	569,957	-
Current portion of long-term liabilities	24,795,600	5,121,396
Other current liabilities	6,262,604	5,416,842
Total current liabilities	72,714,322	49,899,337
Non-current liabilities		
Contract liabilities, noncurrent	482,080	-
Bonds payable	18,687,591	38,878,947
Long-term loans	29,200,299	28,204,054
Deferred tax liabilities	2,087,366	1,965,693
Lease liabilities, noncurrent	5,461,068	-
Net defined benefit liabilities, noncurrent	4,025,373	4,167,174
Guarantee deposits	196,110	612,903
Other noncurrent liabilities-others	30,118,734	34,340,307
Total non-current liabilities	90,258,621	108,169,078
Total liabilities	162,972,943	158,068,415
Equity attributable to the parent company		
Capital		
Common stock	117,243,187	124,243,187
Capital collected in advance	332,611	-
Additional paid-in capital		
Premiums	34,404,110	36,278,383
Treasury stock transactions	2,744,391	1,737,113
The differences between the fair value of the consideration paid or received from acquiring or disposing subsidiaries and the carrying amounts of the subsidiaries	573,336	573,336
Recognition of changes in subsidiaries' ownership	1,218	39
Share of changes in net assets of associates and joint ventures accounted for using equity method	123,268	108,613
Employee stock options	214,455	178,401
Stock options	1,476,405	1,515,297
Other	13,211	8,181
Retained earnings		
Legal reserve	11,572,579	10,865,280
Special reserve	14,513,940	-
Unappropriated earnings	34,733,761	50,723,263
Other components of equity		
Exchange differences on translation of foreign operations	(8,948,337)	(5,692,326)
Unrealized gains or losses on financial assets measured at fair value through other comprehensive income	(2,073,977)	(8,819,556)
Gains or losses on hedging instruments	-	(2,058)
Treasury stock		
	(119,801)	(5,647,430)
Total equity attributable to the parent company	206,804,357	206,069,723
Non-controlling interests		
	410,065	466,768
Total equity	207,214,422	206,536,491
Total liabilities and equity	\$ 370,187,365	\$ 364,604,906

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

English Translation of Consolidated Financial Statements Originally Issued in Chinese

UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the years ended December 31, 2019 and 2018

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings per Share)

	Notes	For the years ended December 31,	
		2019	2018
Operating revenues	4, 6(18), 7, 14	\$ 148,201,641	\$ 151,252,571
Operating costs	4, 6(4), 6(9), 6(13), 6(17), 6(19), 7, 14	(126,886,669)	(128,412,544)
Gross profit		21,314,972	22,840,027
Operating expenses	4, 6(3), 6(9), 6(13), 6(17), 6(18), 6(19), 7, 14		
Sales and marketing expenses		(3,807,610)	(3,901,912)
General and administrative expenses		(5,436,091)	(4,823,391)
Research and development expenses		(11,860,244)	(13,025,139)
Expected credit losses		(703,339)	(409,237)
Subtotal		(21,807,284)	(22,159,679)
Net other operating income and expenses	4, 6(7), 6(14), 6(20), 14	5,182,162	5,116,884
Operating income		4,689,850	5,797,232
Non-operating income and expenses			
Other income	4	1,705,675	1,391,376
Other gains and losses	4, 6(21), 6(27)	1,257,299	(1,128,290)
Finance costs	6(21)	(2,997,643)	(2,851,225)
Share of profit or loss of associates and joint ventures	4, 6(6), 14	1,147,495	(667,701)
Bargain purchase gain	4, 6(26)	171,585	-
Exchange loss, net	4, 12	(238,624)	(356,993)
Subtotal		1,045,787	(3,612,833)
Income from continuing operations before income tax		5,735,637	2,184,399
Income tax benefit	4, 5, 6(23), 14	393,130	458,653
Net income		6,128,767	2,643,052
Other comprehensive income (loss)	6(22)		
Items that will not be reclassified subsequently to profit or loss			
Remeasurements of defined benefit pension plans	4, 5, 6(13)	106,403	(55,060)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income		5,486,209	1,454,018
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	4	-	(2,572)
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss		1,231,722	(475,139)
Income tax related to items that will not be reclassified subsequently	4, 5, 6(23)	(158,260)	112,384
Items that may be reclassified subsequently to profit or loss			
Exchange differences on translation of foreign operations		(3,277,938)	(47,009)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss		15,348	(23,942)
Income tax related to items that may be reclassified subsequently	4, 5, 6(23)	5,301	(12,736)
Total other comprehensive income (loss), net of tax		3,408,785	949,944
Total comprehensive income (loss)		\$ 9,537,552	\$ 3,592,996
Net income (loss) attributable to:			
Stockholders of the parent		\$ 9,707,614	\$ 7,072,990
Non-controlling interests		(3,578,847)	(4,429,938)
		\$ 6,128,767	\$ 2,643,052
Comprehensive income (loss) attributable to:			
Stockholders of the parent		\$ 13,131,612	\$ 8,126,828
Non-controlling interests		(3,594,060)	(4,533,832)
		\$ 9,537,552	\$ 3,592,996
Earnings per share (NTD)	4, 6(24)		
Earnings per share-basic		\$ 0.82	\$ 0.58
Earnings per share-diluted		\$ 0.76	\$ 0.55

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

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY
For the years ended December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	Equity Attributable to the Parent Company											
	Capital			Retained Earnings			Other Components of Equity					Total Equity
Notes	Common Stock	Collected in Advance	Additional Paid-in Capital	Legal Reserve	Special Reserve	Unappropriated Earnings	Exchange Differences on Translation of Foreign Operations	Unrealized Gains or Losses on Financial Assets Measured at Fair Value through Other Comprehensive Income	Gains or Losses on Hedging Instruments	Treasury Stock	Non-Controlling Interests	Total Equity
Adjusted balance as of January 1, 2018	\$ 126,243,187	\$ -	\$ 40,858,350	\$ 9,902,407	\$ -	\$ 56,133,198	\$ (5,712,533)	\$ (9,867,013)	\$ -	\$ (4,719,037)	\$ 958,405	\$ 213,796,964
Appropriation and distribution of 2017 retained earnings	-	-	-	962,873	-	(962,873)	-	-	-	-	-	-
Legal reserve	-	-	-	962,873	-	(962,873)	-	-	-	-	-	-
Cash dividends	-	-	-	-	-	(8,557,023)	-	-	-	(8,557,023)	-	(8,557,023)
Net income (loss) for the year ended December 31, 2018	-	-	-	-	-	7,072,990	-	-	-	7,072,990	(4,429,938)	2,643,052
Other comprehensive income (loss), net of tax for the year ended December 31, 2018	-	-	-	-	-	(22,341)	20,207	1,058,030	(2,058)	1,053,838	(103,894)	949,944
Total comprehensive income (loss)	-	-	-	-	-	7,050,649	20,207	1,058,030	(2,058)	8,126,828	(4,533,832)	3,592,996
Share-based payment transaction	-	-	696,226	-	-	-	-	-	-	2,203,443	-	2,899,669
Treasury stock acquired	-	-	-	-	-	-	-	-	-	(6,261,018)	-	(6,261,018)
Treasury stock cancelled	(2,000,000)	-	(1,129,182)	-	-	-	-	-	-	3,129,182	-	-
Share of changes in net assets of associates and joint ventures accounted for using equity method	-	-	11,131	-	-	10,573	-	(10,573)	-	-	-	11,131
Disposal of subsidiary	-	-	-	-	-	-	-	-	-	-	(7,074)	(7,074)
Changes in subsidiaries' ownership	-	-	39	-	-	(475,311)	-	-	-	(475,272)	(278,613)	(753,885)
Adjustments for dividends subsidiaries received from parent company	-	-	11,442	-	-	-	-	-	-	11,442	-	11,442
Others	-	-	(48,643)	-	-	(2,475,950)	-	-	-	(2,524,593)	4,327,882	1,803,289
Balance as of December 31, 2018	124,243,187	-	40,399,363	10,865,280	-	50,723,263	(5,692,326)	(8,819,556)	(2,058)	(5,647,430)	466,768	206,536,491
Impact of retrospective applications	-	-	(10,427)	-	-	-	(13,935)	-	-	(24,362)	(0)	(24,362)
Adjusted balance as of January 1, 2019	124,243,187	-	40,388,936	10,865,280	-	50,723,263	(5,706,261)	(8,819,556)	(2,058)	(5,647,430)	466,768	206,512,129
Appropriation and distribution of 2018 retained earnings	-	-	-	707,299	-	(707,299)	-	-	-	-	-	-
Legal reserve	-	-	-	707,299	-	(707,299)	-	-	-	-	-	-
Special reserve	-	-	-	-	14,513,940	(14,513,940)	-	-	-	-	-	-
Cash dividends	-	-	-	-	-	(6,916,105)	-	-	-	(6,916,105)	-	(6,916,105)
Net income (loss) for the year ended December 31, 2019	-	-	-	-	-	9,707,614	-	-	-	9,707,614	(5,578,847)	6,128,767
Other comprehensive income (loss), net of tax for the year ended December 31, 2019	-	-	-	-	-	84,744	(3,242,076)	6,581,330	-	3,423,998	(15,213)	3,408,785
Total comprehensive income (loss)	-	-	-	-	-	9,792,358	(3,242,076)	6,581,330	-	13,131,612	(3,594,060)	9,537,552
Share-based payment transaction	-	-	377,004	-	-	-	-	-	-	377,004	-	377,004
Conversion of convertible bonds	-	332,611	130,804	-	-	-	-	-	-	463,415	-	463,415
Treasury stock acquired	-	-	-	-	-	-	-	-	(2,859,498)	(2,859,498)	-	(2,859,498)
Treasury stock cancelled	(7,000,000)	-	(1,387,127)	-	-	-	-	-	8,387,127	-	-	-
Share of changes in net assets of associates and joint ventures accounted for using equity method	-	-	14,655	-	-	387,654	-	(387,654)	-	-	-	14,655
Changes in subsidiaries' ownership	-	-	1,179	-	-	(22,280)	-	-	-	(21,101)	24,740	3,639
Adjustments for dividends subsidiaries received from parent company	-	-	9,485	-	-	-	-	-	-	9,485	-	9,485
Disposal of equity instruments investments measured at fair value through other comprehensive income	-	-	-	-	-	(551,903)	-	551,903	-	-	-	-
Others	-	-	15,458	-	-	(3,457,987)	-	-	2,058	(3,440,471)	3,512,617	72,146
Balance as of December 31, 2019	\$ 117,243,187	\$ 332,611	\$ 39,550,394	\$ 11,572,579	\$ 14,513,940	\$ 34,733,761	\$ (8,948,337)	\$ (2,073,977)	\$ -	\$ (119,800)	\$ 410,065	\$ 207,214,422

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

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2019	2018
Cash flows from operating activities:		
Net income before tax	\$ 5,735,637	\$ 2,184,399
Adjustments to reconcile net income before tax to net cash provided by operating activities:		
Depreciation	47,172,881	49,948,589
Amortization	2,216,654	2,100,130
Expected credit losses	703,339	409,237
Net (gain) loss of financial assets and liabilities at fair value through profit or loss	(1,279,931)	1,167,735
Interest expense	2,933,815	2,768,672
Interest income	(994,061)	(789,001)
Dividend income	(711,614)	(602,375)
Share-based payment	366,186	695,669
Share of (profit) loss of associates and joint ventures	(1,147,495)	667,701
Gain on disposal of property, plant and equipment	(43,036)	(136,743)
Loss on disposal of investments	16,293	19,286
Impairment loss on non-financial assets	118,134	46,225
Exchange loss on financial assets and liabilities	206,612	1,217,590
Bargain purchase gain	(171,585)	-
Amortization of deferred government grants	(4,062,148)	(3,885,722)
Income and expense adjustments	45,324,044	53,626,993
Changes in operating assets and liabilities:		
Financial assets and liabilities at fair value through profit or loss	(594,847)	789,666
Contract assets	(126,340)	(357,515)
Notes receivable and accounts receivable	439,400	(1,382,668)
Other receivables	67,347	618,317
Inventories	(1,370,249)	(46,497)
Prepayments	5,833,773	409,962
Other current assets	(64,732)	333,557
Contract fulfillment costs	8,054	(448,933)
Contract liabilities	69,329	(3,020,517)
Notes and accounts payable	(739,066)	257,044
Other payables	514,686	(426,302)
Other current liabilities	819,746	191,559
Net defined benefit liabilities	(35,398)	(26,405)
Other noncurrent liabilities-others	(3,240)	-
Cash generated from operations	55,878,144	52,702,660
Interest received	973,241	666,774
Dividend received	818,691	782,157
Interest paid	(2,147,320)	(2,221,301)
Income tax paid	(618,608)	(995,314)
Net cash provided by operating activities	54,904,148	50,934,976

(continued)

English Translation of Consolidated Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
For the years ended December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2019	2018
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	\$ (354,249)	\$ (593,563)
Proceeds from disposal of financial assets at fair value through profit or loss	229,553	1,061
Proceeds from disposal of equity instruments investments measured at fair value through other comprehensive income or loss	44,466	-
Acquisition of investments accounted for under the equity method	(730,000)	(840,000)
Proceeds from disposal of investments accounted for under the equity method	5,970	-
Increase in prepayment for investments	(17,974)	-
Proceeds from capital reduction and liquidation of investments	32,214	61,800
Acquisition of subsidiary (net of cash acquired)	(12,800,981)	-
Disposal of subsidiary	32,017	(9,813)
Derecognition of hedging financial assets and liabilities	-	(2,572)
Acquisition of property, plant and equipment	(16,518,483)	(19,590,075)
Proceeds from disposal of property, plant and equipment	45,042	200,991
Increase in refundable deposits	(257,909)	(1,674,984)
Decrease in refundable deposits	441,013	691,807
Acquisition of intangible assets	(2,443,593)	(838,675)
Government grants related to assets acquisition	617,685	7,129,770
Increase in other noncurrent assets-others	(15,074)	(36,440)
Decrease in other noncurrent assets-others	8,786	1,090
Net cash used in investing activities	<u>(31,681,517)</u>	<u>(15,499,603)</u>
Cash flows from financing activities:		
Increase in short-term loans	25,732,933	22,021,005
Decrease in short-term loans	(26,726,656)	(34,309,253)
Cash payments for the principal portion of the lease liability	(633,488)	-
Redemption of bonds	(2,500,000)	(7,500,000)
Proceeds from long-term loans	11,449,930	758,500
Repayments of long-term loans	(7,572,939)	(2,638,697)
Increase in guarantee deposits	269,415	213,432
Decrease in guarantee deposits	(17,146)	(125,301)
Cash dividends	(6,911,058)	(8,557,684)
Treasury stock acquired	(2,972,243)	(6,148,273)
Treasury stock sold to employees	-	2,204,000
Change in non-controlling interests	3,388	597,385
Others	10,818	-
Net cash used in financing activities	<u>(9,867,046)</u>	<u>(33,484,886)</u>
Effect of exchange rate changes on cash and cash equivalents	<u>(1,524,847)</u>	<u>36,680</u>
Net increase in cash and cash equivalents	11,830,738	1,987,167
Cash and cash equivalents at beginning of year	83,661,739	81,674,572
Cash and cash equivalents at end of year	<u>\$ 95,492,477</u>	<u>\$ 83,661,739</u>

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

UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES
 NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

For the Years Ended December 31, 2019 and 2018

(Expressed in Thousands of New Taiwan Dollars unless Otherwise Specified)

1. HISTORY AND ORGANIZATION

United Microelectronics Corporation (UMC) was incorporated in Republic of China (R.O.C.) in May 1980 and commenced operations in April 1982. UMC is a full service semiconductor wafer foundry, and provides a variety of services to satisfy customer needs. UMC's ordinary shares were publicly listed on the Taiwan Stock Exchange (TWSE) in July 1985 and its American Depositary Shares (ADSs) were listed on the New York Stock Exchange (NYSE) in September 2000.

The address of its registered office and principal place of business is No. 3, Li-Hsin Road II, Hsinchu Science Park, Hsinchu City, Taiwan. The principal operating activities of UMC and its subsidiaries ("the Company") are described in Notes 4(3) and 14.

2. DATE AND PROCEDURES OF AUTHORIZATION OF FINANCIAL STATEMENTS FOR ISSUE

The consolidated financial statements of the Company were authorized for issue in accordance with a resolution of the Board of Directors' meeting on February 26, 2020.

3. NEWLY ISSUED OR REVISED STANDARDS AND INTERPRETATIONS

(1) The Company applied International Financial Reporting Standards, International Accounting Standards, and Interpretations issued, revised or amended which are endorsed by Financial Supervisory Commission ("FSC") and become effective for annual periods beginning on or after January 1, 2019. Apart from the impact of the standards and interpretations which is described below, all other standards and interpretations have no material impact on the Company's financial position and performance.

- a. IFRS 16 "Leases" ("IFRS 16")
 IFRS 16 replaces IAS 17 "Leases" ("IAS 17"), IFRIC 4 "Determining whether an Arrangement contains a Lease" ("IFRIC 4"), SIC 15 "Operating Leases-Incentives" and SIC 27 "Evaluating the Substance of Transactions in the Legal Form of a Lease" for annual periods beginning on or after January 1, 2019.

The Company elected not to reassess whether a contract was, or contained, a lease at the date of initial application (January 1, 2019) in accordance with the transition provision in IFRS 16. The Company was permitted to apply IFRS 16 to contracts that were previously identified as leases applying IAS 17 and IFRIC 4. The Company elected not to restate comparative information and applied the standard retrospectively only to contracts that were not completed at the date of initial application in accordance with the transition provision in IFRS 16. The Company recognized the cumulative effect of initially applying IFRS 16 on January 1, 2019. As the Company only has operating leases, the impact arising from the adoption of IFRS 16 are summarized as follows:

i. For leases that were classified as operating leases applying IAS 17, lease payments were recognized as expenses on a straight-line basis over the lease terms. Upon adoption of IFRS 16, the Company measured and recognized those leases, except for short-term or low-value asset lease exemptions, as lease liabilities at the present value of the remaining lease payments, discounted using its weighted average incremental borrowing rate of 2.64% on January 1, 2019. On a lease-by-lease basis, the right-of-use asset was measured and recognized at an amount equal to the lease liability (adjusted by the amount of any prepaid lease payments). The Company assessed the cumulative effect at the date of initial application was primarily consisted of a decrease in prepayments amounting to NT\$15 million; an increase in right-of-use assets amounting to NT\$8,578 million; a decrease in other noncurrent assets-others amounting to NT\$2,621 million; a decrease in other payables amounting to NT\$40 million; an increase in lease liabilities amounting to NT\$6,006 million; a decrease in additional paid-in capital-other amounting to NT\$10 million; and a decrease in other components of equity amounting to NT\$14 million.

ii. In accordance with the transition provision in IFRS 16, the Company used the following practical expedients on a lease-by-lease basis to leases previously classified as operating leases:

- (i) Apply a single discount rate to a portfolio of leases with reasonably similar characteristics.
- (ii) Elect to account in the same way as short-term leases to leases for which the lease term ends within 12 months of January 1, 2019.
- (iii) Use hindsight, such as in determining the lease term if the contract contains options to extend or terminate the lease.

iii. The difference between the present value of operating lease commitments under IAS 17 as of December 31, 2018 discounted at the lessee's incremental borrowing rate and lease liabilities recognized on January 1, 2019 is explained as below:

Operating lease commitments under IAS 17 as of December 31, 2018	\$7,408,369
Present value discounted at the incremental borrowing rate on January 1, 2019	\$5,997,551
Add: An extension option reasonably certain to be exercised	8,906
Lease liabilities as of January 1, 2019	<u>\$6,006,457</u>

(2) Standards issued by International Accounting Standards Board (“IASB”) which are endorsed by FSC, but not yet adopted by the Company are listed below:

No.	The projects of Standards or Interpretations	Effective for annual periods
Amendments to IFRS 3	Definition of a Business	beginning on or after January 1, 2020
Amendments to IAS 1 and 8	Definition of Material	January 1, 2020
Amendments to IFRS 9, IAS 39 and IFRS 7	Interest Rate Benchmark Reform	January 1, 2020

b. IFRS 3 “Business Combinations” (“IFRS 3”) - Definition of a Business (Amendment)
 The amendments clarify the definition of a business in IFRS 3 Business Combinations. The amendments are intended to assist entities to determine whether a transaction should be accounted for as a business combination or as an asset acquisition.

IFRS 3 continues to adopt a market participant’s perspective to determine whether an acquired set of activities and assets is a business. The amendments clarify the minimum requirements for a business; add guidance to help entities assess whether an acquired process is substantive; and narrow the definitions of a business and of outputs; etc.

c. IAS 1 “Presentation of Financial Statements” (“IAS 1”) and IAS 8 “Accounting Policies, Changes in Accounting Estimates and Errors” - Definition of Material (Amendment)

The main amendment is to clarify new definition of material. It states that “information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.” The amendments clarify that materiality will depend on the nature or magnitude of information. An entity will need to assess whether the information, either individually or in combination with other information, is material in the context of the financial statements.

d. IFRS 9 “Financial Instruments” (“IFRS 9”), IAS 39 “Financial Instruments: Recognition and Measurement” (“IAS 39”) and IFRS 7 “Financial Instruments: Disclosures” - Interest Rate Benchmark Reform

The amendments include a number of exceptions, which apply to all hedging relationships that are directly affected by interest rate benchmark reform. A hedging relationship is directly affected if the interest rate benchmark reform gives rise to uncertainties about the timing and or amount of benchmark-based cash flows of the hedged item or the hedging instrument. Hence, the entity shall apply the exceptions to all hedging relationships directly affected by the interest rate benchmark reform.

The amendments include:

- i. highly probable requirement: When determining whether a forecast transaction is highly probable, an entity shall assume that the interest rate benchmark on which the hedged cash flows are based is not altered as a result of the interest rate benchmark reform.
- ii. prospective assessments: When performing prospective assessments, an entity shall assume that the interest rate benchmark on which the hedged item, hedged risk and/or hedging instrument are based is not altered as a result of the interest rate benchmark reform.
- iii. IAS 39 retrospective assessment: An entity is not required to undertake the IAS 39 retrospective assessment (i.e. the actual results of the hedge are within a range of 80~125%) for hedging relationships directly affected by the interest rate benchmark reform.
- iv. separately identifiable risk components: For hedges of a non-contractually specified benchmark component of interest rate risk, an entity shall apply the separately identifiable requirement only at the inception of such hedging relationships.

The amendments also include the end of application of the exceptions requirements and the related disclosures requirements of the amendments.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (b) ~ (d) to the Company’s financial position and performance, and the related impact will be disclosed when the evaluation is completed.

(3) Standards issued by IASB but not yet endorsed by FSC (the effective dates are to be determined by FSC) are listed below:

No.	The projects of Standards or Interpretations	Effective for annual periods
IFRS 10 and IAS 28	Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures	beginning on or after To be determined by IASB
IFRS 17	Insurance Contracts	1 January, 2021
IAS 1	Classification of Liabilities as Current or Non-current	1 January, 2022

The potential effects of adopting the standards or interpretations issued by IASB but not yet endorsed by FSC on the Company's financial statements in future periods are summarized as below:

e. IFRS 10 "Consolidated Financial Statements", "IFRS 10" and IAS 28 "Investments in Associates and Joint Ventures" - Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures (Amendment) ("IAS 28")

The amendments address the inconsistency between the requirements in IFRS 10 and IAS 28, in dealing with the loss of control of a subsidiary that is contributed to an associate or a joint venture. IAS 28 restricts gains and losses arising from contributions of non-monetary assets to an associate or a joint venture to the extent of the interest attributable to the other equity holders in the associate or joint venture. IFRS 10 requires full profit or loss recognition on the loss of control of a subsidiary. IAS 28 was amended so that the gain or loss resulting from the sale or contribution of assets that constitute a business as defined in IFRS 3 between an investor and its associate or joint venture is recognized in full. IFRS 10 was also amended so that the gain or loss resulting from the sale or contribution of a subsidiary that does not constitute a business as defined in IFRS 3 between an investor and its associate or joint venture is recognized only to the extent of the unrelated investors' interests in the associate or joint venture.

f. IAS 1 - Classification of Liabilities as Current or Non-current

These are the amendments to paragraphs 69-76 of IAS 1 presentation of financial statements and the amended paragraphs related to the classification of liabilities as current or non-current.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (e) ~ (f) to the Company's financial position and performance, and the related impact will be disclosed when the evaluation is completed.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(1) Statement of Compliance

The Company's consolidated financial statements were prepared in accordance with Regulations Governing the Preparation of Financial Reports by Securities Issuers (Regulations), IFRSs, IASs, IFRIC and SIC, which are endorsed by FSC (TIFRSs).

(2) Basis of Preparation

The consolidated financial statements have been prepared on a historical cost basis, except for financial instruments measured at fair value.

(3) General Description of Reporting Entity

a. Principles of consolidation

Subsidiaries are fully consolidated from the date of acquisition (the date on which the Company obtains control), and continue to be consolidated until the date that such control ceases. The Company controls an entity when the Company is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of the subsidiaries are prepared for the same reporting period as the parent company, using consistent accounting policies. All intra-group balances, transactions, unrealized gains and losses and dividends resulting from intra-group transactions are eliminated in full.

A change in the ownership interest of a subsidiary, without a change of control, is accounted for as an equity transaction. Total comprehensive income of subsidiaries is attributed to the stockholders of the parent and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

If the Company loses control over a subsidiary, the Company derecognizes the assets and liabilities of the subsidiary, as well as any non-controlling interests previously recorded by the Company. 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 interests. Any gain or loss previously recognized in the other comprehensive income would be reclassified to profit or loss or transferred directly to retained earnings if required by other TIFRSs. 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.

b. The consolidated entities are as follows:

As of December 31, 2019 and 2018

Investor	Subsidiary	Business nature	Percentage of ownership (%)	
			2019	2018
UMC	UMC GROUP (USA)	IC Sales	100.00	100.00
UMC	UNITED MICROELECTRONICS (EUROPE) B.V.	Marketing support activities	100.00	100.00

Investor	Subsidiary	Business nature	Percentage of ownership (%)		
			As of December 31,		
			2019	2018	2017
UMC	UMC CAPITAL CORP.	Investment holding	100.00	100.00	100.00
UMC	GREEN EARTH LIMITED (GE)	Investment holding	100.00	100.00	100.00
UMC	TLC CAPITAL CO., LTD. (TLC)	Venture capital	100.00	100.00	100.00
UMC	UMC INVESTMENT (SAMOA) LIMITED	Investment holding	100.00	100.00	100.00
UMC	FORTUNE VENTURE CAPITAL CORP. (FORTUNE)	Consulting and planning for venture capital	100.00	100.00	100.00
UMC	UMC GROUP JAPAN	IC Sales	100.00	100.00	100.00
UMC	UMC KOREA CO., LTD.	Marketing support activities	100.00	100.00	100.00
UMC	OMNI GLOBAL LIMITED (OMNI)	Investment holding	100.00	100.00	100.00
UMC	SINO PARAGON LIMITED	Investment holding	100.00	100.00	100.00
UMC	BEST ELITE INTERNATIONAL LIMITED (BE)	Investment holding	100.00	100.00	100.00
UMC	UNITED SEMICONDUCTOR JAPAN CO., LTD.	Sales and manufacturing of integrated circuits	100.00	-	-
UMC, FORTUNE and TLC	NEXPOWER TECHNOLOGY CORP. (NEXPOWER)	Sales and manufacturing of solar power batteries	93.36	93.36	93.36
UMC and FORTUNE	WAVE/TEK MICROELECTRONICS CORPORATION (WAVE/TEK)	Sales and manufacturing of integrated circuits	80.49	78.47	78.47
UMC CAPITAL CORP.	UMC CAPITAL (USA)	Investment holding	100.00	100.00	100.00
TLC	SOARING CAPITAL CORP.	Investment holding	100.00	100.00	100.00
SOARING CAPITAL CORP.	UNITRUTH ADVISOR (SHANGHAI) CO., LTD.	Investment holding and advisory	100.00	100.00	100.00
GE	UNITED MICROCHIP CORPORATION	Investment holding	100.00	100.00	100.00
FORTUNE	TERA ENERGY DEVELOPMENT CO., LTD. (TERA ENERGY)	Energy technical services	100.00	100.00	100.00
TERA ENERGY	EVERRICH ENERGY INVESTMENT (HK) LIMITED (EVERRICH-HK)	Investment holding	100.00	100.00	100.00
EVERRICH-HK	EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	100.00	100.00	100.00
OMNI	UNITED MICROTECHNOLOGY CORPORATION (NEW YORK)	Research and development	100.00	100.00	100.00
OMNI	UNITED MICROTECHNOLOGY CORPORATION (CALIFORNIA)	Research and development	100.00	100.00	100.00

Investor	Subsidiary	Business nature	Percentage of ownership (%)		
			As of December 31,		
			2019	2018	2017
OMNI	ECP VITA PTE. LTD.	Insurance	100.00	100.00	100.00
OMNI	UMC TECHNOLOGY JAPAN CO., LTD.	Semiconductor manufacturing and technology development and consulting services	100.00	100.00	100.00
WAVE/TEK	WAVE/TEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED (WAVE/TEK-SAMOA)	Investment holding	100.00	100.00	100.00
WAVE/TEK-SAMOA	WAVE/TEK MICROELECTRONICS CORPORATION (USA)	Sales and marketing service	100.00	100.00	100.00
NEXPOWER	SOCIALNEX ITALIA 1 S.R.L.	Photovoltaic power plant	-	-	100.00
BE	INFOSHINE TECHNOLOGY LIMITED (INFOSHINE)	Investment holding	100.00	100.00	100.00
INFOSHINE	OAKWOOD ASSOCIATES LIMITED (OAKWOOD)	Investment holding	100.00	100.00	100.00
OAKWOOD	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. (HEJIAN)	Sales and manufacturing of integrated circuits	98.14	98.14	98.14
HEJIAN	UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Integrated circuits design services	100.00	100.00	100.00
UNITED MICROCHIP CORPORATION and HEJIAN	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Sales and manufacturing of integrated circuits	65.22	65.22	65.22

(4) Business Combinations and Goodwill

Business combinations are accounted for using the acquisition method. The consideration transferred, the identifiable assets acquired and liabilities assumed are measured at the acquisition date fair value. For the components of non-controlling interests in the acquiree that are present ownership interests and entitle their holders to a proportionate share of the entity's net assets in the event of liquidation, the acquirer measures at either fair value or at the non-controlling interest's proportionate share of the acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred and are classified under administrative expenses.

When the Company acquires a business, it assesses the assets acquired and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as at the acquisition date.

If the business combination is achieved in stages, the acquisition date fair value of the acquirer's previously held equity interest in the acquiree is remeasured at fair value as at the acquisition date through profit or loss.

Any contingent consideration to be transferred by the acquirer will be recognized at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration which is deemed to be an asset or liability, will be recognized in accordance with IFRS 9, either in profit or loss or other comprehensive income. If the contingent consideration is classified as equity, it should not be remeasured until it is finally settled within equity.

Goodwill is initially measured at cost, being the excess of the aggregate of the consideration transferred, the acquisition date fair value of the acquirer's previously held equity interest in the acquiree and the amount recognized for non-controlling interest over the net identifiable assets acquired and liabilities assumed. If the fair value of the net assets acquired is in excess of the aggregate consideration transferred and non-controlling interests, the difference is recognized as a gain on bargain purchase.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses. For the purpose of impairment testing, goodwill acquired in a business combination is, from the acquisition date, allocated to each cash-generating unit ("CGU") that is expected to benefit from the combination, irrespective of whether other assets or liabilities of the acquiree are assigned to those units. Each unit or groups of units to which the goodwill is so allocated represents the lowest level within the Company at which the goodwill is monitored for internal management purposes and cannot be larger than an operating segment before aggregation.

Where goodwill forms part of a CGU and part of the operation within that unit is disposed, the goodwill associated with the operation disposed is included in the carrying amount of the operation. Goodwill disposed in this circumstance is measured based on the relative values of the operation disposed and the portion of the CGU retained.

(5) Foreign Currency Transactions

The Company's consolidated financial statements are presented in New Taiwan Dollars (NTD), which is also the parent company's functional currency. Each entity in the Company determines its own functional currency and items included in the financial statements of each entity are measured using that functional currency.

Transactions in foreign currencies are initially recorded by the Company's entities at their respective functional currency rates prevailing at the transaction date. Monetary assets and liabilities denominated in foreign currencies are translated into functional currency at the closing rates of exchange at the reporting date. Non-monetary items measured at fair value in foreign currencies are translated using the exchange rates at the date when the fair value is determined. Non-monetary items that are measured at historical cost in foreign currencies are translated using the exchange rates as at the dates of the initial transactions.

All exchange differences arising on the settlement of monetary items or on translating monetary items are taken to profit or loss in the period in which they arise except for the following:

- a. Exchange differences arising from foreign currency borrowings for an acquisition of a qualifying asset to the extent that they are regarded as an adjustment to interest costs are included in the borrowing costs that are eligible for capitalization.
- b. Foreign currency derivatives within the scope of IFRS 9 are accounted for based on the accounting policy for financial instruments.
- c. Exchange differences arising on a monetary item that is part of a reporting entity's net investment in a foreign operation are recognized initially in other comprehensive income and reclassified from equity to profit or loss upon disposal of such investment.

When a gain or loss on a non-monetary item is recognized in other comprehensive income, any exchange component of that gain or loss is recognized in other comprehensive income. When a gain or loss on a non-monetary item is recognized in profit or loss, any exchange component of that gain or loss is recognized in profit or loss.

(6) Translation of Foreign Currency Financial Statements

The assets and liabilities of foreign operations are translated into NTD at the closing rate of exchange prevailing at the reporting date and their income and expenses are translated at an average exchange rate for the period. The exchange differences arising on the translation are recognized in other comprehensive income. On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation, recognized in other comprehensive income and accumulated in the separate component of equity, is reclassified from equity to profit or loss when the gain or loss on disposal is recognized.

On partial disposal of a subsidiary that includes a foreign operation that does not result in a loss of control, the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income is re-attributed to the non-controlling interests in that foreign operation. On partial disposal of an associate or a joint venture that includes a foreign operation that does not result in a loss of significant influence or joint control, only the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income is reclassified to profit or loss.

Any goodwill and any fair value adjustments to the carrying amounts of assets and liabilities arising from the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and expressed in its functional currency.

(7) Current and Non-Current Distinction

An asset is classified as current when:

- a. the Company expects to realize the asset, or intends to sell or consume it, in its normal operating cycle;
- b. the Company holds the asset primarily for the purpose of trading;
- c. the Company expects to realize the asset within twelve months after the reporting period; or
- d. the asset is cash or a cash equivalent unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

All other assets are classified as non-current.

A liability is classified as current when:

- a. the Company expects to settle the liability in normal operating cycle;
- b. the Company holds the liability primarily for the purpose of trading;
- c. the liability is due to be settled within twelve months after the reporting period; or
- d. the Company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.

All other liabilities are classified as non-current.

(8) Cash Equivalents

Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and with maturity dates that do not present significant risks of changes in value resulting from changes in interest rates, including time deposits with original maturities of three months or less and repurchase agreements collateralized by government bonds and corporate bonds.

(9) Financial Instruments

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instrument.

The Company determines the classification of its financial assets at initial recognition. In accordance with IFRS 9 and the Regulations, financial assets of the Company are classified as financial assets at fair value through profit or loss, financial assets at fair value through other comprehensive income, and financial assets measured at amortized cost.

Purchase or sale of financial assets and liabilities are recognized using trade date accounting. All financial assets are recognized initially at fair value plus, in the case of investments not at fair value through profit or loss, directly attributable costs. Financial assets at fair value through profit or loss are initially recognized at fair value, and transaction costs are expensed in the statement of comprehensive income.

Financial Assets

a. Classification and subsequent measurement

i. Financial assets at fair value through profit or loss

Financial assets that are not measured at amortized cost or at fair value through other comprehensive income are recognized initially at fair value and subsequently measured at fair value with changes in fair value recognized in profit or loss.

ii. Financial assets at fair value through other comprehensive income

At initial recognition, the Company may make an irrevocable election to present in other comprehensive income subsequent changes in the fair value of an investment in an equity instrument that is not held for trading. When there is a disposal of such equity instrument, accumulated amounts presented in other comprehensive income are not subsequently transferred to profit or loss but are transferred directly to the retained earnings.

The debt instruments are measured at fair value through other comprehensive income if both of the following conditions are met:

- (i) the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and
- (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent changes in the fair value of such financial assets at fair value through other comprehensive income are recognized in other comprehensive income. Before derecognition, impairment gains or losses, interest revenue and foreign exchange gains and losses are recognized in profit or loss. When the financial assets are derecognized the cumulative gain or loss previously recognized in other comprehensive income is reclassified from other comprehensive income to profit or loss as a reclassification adjustment.

iii. Financial assets measured at amortized cost

The financial assets are measured at amortized cost (including cash and cash equivalent, notes, accounts and other receivables and other financial assets) if both of the following conditions are met.

- (i) the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent to initial recognition for financial assets measured at amortized cost, interest income, measured by the effective interest method amortization process, and impairment losses are recognized during circulation period. Gains and losses are recognized in profit or loss when the financial assets are derecognized.

b. Derecognition of financial assets

A financial asset is derecognized when:

- i. the contractual rights to receive cash flows from the asset have expired;
- ii. the Company has transferred assets and substantially all the risks and rewards of the asset have been transferred; or
- iii. the Company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

On derecognition of a financial asset in its entirety, the difference between the carrying amount and the consideration received or to be received including any cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss (for debt instruments) or directly in retained earnings (for equity instruments).

If the transferred asset is part of a larger financial asset and the part transferred qualifies for derecognition in its entirety, the Company allocates the previous carrying amount of the larger financial asset between the part that continues to be recognized and the part that is derecognized, based on the relative fair values of those parts on the date of the transfer. Any cumulative gain or loss that had been recognized in other comprehensive income is allocated between the part that continues to be recognized and the part that is derecognized, based on the relative fair values of those parts. The difference between the carrying amount allocated to the part derecognized and the sum of the consideration received for the part derecognized and any cumulative gain or loss allocated that had been recognized in other comprehensive income, is recognized in profit or loss or directly in retained earnings.

c. Impairment policy

The Company measures, at each reporting date, an allowance for expected credit losses (ECLs) for debt instrument investments measured at fair value through other comprehensive income and financial assets measured at amortized cost by assessing reasonable and supportable information including forward-looking information. Where the credit risk on a financial asset has not increased significantly since initial recognition, the loss allowance is measured at an amount equal to 12-month ECLs. Where the credit risk on a financial asset has increased significantly since initial recognition, the loss allowance is measured at an amount equal to the lifetime ECLs.

For notes, accounts receivable and contract assets, the Company applies a simplified approach in calculating ECLs. Therefore, the Company does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. ECLs are measured based on the Company's historical credit loss experience and customers' current financial condition, adjusted for forward-looking factors, such as customers' economic environment.

Financial Liabilities

a. Classification and subsequent measurement

The Company classifies the instrument issued as a financial liability or an equity instrument in accordance with the substance of the contractual arrangement and the definitions of a financial liability and an equity instrument.

- i. Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Excluding changes in own credit risk, gains or losses on the subsequent measurement including interest paid are recognized in profit or loss.

ii. Financial liabilities measured at amortized cost

Financial liabilities measured at amortized cost include interest bearing loans and borrowings that are subsequently measured using the effective interest method after initial recognition. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the effective interest method amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or transaction costs.

b. Derecognition of financial liabilities

A financial liability is derecognized when the obligation under the liability is discharged, cancelled or expires.

When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified (whether or not attributable to the financial difficulty of the debtor), such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss.

(10) Hedge Accounting

Cash flow hedges

The Company manages exposures arising from foreign currency exchange risk. With the adoption of IFRS 9, the Company designates a hedging relationship between the hedging instrument and the hedged item with the existence of an economic relationship and determines the hedge ratio to meet the hedge effectiveness. The Company designates certain hedging instruments to partially hedge the foreign currency exchange rate risks associated with certain highly probable forecast transactions. The separate component of equity associated with the hedged item is adjusted to the lower of the following (in absolute amounts):

- a. the cumulative gain or loss on the hedging instrument from inception of the hedge; and
- b. the cumulative change in fair value (present value) of the expected future cash flows on the hedged item from inception of the hedge.

The portion of the gain or loss on the hedging instrument that is determined to be an effective hedge is recognized in other comprehensive income, whereas the ineffective portion of the change in the fair value of the hedging instrument is recognized directly in profit or loss. If a hedge of a forecast transaction subsequently results in the recognition of a non-financial asset or a non-financial liability, the associated gains or losses that were recognized in other comprehensive income are included in the initial cost of the asset or liability.

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.

(11) Inventories

Inventories are accounted for on a perpetual basis. Raw materials are stated at actual purchase costs, while the work in process and finished goods are stated at standard costs and subsequently adjusted to weighted-average costs at the end of each month. The cost of work in progress and finished goods comprises raw materials, direct labor, other direct costs and related production overheads. Allocation of fixed production overheads to the costs of conversion is based on the normal capacity of the production facilities. Cost associated with underutilized capacity is expensed as incurred. Inventories are valued at the lower of cost and net realizable value item by item. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

(12) Investments Accounted For Under the Equity Method

The Company's investments in associates and joint ventures are accounted for using the equity method other than those that meet the criteria to be classified as non-current assets held for sale.

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 an entity, but is not control or joint control over those policies.

A joint venture is a type of joint arrangement whereby the Company that has joint control of the arrangement has rights to the net assets of the joint venture. Joint control is the contractually agreed sharing of control of an arrangement where no single party controls the arrangement on its own, which exists only when decisions about the relevant activities require unanimous consent of the parties sharing control.

Any difference between the acquisition cost and the Company's share of the net fair value of the identifiable assets and liabilities of associates and joint ventures is accounted for as follows:

- a. Any excess of the acquisition cost over the Company's share of the net fair value of the identifiable assets and liabilities of an associate or a joint venture at the date of acquisition is recognized as goodwill and is included in the carrying amount of the investment. Amortization of goodwill is not permitted.
- b. Any excess of the Company's share of the net fair value of the identifiable assets and liabilities of an associate or a joint venture over the acquisition cost, after reassessing the fair value, is recognized as a gain in profit or loss on the acquisition date.

Under the equity method, the investments in associates and joint ventures are carried on the balance sheet at cost plus post acquisition changes in the Company's share of profit or loss and other comprehensive income of associates and joint ventures. The Company's share of changes in associates' and joint ventures' profit or loss and other comprehensive income are recognized directly in profit or loss and other comprehensive income, respectively. Distributions received from an associate or a joint venture reduce the carrying amount of the investment. Any unrealized gains and losses resulting from transactions between the Company and the associate or the joint venture are eliminated to the extent of the Company's interest in the associate or the joint venture.

Financial statements of associates and joint ventures are prepared for the same reporting period as the Company. Where necessary, adjustments are made to bring the accounting policies in line with those of the Company.

Upon an associate's issuance of new shares, if the Company takes up more shares than its original proportionate holding while maintaining its significant influence over that associate, such increase would be accounted for as an acquisition of an additional equity interest in the associate. Upon an associate's issuance of new shares, if the Company does not take up proportionate shares and reduces its stockholding percentage while maintaining its significant influence over that associate, a proportionate share of the gain or loss previously recognized in other comprehensive income is reclassified to profit and loss. Any remaining difference will be charged to additional paid-in capital. When a change in equity of an associate does not result from its profit or loss or other comprehensive income, and such changes do not affect the Company's ownership percentage, the Company recognizes its proportionate share of all related changes in equity. Accordingly, upon disposal of the associate, the Company reclassifies the aforementioned additional paid-in capital to profit or loss on a pro rata basis.

The Company ceases to use the equity method upon loss of significant influence over an associate. Any difference between the carrying amount of the investment in an associate upon loss of significant influence and the fair value of the retained investment plus proceeds from disposal will be recognized in profit or loss. If an investment in an associate becomes an investment in a joint venture or an investment in a joint venture becomes an investment in an associate, the Company continues to apply the equity method and does not remeasure the retained interest.

The Company determines at each reporting date whether there is any objective evidence that the investments in associates and joint ventures are impaired. An impairment loss, being the difference between the recoverable amount of the associate or joint venture and its carrying amount, is recognized in profit or loss in the statement of comprehensive income and forms part of the carrying amount of the investments.

(13) Property, Plant and Equipment

Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any, and any borrowing costs incurred for long-term construction projects are capitalized if the recognition criteria are met. Significant renewals, improvements and major inspections meeting the recognition criteria are treated as capital expenditures, and the carrying amounts of those replaced parts are derecognized. Maintenance and repairs are recognized in expenses as incurred. Any gain or loss arising from derecognition of the assets is recognized in other operating income and expenses.

Depreciation is calculated on a straight-line basis over the estimated useful lives. A significant part of an item of property, plant and equipment which has a different useful life from the remainder of the item is depreciated separately.

The depreciation methods, useful lives and residual values for the assets are reviewed at each fiscal year end, and the changes from the previous estimation are recorded as changes in accounting estimates.

Except for land, which is not depreciated, the estimated useful lives of the assets are as follows:

Buildings	7~56 years
Machinery and equipment	6~9 years
Transportation equipment	5~7 years
Furniture and fixtures	1~9 years
Leasehold improvement	The shorter of lease terms or useful lives

(14) Lease

The summary of significant accounting policies applying in 2019 is as follows:

A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange of consideration, and to obtain substantially all economic benefits from use of the identified asset. The Company accounts for a lease contract as a single lease and separates the lease and non-lease components included in the contract.

The Company as a lessor

The Company recognizes lease payments from operating leases as rental income on a straight-line basis over the term of the lease.

The Company as a lessee

At the commencement date of a lease, a lessee is required to recognize right-of-use assets and lease liabilities, except for short-term leases and low-value asset leases.

- a. At the commencement date, lease liabilities should be recognized and measured at the present value of the lease payments that have not been paid at that date, using the Company's incremental borrowing rate. The payments comprise:
- i. fixed payments less any lease incentives receivable;
 - ii. variable lease payments that depend on an index or rate;
 - iii. amounts expected to be payable by the Company under residual value guarantees;
 - iv. the exercise price of a purchase option if the Company is reasonably certain to exercise; and
 - v. payments for terminating the lease unless it is reasonably certain that early termination will not occur.

Lease liabilities are measured in subsequent periods using the effective interest method, and the interest expenses are recognized over the lease terms. In addition, the carrying amount of lease liabilities is remeasured if there is a modification which is not accounted as a separate lease, a change in the lease term, a change in the lease payments (e.g., changes to future payments resulting from a change in an index or rate used to determine such lease payments) or a change in the assessment of an option to purchase the underlying asset.

- b. At the commencement date, the right-of-use assets should be measured at cost, which comprise:
- i. the amount of the initial measurement of the lease liabilities;
 - ii. any lease payments made at or before the commencement date; and
 - iii. any initial direct costs incurred.

Subsequent to initial recognition, the right-of-use assets are measured using cost model. Right-of-use assets measured under the cost model are depreciated from the commencement date to the earlier of the end of the useful life of the right-of-use assets or the end of the lease terms. Any remeasurement of the lease liabilities results in a corresponding adjustment of the right-of-use assets.

The Company presents right-of-use assets and lease liabilities on the balance sheets, and depreciation expenses and interest expenses are separately presented in the statements of comprehensive income. The Company recognizes the lease payments associated with short-term leases and low-value asset leases as expenses on a straight-line basis over the lease terms.

(15) Intangible Assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is its fair value as at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses, if any. Internally generated intangible assets which fail to meet the recognition criteria are not capitalized and the expenditures are reflected in profit or loss in the period incurred.

The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite useful lives are amortized over the useful lives and assessed for impairment whenever there is an indication that the intangible assets may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at the end of each fiscal year. Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset is accounted for by changing the amortization period or method, as appropriate, and is treated as changes in accounting estimates.

Intangible assets with indefinite useful lives are not amortized, but are tested for impairment annually, either individually or at the CGU level. The assessment of indefinite useful life is reviewed annually to determine whether the indefinite useful life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

Gains or losses arising from derecognition of an intangible asset are recognized in other operating income and expenses.

Accounting policies of the Company's intangible assets are summarized as follows:

- a. Goodwill arising from business combinations is not amortized, and is tested for impairment annually or more frequently if events or changes in circumstances suggest that the carrying amount may not be recoverable. If an event occurs or circumstances change which indicates that the goodwill is impaired, an impairment loss is recognized. Goodwill impairment losses cannot be reversed once recognized.
- b. Software is amortized over the contract term or estimated useful life (3-6 years) on a straight-line basis.

c. Patent and technology license fee: Upon signing of contract and obtaining the right to intellectual property, any portion attributable to non-cancellable and mutually agreed future fixed license fees for patent and technology is discounted, and recognized as an intangible asset and related liability. The cost of the intangible asset is not revalued once determined on initial recognition, and is amortized over the useful life (5-10 years) on a straight-line basis. Interest expenses from the related liability are recognized and calculated based on the effective interest method. Based on the timing of payments, the liability is classified as current and non-current.

d. Others are mainly the intellectual property license fees, amortized over the shorter of the contract term or estimated useful life (3 years) of the related technology on a straight-line basis.

(16) Impairment of Non-Financial Assets

The Company assesses at each reporting date whether there is an indication that an asset in the scope of IAS 36 "Impairment of Assets" may be impaired. If any indication exists, the Company completes impairment testing for the CGU to which the individual assets belong. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. The recoverable amount of an individual asset or a CGU is the higher of its fair value less costs of disposal and its value in use. If circumstances indicate that previously recognized impairment losses may no longer exist or may have decreased at each reporting date, the Company re-assesses the asset's or CGU's recoverable amount. A previously recognized impairment loss is reversed only if there has been an increase in the estimated service potential of an asset which in turn increases the recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation or amortization, had no impairment loss been recognized for the asset in prior years.

A CGU, or group of CGUs, to which goodwill has been allocated is tested for impairment annually at the same time every year, irrespective of whether there is any indication of impairment. Where the carrying amount of a CGU (including the carrying amount of goodwill) exceeds its recoverable amount, the CGU is considered impaired. If an impairment loss is to be recognized, it is first allocated to reduce the carrying amount of any goodwill allocated to the CGU (group of units), then to the other assets of the unit (group of units) pro rata on the basis of the carrying amount of each asset in the unit (group of units). Impairment losses relating to goodwill cannot be reversed in future periods.

The recognition or reversal of impairment losses is classified as other operating income and expenses.

(17) Bonds

Convertible bonds

UMC evaluates the terms of the convertible bonds issued to determine whether it contains both a liability and an equity component. Furthermore, UMC assesses if the economic characteristics and risks of the put and call options embedded in the convertible bonds are closely related to the economic characteristics and risk of the host contract before separating the equity element.

For the liability component excluding the derivatives, its fair value is determined based on the effective interest rate applied at that time by the market to instruments of comparable credit status. The liability component is classified as a financial liability measured at amortized cost using the effective interest method before the instrument is converted or settled. For the embedded derivative that is not closely related to the host contract, it is classified as a liability component and subsequently measured at fair value through profit or loss unless it qualifies as an equity component. The equity component is recognized initially at the difference between the fair value of the compound financial instrument as a whole and the fair value of the liability component. Its carrying amount is not remeasured in the subsequent accounting periods. If the convertible bond issued does not have an equity component, it is accounted for as a hybrid instrument in accordance with the requirements under IFRS 9.

If the convertible bondholders exercise their conversion right before maturity, UMC shall adjust the carrying amount of the liability component. The adjusted carrying amount of the liability component at conversion and the carrying amount of equity component are credited to common stock and additional paid-in capital-premiums. No gain or loss is recognized upon bond conversion.

In addition, the liability component of convertible bonds is classified as a current liability if within 12 months the bondholders may exercise the put right. After the put right expires, the liability component of the convertible bonds should be reclassified as a non-current liability if it meets the definition of a non-current liability in all other respects.

(18) Post-Employment Benefits

Under defined contribution pension plans, the contribution payable to the plan in exchange for the service rendered by an employee during a period shall be recognized as an expense. The contribution payable, after deducting any amount already paid, is recognized as a liability.

The cost of equity-settled transactions is recognized, together with a corresponding increase in equity, over the periods in which the performance and/or service conditions are being fulfilled. The cumulative expense recognized for equity-settled transactions at each reporting date reflects the extent to which the vesting period has passed and the Company's best estimate of the quantity of equity instruments that will ultimately vest. The charge to profit or loss for a period represents the movement in cumulative expense recognized between the beginning and the end of that period.

No expense will be recognized for awards that do not ultimately vest, except for equity-settled transactions for which vesting is conditional upon a market or non-vesting condition. These are treated as vested irrespective of whether the market or non-vesting condition is satisfied, provided that all other performance and/or service conditions are satisfied.

Where the terms of an equity-settled transaction award are modified, the minimum expense recognized is the expense as if the terms had not been modified, if the original terms of the award are met. An additional expense is recognized for any modification that increases the total fair value of the share-based payment transaction, or is otherwise beneficial to the employee as measured at the date of modification.

Where an equity-settled award is cancelled, it is treated as if it fully vests on the date of cancellation, and any expense not yet recognized for the award is recognized immediately. This includes any award where non-vesting conditions within the control of either the entity or the employee are not met. However, if a new award substitutes for the cancelled award and is designated as a replacement award on the date that it is granted, the cancelled and new awards are treated as if they were a modification of the original award.

(22) Revenue Recognition

Revenue from Contracts with Customers

The Company recognizes revenue from contracts with customers by applying the following steps of IFRS 15 "Revenue from Contracts with Customers":

- a. identify the contract with a customer;
- b. identify the performance obligations in the contract;
- c. determine the transaction price;
- d. allocate the transaction price to the performance obligations in the contract; and
- e. recognize revenue when (or as) the entity satisfies its performance obligations

Under defined benefit pension plans, the net defined benefit liability (asset) shall be recognized as the amount of the present value of the defined benefit obligation, deducting the fair value of any plan assets and adjusting for any effect of the asset ceiling. Service cost and net interest on the net defined benefit liability (asset) are recognized as expenses in the period of service. Remeasurement of the net defined benefit liability (asset), which comprises actuarial gains and losses, the return on plan assets and any change in the effect of the asset ceiling, excluding any amounts included in net 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 shall not be reclassified to profit or loss in a subsequent period.

(19) Government Grants

In accordance with IAS 20 "Accounting for Government Grants and Disclosure of Government Assistance", the Company recognizes the government grants when there is reasonable assurance that such grants will be received and the conditions attaching to them will be complied with.

An asset related government grant is recorded as deferred income and recognized in profit or loss on a straight-line basis over the useful lives of the assets. An expense related government grant is recognized in profit or loss on a systematic basis over the periods in which the Company recognizes as expenses the related costs for which the grant is intended to compensate. A government grant that compensates for expenses or losses already incurred or for the purpose of giving immediate financial support to the Company with no future related costs is recognized in profit or loss when it becomes receivable.

(20) Treasury Stock

UMC's own equity instruments repurchased (treasury stocks) are recognized at repurchase cost and deducted from equity. No gain or loss shall be recognized in profit or loss on the purchase, sale, issue or cancellation of UMC's own equity instruments. Any difference between the carrying amount and the consideration is recognized in equity.

(21) Share-Based Payment Transactions

The cost of equity-settled transactions between the Company and its employees is measured at the fair value using an appropriate pricing model by reference to the market price of the equity instruments on the grant date.

Revenues on the Company's contracts with customers for the sales of wafers and joint technology development are recognized as the Company satisfies its performance obligations to customers upon transfer of control of promised goods and services. The Company recognizes revenue at transaction price that are determined using contractual prices reduced by sales returns and allowances which the Company estimates based on historical experience having determined that a significant reversal in the amount of cumulative revenue recognized are not probable to occur. The Company recognizes refund liabilities for estimated sales return and allowances based on the customer complaints, historical experience, and other known factors.

The Company recognizes accounts receivable when the Company transfers control of the goods or services to customers and has a right to an amount of consideration that is unconditional. Such accounts receivable are short term and do not contain a significant financing component. For certain contracts that do not provide the Company unconditional rights to the consideration, and the transfer of control of the goods or services has been satisfied, the Company recognizes contract assets and revenues.

Consideration received from customers prior to the Company having satisfied its performance obligations are accounted for as contract liabilities which are transferred to revenue after the performance obligations are satisfied. The Company recognizes costs to fulfill a contract when the costs relate directly to the contract, generate or enhance resources to be used to satisfy performance obligations in the future, and are expected to be recovered. The costs and revenues are recognized when the Company satisfies its performance obligations to customers upon transfer of control of promised goods and services.

Interest income

For financial assets measured at amortized cost and financial assets at fair value through other comprehensive income, interest income is recorded using the effective interest method and recognized in profit or loss.

Dividends

Revenue is recognized when the Company's right to receive the dividends is established, which is generally when stockholders approve the dividend.

(23) Income Tax

Income tax expense (benefit) is the aggregate amount of current income tax and deferred income tax included in the determination of profit or loss for the period.

Current income tax

Current income tax assets and liabilities for the current period and prior periods are measured using the tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period. Current income tax relating to items recognized directly in other comprehensive income or equity is recognized in other comprehensive income or equity rather than profit or loss.

The additional income tax for undistributed earnings is recognized as income tax expense in the subsequent year when the distribution proposal is approved by the stockholders' meeting.

Deferred income tax

Deferred income tax is determined using the liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts in financial statements at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- a. When the deferred tax liability arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss;
- b. In respect of taxable temporary differences associated with investments in subsidiaries, associates and joint ventures, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences, the carryforward of unused tax losses and unused tax credits, to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences and the carryforward of unused tax losses and unused tax credits can be utilized, except:

- a. Where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss;
- b. In respect of deductible temporary differences associated with investments in subsidiaries, associates and joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

(24) Earnings per Share

Earnings per share is computed according to IAS 33, "Earnings per Share". Basic earnings per share is computed by dividing net income by the weighted-average number of ordinary shares outstanding during the current reporting period. Diluted earnings per share is computed by taking basic earnings per share into consideration plus additional ordinary shares that would have been outstanding if the dilutive share equivalents had been issued. Net income is also adjusted for interest and other income or expenses derived from any underlying dilutive share equivalents. The weighted-average of outstanding shares is adjusted retroactively for stock dividends and employee stock compensation issues.

5. SIGNIFICANT ACCOUNTING JUDGMENTS, ESTIMATES AND ASSUMPTIONS

The preparation of the Company's consolidated financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets, liabilities, the accompanying disclosures and the disclosure of contingent liabilities. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

The key assumptions concerning the future and other key sources of estimating uncertainty at the reporting date that would have a significant risk for a material adjustment to the carrying amounts of assets or liabilities within the next fiscal year are discussed below.

The Company bases its assumptions and estimates on information available when the consolidated financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the Company. Such changes are reflected in the assumptions when they occur.

(1) The Fair Value of Level 3 Financial Instruments

Where the fair values of the level 3 financial assets and financial liabilities recorded on the balance sheet cannot be derived from active markets, they are determined by the application of an appropriate valuation method including the income approach and market approach. The valuation of these financial assets involves significant judgment in the preparation of cash flow forecasts, a selection of comparable companies or equity transaction prices, as well as the application of assumptions such as discount rates, discounts for lack of marketability, and valuation multiples, etc. Changes in assumptions about these factors could affect the reported fair value of the financial assets. Please refer to Note 12 for more details.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the reporting date. The measurement of deferred tax assets and liabilities reflects the tax consequences that would follow 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. Deferred tax relating to items recognized outside profit or loss is not recognized in profit or loss but rather in other comprehensive income or directly in equity. Deferred tax assets are reassessed and recognized at each reporting date. Unrecognized deferred tax assets are reassessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax assets to be recovered.

Deferred tax assets and liabilities offset each other, if a legally enforceable right exists to set off current income tax assets against current income tax liabilities, and the deferred taxes relate to the same taxable entity and the same taxation authority.

Tax benefits acquired as part of a business combination, but not satisfying the criteria for separate recognition at the acquisition date, might be realized and recognized subsequently as follows:

- a. Acquired deferred tax benefits recognized within the measurement period that result from new information about facts and circumstances that existed at the acquisition date shall be applied to reduce the carrying amount of any goodwill related to that acquisition. If the carrying amount of that goodwill is nil, any remaining deferred tax benefits shall be recognized in profit or loss;
- b. All other acquired deferred tax benefits realized shall be recognized in profit or loss, other comprehensive income or equity.

The Company has considered whether it is probable that a taxation authority will accept the uncertain tax treatments used in its income tax filings. If the Company concludes that it is probable that the taxation authority will accept an uncertain tax treatment, the Company determines the taxable profit, tax bases, unused tax losses, unused tax credits or tax rates consistently with the tax treatments used or planned to be used in its income tax filings. If it is not probable that the taxation authority will accept an uncertain tax treatment, the Company makes estimates using either the most likely amount or the expected value of the tax treatment, depending on which method the Company expects to better predict the resolution of the uncertainty. The Company reassesses a judgement or estimate if the facts and circumstance change.

(2) Inventories

Inventories are valued at the lower of cost and net realizable value item by item. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale. Please refer to Note 6(4). Costs of completion include direct labor and overhead, including depreciation and maintenance of production equipment, indirect labor costs, indirect material costs, supplies, utilities and royalties that is expected to be incurred at normal production level. The Company estimates normal production level taking into account loss of capacity resulting from planned maintenance, based on historical experience and current production capacity.

(3) Post-Employment Benefits

Defined benefit costs and the present value of the defined benefit obligation for a pension plan are determined using the projected unit credit method. An actuarial valuation involves making various assumptions, which include the determination of the discount rate, future salary increase rate, mortality rate, etc., and may differ from actual developments in the future. In determining the appropriate discount rate, management considers the interest rates of the government bonds extrapolated from maturity corresponding to the expected duration of the defined benefit obligation. As for the rate of future salary increase, management takes account of past experiences, comparisons within the industry and the geographical region, inflation and the discount rate. Due to the complexity of the actuarial valuation and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. The assumptions used are disclosed in Note 6(13).

(4) Impairment of Property, Plant and Equipment

At each reporting date or whenever events indicate that the asset's value has declined or significant changes in the market with an adverse effect have taken place, the Company assesses whether there is an indication that an asset in the scope of IAS 36 may be impaired. If any indication exists, the Company completes impairment testing for the CGU to which the individual assets belong. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. The recoverable amount of an individual asset or CGU is the higher of fair value less costs of disposal and its value in use. The fair value less costs of disposal is based on best information available to reflect the amount that an entity could obtain from the disposal of the asset in an orderly transaction between market participants, after deducting the costs of disposal. The value in use is measured at the net present value of the future cash flows the entity expects to derive from the asset or CGU. Cash flow projection involves subjective judgments and estimates which include the estimated useful lives of property, plant and equipment, capacity that generates future cash flows, capacity of physical output, potential fluctuations of economic cycle in the industry and the Company's operating situation.

(5) Income Tax

Uncertainties exist with respect to the interpretation of complex tax regulations, changes in tax laws, and the amount and timing of future taxable income. The Company establishes provisions, based on reasonable estimates, for possible consequences of audits by the tax authorities of the respective countries in which it operates. The amount of such provisions is based on various factors, such as experience of previous tax audits and different interpretations of tax regulations made by the taxable entity and the responsible tax authority. Such differences of interpretation may arise on a wide variety of issues depending on the conditions prevailing in the respective domicile of the Company.

Deferred tax assets are recognized for all carryforward of unused tax losses, tax credits and deductible temporary differences to the extent that it is probable that future taxable profit will be available or there are sufficient taxable temporary differences against which the unused tax losses, unused tax credits or deductible temporary differences can be utilized. The amount of deferred tax assets determined to be recognized is based upon the likely timing and the level of future taxable profits and taxable temporary differences. Please refer to Note 6(23) for more details on unrecognized deferred tax assets.

6. CONTENTS OF SIGNIFICANT ACCOUNTS

(1) Cash and Cash Equivalents

	As of December 31,	
	2019	2018
Cash on hand and petty cash	\$6,074	\$6,091
Checking and savings accounts	26,384,925	25,021,265
Time deposits	59,966,481	49,139,549
Repurchase agreements collateralized by government bonds and corporate notes	9,134,997	9,494,834
Total	<u>\$95,492,477</u>	<u>\$83,661,739</u>

(2) Financial Assets at Fair Value through Profit or Loss

	As of December 31,	
	2019	2018
Financial assets mandatorily measured at fair value through profit or loss		
Common stocks	\$8,381,085	\$6,814,915
Preferred stocks	3,299,419	2,998,228
Funds	2,195,524	2,030,688
Convertible Bonds	145,445	236,905
Forward contracts	-	3,561
Option	-	-
Total	<u>\$14,021,473</u>	<u>\$12,084,297</u>

	As of December 31,	
	2019	2018
Current	\$722,794	\$528,450
Noncurrent	13,298,679	11,555,847
Total	<u>\$14,021,473</u>	<u>\$12,084,297</u>

The Company had a call option of a joint venture agreement between FUJITSU SEMICONDUCTOR LIMITED (FSL) and UMC, which was measured at fair value and the change in the fair value was recorded in profit or loss. On June 29, 2018, the Board of Directors of UMC resolved to exercise the call option, and completed the acquisition on October 1, 2019. Please refer to Note 6(26).

(3) Accounts Receivable, Net

	As of December 31,	
	2019	2018
Accounts receivable	\$26,136,293	\$23,784,141
Less: loss allowance	(697,590)	(48,152)
Net	<u>\$25,438,703</u>	<u>\$23,735,989</u>

Aging analysis of accounts receivable, net:

	As of December 31,	
	2019	2018
Neither past due nor impaired	\$21,924,797	\$18,271,304
Past due but not impaired:		
≤ 30 days	2,364,311	3,407,690
31 to 60 days	204,791	739,054
61 to 90 days	85,131	545,366
91 to 120 days	138,788	365,007
≥ 121 days	720,885	407,568
Subtotal	<u>3,513,906</u>	<u>5,464,685</u>
Total	<u>\$25,438,703</u>	<u>\$23,735,989</u>

Movement of loss allowance for accounts receivable:

	For the years ended December 31,	
	2019	2018
Beginning balance	\$48,152	\$39,578
Net charge for the period	649,438	8,574
Ending balance	<u>\$697,590</u>	<u>\$48,152</u>

The collection periods for third party domestic sales and third party overseas sales were month-end 30-60 days and net 30-60 days, respectively.

An impairment analysis is performed at each reporting date to measure expected credit losses (ECLs) of accounts receivable. For receivable past due within 60 days, including not past due, the Company estimates a provision rate to calculate ECLs. A provision rate is determined based on the Company's historical credit loss experience and customers' current financial condition, adjusted for forward-looking factors, such as customers' economic environment. For the receivable past due over 60 days, the Company applies the aforementioned provision rate and also individually assesses whether to recognize additional expected credit losses by considering customer's operating situation and debt-paying ability.

(4) Inventories, Net

	As of December 31,	
	2019	2018
Raw materials	\$5,102,571	\$3,766,056
Supplies and spare parts	3,548,376	3,133,737
Work in process	11,309,718	10,034,488
Finished goods	1,754,137	1,268,838
Total	<u>\$21,714,802</u>	<u>\$18,203,119</u>

a. For the years ended December 31, 2019 and 2018, the Company recognized NT\$122,999 million and NT\$123,795 million, respectively, in operating cost, of which NT\$820 million and NT\$1,698 million were related to write-down of inventories.

b. None of the aforementioned inventories were pledged.

(5) Financial Assets at Fair Value through Other Comprehensive Income, Non-Current

	As of December 31,	
	2019	2018
Equity instruments		
Common stocks	\$14,547,738	\$11,401,451
Preferred stocks	175,494	184,026
Total	<u>\$14,723,232</u>	<u>\$11,585,477</u>

a. These investments in equity instruments are held for medium to long-term purposes and therefore are accounted for as fair value through other comprehensive income.

b. Amounts recognized in profit or loss and other comprehensive income in relation to the financial assets at fair value through other comprehensive income are listed below:

	For the years ended December 31,	
	2019	2018
Dividend income recognized in profit or loss		
Held at end of period	\$365,052	\$268,406
Derecognized during the period	-	-
Total	\$365,052	\$268,406

c. In consideration of the Company's investment strategy, the Company disposed and derecognized partial equity instrument investments measured at fair value through other comprehensive income. Details on derecognition of such investments for the years end December 31, 2019 and 2018 are as follow:

	For the years ended December 31,	
	2019	2018
Fair value on the date of sale	\$2,348,454	\$-
Cumulative gains (losses) reclassified to retained earnings due to derecognition	\$(551,903)	\$-

(6) Investments Accounted For Under the Equity Method

a. Details of investments accounted for under the equity method are as follows:

Investee companies	As of December 31,		
	2019	2018	Percentage of ownership or voting rights
<u>Listed companies</u>			
CLIENTRON CORP.	\$276,866	\$249,762	22.39
FARADAY TECHNOLOGY CORP. (FARADAY)	1,470,499	1,477,167	13.78

(Note A)

Investee companies	As of December 31,		
	2019	2018	Percentage of ownership or voting rights
<u>Unlisted companies</u>			
MTIC HOLDINGS PTE. LTD.	\$18,157	\$3,026	45.44
WINAICO IMMOBILIEN GMBH (Note B)	-	-	44.78
PURIUMFIL INC.	7,164	-	44.45
UNITECH CAPITAL INC.	642,660	568,005	42.00
TRIKNIGHT CAPITAL CORPORATION	2,281,631	1,520,575	40.00
HSUN CHIEH INVESTMENT CO., LTD.	4,378,193	3,419,430	36.49
YANN YUAN INVESTMENT CO., LTD.	3,829,934	2,642,543	30.87
HSUN CHIEH CAPITAL CORP.	122,060	161,319	30.00
VSENSE CO., LTD.	592	31,544	25.90
UNITED LED CORPORATION HONG KONG LIMITED	121,973	167,953	25.14
TRANSLINK CAPITAL PARTNERS I, L.P. (Note C)	172,414	120,440	10.38
WINAICO SOLAR PROJEKT 1 GMBH (Note B)	-	-	50.00
YUNG LI INVESTMENTS, INC.	-	2,213	45.16
Total	\$13,322,143	\$10,363,977	

Note A: Beginning from June 2015, the Company accounts for its investment in FARADAY as an associate given the fact that the Company obtained the ability to exercise significant influence over FARADAY through representation on its Board of Directors.

Note B: WINAICO SOLAR PROJEKT 1 GMBH and WINAICO IMMOBILIEN GMBH are joint ventures to the Company.

Note C: The Company follows international accounting practices in equity accounting for limited partnerships and uses the equity method to account for these investees.

The carrying amount of investments accounted for using the equity method for which there are published price quotations amounted to NT\$1,747 million and NT\$1,727 million, as of December 31, 2019 and 2018, respectively. The fair value of these investments were NT\$2,244 million and NT\$1,621 million, as of December 31, 2019 and 2018, respectively.

(7) Property, Plant and Equipment2019a. Assets Used by the Company(Note):Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2019	\$861,487	\$35,681,733	\$853,481,220	\$66,355	\$6,736,916	\$53,449	\$10,550,763	\$907,431,923
Additions	-	-	-	-	-	-	14,579,988	14,579,988
Disposals	-	(4,637)	(8,122,361)	(3,563)	(196,487)	(6,180)	(27,758)	(8,360,986)
Disposal of a subsidiary	-	-	(161,781)	-	-	-	-	(161,781)
Acquisition of a subsidiary	871,700	3,087,585	6,704,236	9	54,978	8,372	739,663	11,466,543
Transfers and reclassifications	-	211,285	20,723,346	3,557	285,891	11,712	(20,179,970)	1,055,821
Exchange effect	(41,064)	(538,378)	(7,077,088)	(449)	(39,174)	(1,470)	(79,170)	(7,776,793)
As of December 31, 2019	\$1,692,123	\$38,437,588	\$865,547,572	\$65,909	\$6,842,124	\$65,883	\$5,583,516	\$918,234,715

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2019	\$-	\$17,549,256	\$714,286,307	\$45,434	\$5,112,684	\$49,580	\$5,949	\$737,049,210
Depreciation	-	1,542,864	44,307,925	6,105	488,216	2,441	-	46,347,551
Impairment loss	-	-	84,974	-	-	-	-	84,974
Disposals	-	(4,624)	(8,105,713)	(3,563)	(195,766)	(5,371)	(5,949)	(8,320,986)
Disposal of a subsidiary	-	-	(127,455)	-	-	-	-	(127,455)
Transfers and reclassifications	-	-	66,682	-	(325)	514	-	66,871
Exchange effect	-	(136,976)	(4,789,755)	(182)	(21,375)	(1,017)	-	(4,949,305)
As of December 31, 2019	\$-	\$18,950,520	\$745,722,965	\$47,794	\$5,385,434	\$46,147	\$-	\$770,150,860
Net carrying amount:	\$1,692,123	\$19,487,068	\$119,824,607	\$18,115	\$1,458,690	\$19,736	\$5,583,516	\$148,083,855

Certain investments accounted for under the equity method were audited by other independent accountants. Shares of profit or loss of these associates and joint ventures amounted to NT\$1,231 million and NT\$(751) million for the years ended December 31, 2019 and 2018, respectively. Share of other comprehensive income (loss) of these associates and joint ventures amounted to NT\$1,184 million and NT\$(225) million for the years ended December 31, 2019 and 2018, respectively. The balances of investments accounted for under the equity method were NT\$11,704 million and NT\$8,714 million as of December 31, 2019 and 2018, respectively.

None of the aforementioned associates and joint ventures were pledged.

b. Financial information of associates and joint ventures:

There is no individually significant associate or joint venture for the Company. When an associate or a joint venture is a foreign operation, and the functional currency of the foreign entity is different from the Company, an exchange difference arising from translation of the foreign entity will be recognized in other comprehensive income (loss). Such exchange differences recognized in other comprehensive income (loss) in the financial statements for the years ended December 31, 2019 and 2018 were NT\$(18) million and NT\$18 million, respectively, which were not included in the following table.

i. The aggregate amount of the Company's share of its associates that are accounted for using the equity method was as follows:

	For the years ended	
	2019	2018
Income (loss) from continuing operations	\$1,147,495	\$(667,701)
Other comprehensive income (loss)	1,256,622	(476,326)
Total comprehensive income (loss)	\$2,404,117	\$(1,144,027)

ii. The aggregate amount of the Company's share of its joint ventures that are accounted for using the equity method were both nil for the years ended December 31, 2019 and 2018.

c. One of UMC's associates, HSUN CHIEH INVESTMENT CO., LTD., held 441 million shares of UMC's stock as of December 31, 2019 and 2018. Another associate, YANN YUAN INVESTMENT CO., LTD., held 200 million shares and 172 million shares of UMC's stock as of December 31, 2019 and 2018.

b. Assets Subject to Operating Leases(Note):

Cost:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2019	\$452,915	\$2,624,569	\$2,072,285	\$1,319,985	\$4,604,754
Disposals	-	(623)	-	(317)	(940)
Acquisition of a subsidiary	7,051	24,024	-	-	31,075
Transfers and reclassifications	-	-	(81,872)	3,213	(78,659)
Exchange effect	(331)	(10,689)	-	(7,701)	(18,731)
As of December 31, 2019	\$459,635	\$2,637,271	\$1,254,413	\$1,315,180	\$4,537,499

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2019	\$-	\$915,988	\$188,881	\$1,036,003	\$2,140,872
Depreciation	-	106,250	3,827	70,708	180,785
Disposals	-	(334)	-	(317)	(651)
Transfers and reclassifications	-	-	(67,295)	10	(67,285)
Exchange effect	-	(2,868)	-	(3,595)	(6,463)
As of December 31, 2019	\$-	\$1,019,036	\$125,413	\$1,102,809	\$2,247,258
Net carrying amount:					
As of December 31, 2019	\$459,635	\$1,618,235	\$-	\$212,371	\$2,290,241

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

2018

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2018	\$1,314,402	\$38,073,660	\$826,268,919	\$75,782	\$7,675,798	\$52,557	\$2,0761,439	\$894,222,557
Additions	-	-	-	-	-	-	17,579,689	17,579,689
Disposals	-	(64,878)	(2,330,437)	(18,363)	(40,199)	-	-	(2,453,877)
Disposal of a subsidiary	-	-	(224,895)	-	(6,515)	(2,226)	-	(233,636)
Transfers and reclassifications	-	375,854	27,447,023	8,884	433,665	2,049	(27,693,591)	575,884
Exchange effect	-	(78,334)	2,527,895	52	(5,848)	1,069	(96,774)	2,348,060
As of December 31, 2018	\$1,314,402	\$38,306,302	\$853,688,505	\$66,335	\$8,056,901	\$53,449	\$10,550,763	\$912,036,677

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2018	\$-	\$16,960,853	\$665,771,857	\$57,031	\$5,636,982	\$48,204	\$5,949	\$688,480,876
Depreciation	-	1,535,409	47,871,174	6,080	533,628	2,298	-	49,948,589
Disposals	-	(57,812)	(2,286,359)	(17,963)	(25,467)	-	-	(2,387,601)
Disposal of a subsidiary	-	-	(180,843)	-	(5,264)	(2,014)	-	(188,121)
Transfers and reclassifications	-	297	(3,164)	-	2,867	-	-	-
Exchange effect	-	26,497	3,302,523	286	5,941	1,092	-	3,336,339
As of December 31, 2018	\$-	\$18,465,244	\$714,475,188	\$45,434	\$6,148,687	\$49,580	\$5,949	\$739,190,082
Net carrying amount:								
As of December 31, 2018	\$1,314,402	\$19,841,058	\$139,213,317	\$20,921	\$1,908,214	\$3,869	\$10,544,814	\$172,846,595

In the second quarter of 2019, the Company reclassified SOCIALNEX ITALIA 1 S.R.L (SOCIALNEX), a subsidiary, as a disposal group held for sale. As such, the Company performed an impairment test on the cash-generating unit (CGU) composed of property, plant and equipment before reclassifying the CGU as a single disposal group held for sale. The Company, determined the recoverable amount of the CGU based on the net selling price which was categorized to Level 3 and the impairment test revealed the recoverable amount of the CGU to be less than its carrying amount. Thus, the Company recorded in the other operating income and expenses an impairment loss of NT\$85 million for the year ended December 31, 2019, on the CGU to be disposed of from the new business segment. The Company disposed SOCIALNEX in November 2019.

Please refer to Note 8 for property, plant and equipment pledged as collateral.

(8) Leases

The Company leases various properties, such as land (including land use right), buildings, machinery and equipment, transportation equipment and other equipment with lease terms of 1 to 30 years, except for the land use rights with lease term of 50 years. Most lease contracts of land located in R.O.C state that lease payments will be adjusted based on the announced land value. The Company does not have purchase options of leased land at the end of the lease terms.

a. The Company as a lessee

(a) Right-of-use Assets

	As of
	December 31,
	2019
Land (including land use right)	\$5,700,136
Buildings	473,558
Machinery and equipment	2,092,924
Transportation equipment	12,019
Other equipment	12,880
Net	<u>\$8,291,517</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

	For the year
	ended
	December 31,
	2019
Depreciation	\$366,827
Land (including land use right)	87,572
Buildings	180,115
Machinery and equipment	6,001
Transportation equipment	4,030
Other equipment	\$644,545
Total	<u>\$644,545</u>

i. For the year ended December 31, 2019, the Company's addition to right-of-use assets amounted to NT\$264 million.

ii. Please refer to Note 8 for right-of-use assets pledged as collateral.

(b) Lease Liabilities

	As of
	December 31,
	2019
Current	\$569,957
Noncurrent	5,461,068
Total	<u>\$6,031,025</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

Please refer to Note 6(21) for the interest expenses on the lease liabilities.

b. The Company as a lessor

The Company entered into leases on certain property, plant and equipment which are classified as operating leases as they did not transfer substantially all of the risks and rewards incidental to ownership of the underlying assets. The main contracts are to lease the dormitory to the employees with cancellation clauses. Please refer to Note 6(7) for relevant disclosure of property, plant and equipment for operating leases under IFRS 16.

(9) Intangible Assets

2019

Cost:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2019	\$15,012	\$1,125,804	\$4,511,629	\$3,190,116	\$8,842,561
Additions	-	1,666,599	806,915	851,679	3,325,193
Write-off	-	(383,745)	(2,734,355)	(638,815)	(3,756,915)
Disposal of a subsidiary	-	-	-	(93)	(93)
Acquisition of a subsidiary	-	964,903	198,181	155,670	1,318,754
Reclassifications	-	53,661	-	-	53,661
Exchange effect	-	(80,074)	(380,092)	(10,551)	(470,717)
As of December 31, 2019	<u>\$15,012</u>	<u>\$3,347,148</u>	<u>\$2,402,278</u>	<u>\$3,548,006</u>	<u>\$9,312,444</u>

Accumulated Amortization and Impairment:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2019	\$-	\$601,649	\$2,843,411	\$2,405,697	\$5,850,757
Amortization	-	760,010	531,790	874,810	2,166,610
Impairment loss	7,398	-	-	-	7,398
Write-off	-	(383,745)	(2,734,355)	(638,815)	(3,756,915)
Disposal of a subsidiary	-	-	-	(93)	(93)
Reclassifications	-	414	-	-	414
Exchange effect	-	(27,152)	(122,850)	(3,972)	(153,974)
As of December 31, 2019	<u>\$7,398</u>	<u>\$951,176</u>	<u>\$517,996</u>	<u>\$2,637,627</u>	<u>\$4,114,197</u>
Net carrying amount:					
As of December 31, 2019	<u>\$7,614</u>	<u>\$2,395,972</u>	<u>\$1,884,282</u>	<u>\$910,379</u>	<u>\$5,198,247</u>

2018

Cost:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2018	\$15,188	\$1,080,726	\$4,687,751	\$3,565,705	\$9,349,370
Additions	-	-	214,278	612,253	826,531
Write-off	-	(422,591)	(179,418)	(987,841)	(1,589,850)
Disposal of a subsidiary	(176)	-	-	-	(176)
Reclassifications	-	474,127	-	-	474,127
Exchange effect	-	(6,458)	(210,982)	(1)	(217,441)
As of December 31, 2018	\$15,012	\$1,125,804	\$4,511,629	\$3,190,116	\$8,842,561

Accumulated Amortization and Impairment:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2018	\$-	\$670,014	\$2,585,190	\$2,306,657	\$5,561,861
Amortization	-	357,624	468,296	1,086,882	1,912,802
Write-off	-	(422,591)	(179,418)	(987,841)	(1,589,850)
Exchange effect	-	(3,398)	(30,657)	(1)	(34,056)
As of December 31, 2018	\$-	\$601,649	\$2,843,411	\$2,405,697	\$5,850,757

Net carrying amount:

As of December 31, 2018	\$15,012	\$524,155	\$1,668,218	\$784,419	\$2,991,804
-------------------------	----------	-----------	-------------	-----------	-------------

The amortization amounts of intangible assets are as follows:

	For the years ended December 31,	
	2019	2018
Operating costs	\$827,596	\$758,050
Operating expenses	\$1,339,014	\$1,154,752

(10) Short-Term Loans

	As of December 31,	
	2019	2018
Unsecured bank loans	\$8,080,200	\$7,780,552
Unsecured other loans	3,935,006	5,323,256
Total	\$12,015,206	\$13,103,808
	For the years ended	
	December 31,	
	2019	2018
Interest rates applied	0.00%~4.55%	0.00%~4.55%

The Company's unused short-term lines of credit amounted to NT\$64,169 million and NT\$77,658 million as of December 31, 2019 and 2018, respectively.

(11) Bonds Payable

	As of December 31	
	2019	2018
Unsecured domestic bonds payable	\$21,200,000	\$23,700,000
Unsecured convertible bonds payable	17,729,293	18,196,332
Less: Discounts on bonds payable	(147,877)	(518,150)
Total	38,781,416	41,378,182
Less: Current portion	(20,093,825)	(2,499,235)
Net	\$18,687,591	\$38,878,947

a. UMC issued domestic unsecured corporate bonds. The terms and conditions of the bonds were as follows:

Term	Issuance date	Issued amount	Coupon rate	Repayment
Seven-year	In early June 2012	NT\$2,500 million	1.63%	Interest was paid annually and the principal was fully repaid in June 2019.
Five-year	In mid-March 2013	NT\$7,500 million	1.35%	Interest was paid annually and the principal was fully repaid in March 2018.
Seven-year	In mid-March 2013	NT\$2,500 million	1.50%	Interest will be paid annually and the principal will be repayable in March 2020 upon maturity.

(iii) UMC may redeem all, but not part, of the bonds, at the Early Redemption Amount at any time, in the event of certain changes in the R.O.C.'s tax rules which would require UMC to gross up for payments of principal, or to gross up for payments of interest or premium.

(iv) All or any portion of the bonds will be redeemable at Early Redemption Amount at the option of bondholders on May 18, 2018 at 99.25% of the principal amount.

(v) Bondholders have the right to require UMC to redeem all of the bonds at the Early Redemption Amount if UMC's ordinary shares cease to be listed on the Taiwan Stock Exchange.

(vi) In the event that a change of control as defined in the indenture of the bonds occurs to UMC, the bondholders shall have the right to require UMC to redeem the bonds, in whole but not in part, at the Early Redemption Amount.

iv. Terms of Conversion:

(i) Underlying Securities: Ordinary shares of UMC

(ii) Conversion Period: The bonds are convertible at any time on or after June 28, 2015 and prior to May 8, 2020, into UMC ordinary shares; provided, however, that if the exercise date falls within 5 business days from the beginning of, and during, any closed period, the right of the converting holder of the bonds to vote with respect to the shares it receives will be subject to certain restrictions.

(iii) Conversion Price and Adjustment: The conversion price was originally NT\$17.50 per share. The conversion price will be subject to adjustments upon the occurrence of certain events set out in the indenture. The conversion price was NT\$14.2179 per share on December 31, 2019.

v. Redemption on the Maturity Date: On the maturity date, UMC will redeem the bonds at 98.76% of the principal amount unless, prior to such date:

- (i) UMC shall have redeemed the bonds at the option of UMC, or the bonds shall have been redeemed at option of the bondholder;
- (ii) The bondholders shall have exercised the conversion right before maturity; or
- (iii) The bonds shall have been redeemed or repurchased by UMC and cancelled.

In accordance with IAS 32 "Financial Instruments Presentation", the value of the conversion right of the convertible bonds was determined at issuance and recognized in additional paid-in capital-stock options amounting to NT\$1,894 million, after reduction of issuance costs amounting to NT\$9 million. The effective interest rate on the liability component of the convertible bonds was determined to be 2.03%.

During the year ended December 31, 2019, certain bondholders had converted the outstanding principal amount of the convertible bonds totaling US\$15 million into 33 million shares, of which capital increase share registration procedures have not been completed and were classified as capital collected in advance.

Term	Issuance date	Issued amount	Coupon rate	Repayment
Seven-year	In mid-June 2014	NT\$2,000 million	1.70%	Interest will be paid annually and the principal will be repayable in June 2021 upon maturity.
Ten-year	In mid-June 2014	NT\$3,000 million	1.95%	Interest will be paid annually and the principal will be repayable in June 2024 upon maturity.
Five-year	In late March 2017	NT\$6,200 million	1.15%	Interest will be paid annually and the principal will be repayable in March 2022 upon maturity.
Seven-year	In late March 2017	NT\$2,100 million	1.43%	Interest will be paid annually and the principal will be repayable in March 2024 upon maturity.
Five-year	In early October 2017	NT\$2,000 million	0.94%	Interest will be paid annually and the principal will be repayable in October 2022 upon maturity.
Seven-year	In early October 2017	NT\$3,400 million	1.13%	Interest will be paid annually and the principal will be repayable in October 2024 upon maturity.

b. On May 18, 2015, UMC issued SGX-ST listed currency linked zero coupon convertible bonds. The terms and conditions of the bonds were as follows:

i. Issue Amount: US\$600 million

ii. Period: May 18, 2015 ~ May 18, 2020 (Maturity date)

iii. Redemption:

(i) UMC may redeem the bonds, in whole or in part, after 3 years of the issuance and prior to the maturity date, at the principal amount of the bonds with an interest calculated at the rate of -0.25% per annum (the Early Redemption Amount) if the closing price of the ordinary shares of UMC on the TWSE, for a period of 20 out of 30 consecutive trading days, the last of which occurs not more than 5 days prior to the date upon which notice of such redemption is published, is at least 125% of the conversion price. The Early Redemption Price will be converted into NTD based on the Fixed Exchange Rate (NTD 30.708=USD 1.00), and this fixed NTD amount will be converted using the prevailing rate at the time of redemption for payment in USD.

(ii) UMC may redeem the bonds, in whole, but not in part, at the Early Redemption Amount if at least 90% in principal amount of the bonds has already been converted, redeemed or repurchased and cancelled.

(12) Long-Term Loans

a. Details of long-term loans as of December 31, 2019 and 2018 are as follows:

Lenders	As of December 31,		Redemption
	2019	2018	
Secured Long-Term Loan from Mega International Commercial Bank (1)	\$3,827	\$6,013	Effective July 3, 2017 to July 5, 2021. Interest-only payment for the first year. Principal is repaid in 17 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Mega International Commercial Bank (2)	10,380	-	Effective October 24, 2019 to October 24, 2024. Interest-only payment for the first year. Principal is repaid in 17 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Taiwan Cooperative Bank (1)	1,288	3,006	Effective August 10, 2015 to August 10, 2020. Interest-only payment for the first year. Principal is repaid in 17 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Taiwan Cooperative Bank (2)	71,351	83,243	Effective October 19, 2015 to October 19, 2025. Interest-only payment for the first year. Principal is repaid in 37 quarterly payments with monthly interest payments.
Secured Long-Term Loan from Taiwan Cooperative Bank (3)	29,896	-	Repayable monthly from May 31, 2019 to May 31, 2023 with monthly interest payments.
Secured Syndicated Loans from China Development Bank and 6 others	26,892,457	28,987,895	Effective October 20, 2016 to October 20, 2024. Interest-only payment for the first and the second year. Principal is repaid in 13 semi-annual payments with semi-annual interest payments.
Unsecured Syndicated Loans from Bank of Taiwan and 7 others	-	747,900	Repayable semi-annually from February 6, 2017 to February 6, 2020 with monthly interest payments.
Unsecured Long-Term Loan from Bank of Taiwan	-	1,000,000	Repayable quarterly from March 23, 2019 to December 23, 2021 with monthly interest payments.
Unsecured Long-Term Loan from CTBC Bank	747,900	-	Effective January 10, 2019 to September 30, 2021. Interest-only payment for the first and nine months. Principal is repaid in full at the end of the term with monthly interest payments.

Lenders	As of December 31,		Redemption
	2019	2018	
Unsecured Long-Term Loan from ICBC Bank	\$1,744,975	\$-	Repayable semi-annually from March 10, 2020 to September 9, 2021 with quarterly interest payments.
Unsecured Revolving Loan from Mega International Commercial Bank (Note A)	2,000,000	-	Repayable semi-annually from October 16, 2020 to April 16, 2022 with monthly interest payments.
Unsecured Revolving Loan from Chang Hwa Commercial Bank (Note B)	2,400,000	-	Repayable quarterly from January 26, 2021 to October 26, 2022 with monthly interest payments.
Subtotal	33,902,074	30,828,057	
Less: Administrative expenses from syndicated loans	-	(1,842)	
Less: Current portion	(4,701,775)	(2,622,161)	
Total	\$29,200,299	\$28,204,054	
Interest rates applied	For the years ended December 31,		
	2019	2018	
	0.55%~5.56%	0.99%~5.56%	

Note A: UMC entered into a 5-year loan agreement with Mega International Commercial Bank, effective from October 17, 2016. The agreement offered UMC a revolving line of credit of NT\$3 billion. This line of credit will be reduced starting from the end of the two years and six months after the first use and every six months thereafter, with a total of six adjustments. The expiration date of the agreement is April 16, 2022. As of December 31, 2019 and 2018, the unused line of credit were NT\$0.5 billion and NT\$3 billion, respectively.

Note B: UMC entered into a 5-year loan agreement with Chang Hwa Commercial Bank, effective from November 2, 2016. The agreement offered UMC a revolving line of credit of NT\$3 billion. This line of credit will be reduced starting from the end of the third year after the first use and every three months thereafter, with a total of nine adjustments. The expiration date of the agreement is October 27, 2022. As of December 31, 2019 and 2018, the unused line of credit were NT\$0.6 billion and NT\$3 billion, respectively.

b. Please refer to Note 8 for property, plant and equipment pledged as collateral for long-term loans.

(13) Post-Employment Benefitsa. Defined contribution plan

The employee pension plan under the Labor Pension Act of the R.O.C. is a defined contribution plan. Pursuant to the plan, UMC and its domestic subsidiaries make monthly contributions of 6% based on each individual employee's salary or wage to employees' pension accounts. Pension benefits for employees of the Singapore branch and subsidiaries overseas are provided in accordance with the local regulations. Total pension expenses of NT\$1,369 million and NT\$1,339 million are contributed by the Company for the years ended December 31, 2019 and 2018, respectively.

b. Defined benefit plan

i. The employee pension plan mandated by the Labor Standards Act of the R.O.C. is a defined benefit plan. The pension benefits are disbursed based on the units of service years and average monthly salary prior to retirement according to the Labor Standards Act. Two units per year are awarded for the first 15 years of services while one unit per year is awarded after the completion of the 15th year and the total units will not exceed 45 units. The Company contributes an amount equivalent to 2% of the employees' total salaries and wages on a monthly basis to the pension fund deposited with the Bank of Taiwan under the name of a pension fund supervisory committee. The pension fund is managed by the government's designated authorities and therefore is not included in the Company's consolidated financial statements. For the years ended December 31, 2019 and 2018, total pension expenses of NT\$59 million and NT\$69 million, respectively, were recognized by the Company.

ii. Movements in present value of defined benefit obligation and fair value of plan assets are as follows:

Movements in present value of defined benefit obligation during the year:

	For the years ended December 31,	
	2019	2018
Defined benefit obligation at beginning of year	\$ (5,620,509)	\$ (5,671,058)
Items recognized as profit or loss:		
Service cost	(21,043)	(24,477)
Interest cost	(51,146)	(61,247)
Subtotal	(72,189)	(85,724)

	For the years ended December 31,	
	2019	2018
Remeasurements recognized in other comprehensive income (loss):		
Arising from changes in financial assumptions	\$ (114,976)	\$ (91,350)
Experience adjustments	180,095	(5,907)
Subtotal	65,119	(97,257)
Benefits paid	216,510	233,530
Defined benefit obligation at end of year	\$ (5,411,069)	\$ (5,620,509)

Movements in fair value of plan assets during the year:

	For the years ended December 31,	
	2019	2018
Beginning balance of fair value of plan assets	\$1,453,335	\$1,532,539
Items recognized as profit or loss:		
Interest income on plan assets	13,225	16,552
Contribution by employer	94,362	95,577
Benefits paid	(216,510)	(233,530)
Remeasurements recognized in other comprehensive income (loss):		
Return on plan assets, excluding amounts included in interest income	41,284	42,197
Fair value of plan assets at end of year	\$1,385,696	\$1,453,335

The actual returns on plan assets of the Company for the years ended December 31, 2019 and 2018 were NT\$55 million and NT\$59 million, respectively.

iii. The defined benefit plan recognized on the consolidated balance sheets are as follows:

	As of December 31,	
	2019	2018
Present value of the defined benefit obligation	\$ (5,411,069)	\$ (5,620,509)
Fair value of plan assets	1,385,696	1,453,335
Funded status	(4,025,373)	(4,167,174)
Net defined benefit liabilities, noncurrent recognized on the consolidated balance sheets	\$ (4,025,373)	\$ (4,167,174)

iv. The major categories of plan assets as a percentage of the fair value of the total plan assets are as follows:

	As of December 31,	
	2019	2018
Cash	21%	17%
Equity instruments	45%	51%
Debt instruments	24%	24%
Others	10%	8%

Employee pension fund is deposited under a trust administered by the Bank of Taiwan. The overall expected rate of return on assets is determined based on historical trend and actuaries' expectations on the assets' returns in the market over the obligation period. Furthermore, the utilization of the fund is determined by the labor pension fund supervisory committee, which also guarantees the minimum earnings to be no less than the earnings attainable from interest rates offered by local banks for two-year time deposits.

v. The principal underlying actuarial assumptions are as follows:

	As of December 31,	
	2019	2018
Discount rate	0.67%	0.91%
Rate of future salary increase	3.50%	3.50%

vi. Expected future benefit payments are as follows:

Year	As of December 31, 2019
2020	\$230,468
2021	252,969
2022	298,483
2023	328,958
2024	377,022
2025 and thereafter	4,263,427
Total	\$5,751,327

The Company expects to make pension fund contribution of NT\$93 million in 2020. The weighted-average durations of the defined benefit obligation are 9 years and 10 years as of December 31, 2019 and 2018, respectively.

vii. Sensitivity analysis:

	As of December 31, 2019	
	Discount rate	Rate of future salary increase
	0.5% increase	0.5% increase
	0.5% decrease	0.5% decrease
Decrease (increase) in defined benefit obligation	\$235,666	\$(215,694)
		\$205,388

	As of December 31, 2018	
	Discount rate	Rate of future salary increase
	0.5% increase	0.5% increase
	0.5% decrease	0.5% decrease
Decrease (increase) in defined benefit obligation	\$262,909	\$(281,037)
		\$231,751

The sensitivity analyses above have been determined based on a method that extrapolates the impact on the net defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

(14) Deferred Government Grants

	As of December 31,	
	2019	2018
Beginning balance	\$17,480,904	\$14,595,546
Arising during the period	617,685	7,129,770
Recorded in profit or loss:		
Other operating income	(4,062,148)	(3,885,722)
Exchange effect	(484,888)	(358,690)
Ending balance	\$13,551,553	\$17,480,904
Current	\$3,780,579	\$3,832,124
Noncurrent	9,770,974	13,648,780
Total	\$13,551,553	\$17,480,904

The significant government grants related to equipment acquisitions received by the Company are amortized as income over the useful lives of related equipment, and recorded in the net other operating income and expenses.

(15) Refund Liabilities (classified under other current liabilities)

	As of December 31,	
	2019	2018
Refund liabilities	\$2,078,075	\$1,213,476

(16) Equity

a. Capital stock:

i. UMC had 26,000 million common shares authorized to be issued as of December 31, 2019 and 2018, of which 11,724 million shares and 12,424 million shares were issued as of December 31, 2019 and 2018, respectively, each at a par value of NT\$10.

ii. UMC had 138 million and 143 million ADSs, which were traded on the NYSE as of December 31, 2019 and 2018, respectively. The total number of common shares of UMC represented by all issued ADSs were 692 million shares and 717 million shares as of December 31, 2019 and 2018, respectively. One ADS represents five common shares.

iii. On June 28, 2019, UMC cancelled 400 million shares of treasury stock, which were repurchased during the period from May 13 to June 13, 2016 for the purpose of transferring to employees, and repurchased during the period from April 26 to June 13, 2019 for the purpose of maintaining UMC's credit and its stockholders' rights and interests.

iv. On March 11, 2019, UMC cancelled 300 million shares of treasury stock, which were repurchased during the period from November 7, 2018 to January 4, 2019 for the purpose of maintaining UMC's credit and its stockholders' rights and interests.

v. On August 27, 2018, UMC cancelled 200 million shares of treasury stock, which were repurchased during the period from March 12 to May 4, 2018 for the purpose of maintaining UMC's credit and its stockholders' rights and interests.

vi. Please refer to Note 6(11) for the Company's conversion of overseas unsecured convertible bonds into ordinary shares of UMC for the year ended December 31, 2019.

b. Treasury stock:

i. UMC carried out a treasury stock program and repurchased its shares from the centralized securities exchange market. The purpose for the repurchase and changes in treasury stock during the years ended December 31, 2019 and 2018 were as follows:

For the year ended December 31, 2019
(In thousands of shares)

Purpose	As of January 1, 2019	Increase	Decrease	As of December 31, 2019
For transfer to employees	200,000	-	200,000	-
To maintain UMC's credit and its stockholders' rights and interests	280,000	220,000	500,000	-
	480,000	220,000	700,000	-

For the year ended December 31, 2018
(In thousands of shares)

Purpose	As of January 1, 2018	Increase	Decrease	As of December 31, 2018
For transfer to employees	400,000	-	200,000	200,000
To maintain UMC's credit and its stockholders' rights and interests	-	480,000	200,000	280,000
	400,000	480,000	400,000	480,000

ii. According to the Securities and Exchange Law of the R.O.C., the total shares of treasury stock shall not exceed 10% of UMC's issued stock, and the total purchase amount shall not exceed the sum of the retained earnings, additional paid-in capital-premiums and realized additional paid-in capital. As such, the number of shares of treasury stock that UMC held as of December 31, 2019 and 2018, did not exceed the limit.

iii. In compliance with Securities and Exchange Law of the R.O.C., treasury stock held by the parent company should not be pledged, nor should it be entitled to voting rights or receiving dividends. Stock held by subsidiaries is treated as treasury stock. These subsidiaries have the same rights as other stockholders except for subscription to new stock issuance and voting rights.

iv. UMC's subsidiary, FORTUNE VENTURE CAPITAL CORP., held shares of UMC's stock through acquiring shares of UNITED SILICON INC. in 1997, and these shares were converted to UMC's stock in 2000 as a result of the Company's 5 in 1 merger. As of December 31, 2019 and 2018, UMC's subsidiary, FORTUNE VENTURE CAPITAL CORP., held 16 million shares of UMC's stock. The closing price on December 31, 2019 and 2018, were NT\$16.45 and NT\$11.25, respectively.

c. Retained earnings and dividend policies:

According to UMC's Articles of Incorporation, current year's earnings, if any, shall be distributed in the following order:

- i. Payment of taxes.
- ii. Making up loss for preceding years.
- iii. Setting aside 10% for legal reserve, except for when accumulated legal reserve has reached UMC's paid-in capital.
- iv. Appropriating or reversing special reserve by government officials or other regulations.
- v. The remaining, plus the previous year's unappropriated earnings, shall be distributed according to the distribution plan proposed by the Board of Directors according to the dividend policy and submitted to the stockholders' meeting for approval.

Because UMC conducts business in a capital intensive industry and continues to operate in its growth phase, the dividend policy of UMC shall be determined pursuant to factors such as the investment environment, its funding requirements, domestic and overseas competitive landscape and its capital expenditure forecast, as well as stockholders' interest, balancing dividends and UMC's long-term financial planning. The Board of Directors shall propose the distribution plan and submit it to the stockholders' meeting every year. The distribution of stockholders' dividend shall be allocated as cash dividend in the range of 20% to 100%, and stock dividend in the range of 0% to 80%.

According to the regulations of Taiwan FSC, UMC is required to appropriate a special reserve in the amount equal to the sum of debit elements under equity, such as unrealized loss on financial instruments and debit balance of exchange differences on translation of foreign operations, at every year-end. Such special reserve is prohibited from distribution. However, if any of the debit elements is reversed, the special reserve in the amount equal to the reversal may be released for earnings distribution or offsetting accumulated deficits.

The distribution of earnings for 2018 was approved by the stockholders' meeting held on June 12, 2019, while the distribution of earnings for 2019 was approved by the Board of Directors' meeting on February 26, 2020. The details of distribution are as follows:

	Appropriation of earnings (in thousand NT dollars)		Cash dividend per share (NT dollars)	
	2019	2018	2019	2018
Legal reserve	\$614,784	\$707,299		
Special reserve	(3,491,626)	14,513,940		
Cash dividends	9,765,155	6,916,105	\$0.75	\$0.58

The aforementioned 2018 distribution approved by stockholders' meeting was consistent with the resolutions of meeting of Board of Directors held on March 6, 2019.

The cash dividend per share for 2018 was adjusted to NT\$0.58989396 per share according to the resolution of the Board of Directors' meeting on June 19, 2019. The adjustment was made for the decrease in outstanding common shares due to the share repurchase program.

The appropriation of 2019 unappropriated retained earnings has not yet been approved by the stockholder's meeting as of the reporting date. Information relevant to the Board of Directors' meeting recommendations and stockholders' meeting approval can be obtained from the "Market Observation Post System" on the website of the TWSE.

Please refer to Note 6(19) for information on the employees and directors' compensation.

d. Non-controlling interests:

	For the years ended December 31,	
	2019	2018
Adjusted balance as of January 1	\$466,768	\$958,405
Attributable to non-controlling interests:		
Net loss	(3,578,847)	(4,429,938)
Other comprehensive income (loss)	(15,213)	(103,894)
Changes in subsidiaries' ownership	24,740	(278,613)
Disposal of a subsidiary	-	(7,074)
Others	3,512,617	4,327,882
Ending balance	\$410,065	\$466,768

(17) Share-Based Payment

In order to attract, retain talents and reward the employees for their productivity and loyalty, the Company carried out a compensation plan to offer 200 million shares of treasury stock to employees in August 2018. The compensation cost for the shared-based payment was measured at fair value, having recognized in expense the difference between the closing quoted market price of the shares at the grant date and the cash received from employees. The closing quoted market price of the Company's shares on the grant date was NT\$16.95 per share. For the stocks vested on the date of grant, the Company recognized the entire compensation cost on the grant date, whereas for the stocks with requisite service conditions to vest at the end of one or two-years from the date of grant, the Company recognizes the compensation cost on a straight-line basis over the period in which the services conditions are fulfilled, together with a corresponding increase in equity. As such, for the years ended December 31, 2019 and 2018, total compensation cost of NT\$366 million and NT\$696 million, respectively, were recognized by the Company.

(18) Operating Revenues

a. Disaggregation of revenue

i. By operating segments

For the year ended December 31, 2019					
	Wafer Fabrication	New Business	Subtotal	Adjustment and Elimination	Consolidated
Revenue from contracts with customers	\$148,123,306	\$78,335	\$148,201,641	\$-	\$148,201,641
The timing of revenue recognition:					
At a point in time	\$146,978,699	\$78,335	\$147,057,034	\$-	\$147,057,034
Over time	1,144,607	-	1,144,607	-	1,144,607
Total	\$148,123,306	\$78,335	\$148,201,641	\$-	\$148,201,641

For the year ended December 31, 2018

	Wafer Fabrication	New Business	Subtotal	Adjustment and Elimination	Consolidated
Revenue from contracts with customers	\$151,023,932	\$247,929	\$151,271,861	\$(19,290)	\$151,252,571
The timing of revenue recognition:					
At a point in time	\$146,247,350	\$247,929	\$146,495,279	\$(19,290)	\$146,475,989
Over time	4,776,582	-	4,776,582	-	4,776,582
Total	\$151,023,932	\$247,929	\$151,271,861	\$(19,290)	\$151,252,571

ii. By geography

For the year ended December 31, 2019								
	Taiwan	Singapore	China (includes Hong Kong)	Japan	USA	Europe	Others	Total
Revenue from contracts with customers	\$53,966,435	\$23,979,343	\$19,115,188	\$9,855,772	\$19,957,615	\$6,900,339	\$14,426,949	\$148,201,641
The timing of revenue recognition:								
At a point in time	\$53,905,377	\$23,976,786	\$18,987,848	\$9,684,186	\$19,946,286	\$6,138,812	\$14,417,740	\$147,057,035
Over time	61,058	2,557	127,340	171,586	11,329	761,527	9,209	1,144,606
Total	\$53,966,435	\$23,979,343	\$19,115,188	\$9,855,772	\$19,957,615	\$6,900,339	\$14,426,949	\$148,201,641

For the year ended December 31, 2018

	Taiwan	Singapore	China (includes Hong Kong)	Japan	USA	Europe	Others	Total
Revenue from contracts with customers	\$55,092,681	\$24,820,196	\$18,504,881	\$5,896,313	\$23,555,105	\$12,527,894	\$10,855,501	\$151,252,571
The timing of revenue recognition:								
At a point in time	\$54,963,771	\$24,791,908	\$14,889,672	\$5,889,277	\$23,536,756	\$11,551,052	\$10,853,553	\$146,475,989
Over time	128,910	28,288	3,615,209	7,036	18,349	976,842	1,948	4,776,582
Total	\$55,092,681	\$24,820,196	\$18,504,881	\$5,896,313	\$23,555,105	\$12,527,894	\$10,855,501	\$151,252,571

The geographic breakdown of the Company's operating revenues was based on the location of the Company's customers.

According to UMC's Articles of Incorporation, the employees and directors' compensation shall be distributed in the following order:

UMC shall allocate no less than 5% of profit as employees' compensation and no more than 0.1% of profit as directors' compensation for each profitable fiscal year after offsetting any cumulative losses. The aforementioned employees' compensation will be distributed in shares or cash. The employees of UMC's subsidiaries who fulfill specific requirements stipulated by the Board of Directors may be granted such compensation. Directors may only receive compensation in cash. UMC may, by a resolution adopted by a majority vote at a meeting of the Board of Directors attended by two-thirds of the total number of directors, distribute the aforementioned employees and directors' compensation and report to the stockholders' meeting for such distribution.

The Company recognizes the employees and directors' compensation in the profit or loss during the periods when earned for the years ended December 31, 2019 and 2018. The Board of Directors estimates the amount by taking into consideration the Articles of Incorporation, government regulations and industry averages. If the Board of Directors resolves to distribute employee compensation through stock, the number of stock distributed is calculated based on total employee compensation divided by the closing price of the day before the Board of Directors meeting. If the Board of Directors subsequently modifies the estimates significantly, the Company will recognize the change as an adjustment in the profit or loss in the subsequent period.

The distributions of employees and directors' compensation for 2018 were reported to the stockholders' meeting on June 12, 2019, while the distributions of employees and directors' compensation for 2019 were approved through the Board of Directors meeting on February 26, 2020. The details of distribution are as follows:

	2019	2018
Employees' compensation – Cash	\$1,132,952	\$1,400,835
Directors' compensation	10,259	7,624

The aforementioned employees and directors' compensation for 2018 reported during the stockholders' meeting were consistent with the resolutions of the Board of Directors meeting held on March 6, 2019.

Information relevant to the aforementioned employees and directors' compensation can be obtained from the "Market Observation Post System" on the website of the TWSE.

(20) Net Other Operating Income and Expenses

	For the years ended December 31,	
	2019	2018
Rental income from property	\$200,351	\$199,505
Gain on disposal of property, plant and equipment	43,036	136,743
Government grants	5,366,907	5,220,746
Impairment loss	(84,974)	-
Property, plant and equipment	(7,398)	-
Goodwill	(335,760)	(440,110)
Others	-	-
Total	<u>\$5,182,162</u>	<u>\$5,116,884</u>

(21) Non-Operating Income and Expenses

a. Other gains and losses

	For the years ended December 31,	
	2019	2018
Gain (loss) on valuation of financial assets and liabilities at fair value through profit or loss	\$1,279,931	\$(1,167,735)
Impairment loss	(25,762)	(46,225)
Investments accounted for under the equity method	(16,293)	(19,286)
Loss on disposal of investments	19,423	104,956
Others	-	-
Total	<u>\$1,257,299</u>	<u>\$(1,128,290)</u>

b. Finance costs

	For the years ended December 31,	
	2019	2018
Interest expenses	\$672,902	\$710,663
Bonds payable	1,808,633	1,782,544
Bank loans	178,112	-
Lease liabilities (Note)	274,168	275,465
Others	63,828	82,553
Financial expenses	<u>\$2,997,643</u>	<u>\$2,851,225</u>
Total	<u>\$2,997,643</u>	<u>\$2,851,225</u>

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

(22) Components of Other Comprehensive Income (Loss)

	For the year ended December 31, 2019			
	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss) before tax	Other comprehensive income (loss) net of tax
Items that will not be reclassified subsequently to profit or loss:				
Remeasurements of defined benefit pension plans	\$106,403	\$-	\$106,403	\$85,122
Unrealized gains or losses from equity instruments	5,486,209	-	5,486,209	5,349,230
investments measured at fair value through other comprehensive income				
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss	1,231,722	-	1,231,722	1,231,722
Exchange differences on translation of foreign operations	(3,292,023)	14,085	(3,277,938)	(3,264,536)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss	8,754	6,594	15,348	7,247
Total other comprehensive income (loss)	\$3,541,065	\$20,679	\$3,561,744	\$3,408,785

	For the year ended December 31, 2018			
	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss) before tax	Other comprehensive income (loss) net of tax
Items that will not be reclassified subsequently to profit or loss:				
Remeasurements of defined benefit pension plans	\$(55,060)	\$-	\$(55,060)	\$(22,413)
Unrealized gains or losses from equity instruments	1,454,018	-	1,454,018	1,498,544
investments measured at fair value through other comprehensive income				
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	(2,572)	-	(2,572)	(2,058)
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss	(475,139)	-	(475,139)	(440,442)
Exchange differences on translation of foreign operations	(47,417)	408	(47,009)	(65,893)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss	(11,045)	(12,897)	(23,942)	(17,794)
Total other comprehensive income (loss)	\$862,785	\$(12,489)	\$850,296	\$949,944

(23) Income Tax

a. The major components of income tax expense for the years ended December 31, 2019 and 2018 were as follows:

	For the years ended	
	December 31, 2019	2018
i. Income tax expense (benefit) recorded in profit or loss		
Current income tax expense (benefit):		
Current income tax charge	\$622,394	\$584,419
Adjustments in respect of current income tax of prior periods	(1,033,780)	(1,111,893)
Deferred income tax expense (benefit):		
Deferred income tax related to origination and reversal of temporary differences	468,407	1,390,698
Deferred income tax related to recognition and derecognition of tax losses and unused tax credits	(243,981)	(335,367)
Deferred income tax related to changes in tax rates	-	(848,223)
Adjustment of prior year's deferred income tax	121,189	(2,744)
Deferred income tax arising from write-down or reversal of write-down of deferred tax assets	(327,359)	(135,543)
Income tax benefit recorded in profit or loss	<u>\$(393,130)</u>	<u>\$(458,653)</u>

ii. Income tax related to components of other comprehensive income (loss)

(i) Items that will not be reclassified subsequently to profit or loss:

	For the years ended	
	December 31, 2019	2018
Remeasurements of defined benefit pension plans	\$(21,281)	\$11,012
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	(136,979)	31,998
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	-	514
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss	-	39,742
Deferred income tax related to changes in tax rates	-	29,118
Income tax related to items that will not be reclassified subsequently to profit or loss	<u>\$(158,260)</u>	<u>\$112,384</u>

(ii) Items that may be reclassified subsequently to profit or loss:

	For the years ended	
	December 31, 2019	2018
Exchange differences on translation of foreign operations	\$13,402	\$(21,672)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss	(8,101)	1,701
Deferred income tax related to changes in tax rates	-	7,235
Income tax related to items that may be reclassified subsequently	<u>\$5,301</u>	<u>\$(12,736)</u>

iii. Deferred income tax charged directly to equity

	For the years ended	
	December 31, 2019	2018
Reversal of temporary difference arising from initial recognition of the equity component of the compound financial instrument	\$(45)	\$-
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	(514)	-
Deferred income tax related to changes in tax rates	-	(56,759)
Total	<u>\$(559)</u>	<u>\$(56,759)</u>

b. A reconciliation between income tax expense and income before tax at UMC's applicable tax rate was as follows:

	For the years ended	
	December 31, 2019	2018
Income before tax	\$5,735,637	\$2,184,399
At UMC's statutory income tax rate	1,147,128	436,880
Adjustments in respect of current income tax of prior periods	(1,033,780)	(1,111,893)
Net changes in loss carry-forward and investment tax credits	1,911,970	2,239,058
Adjustment of deferred tax assets/liabilities for write-downs/reversals and different jurisdictional tax rates	(146,067)	26,122

	For the years ended December 31,	
	2019	2018
Balance as of January 1	\$4,422,216	\$4,439,877
Impact of retroactive applications	93	17,843
Adjusted balance as of January 1	4,422,309	4,457,720
Acquisition from business combinations	1,542,895	-
Amounts recognized in profit or loss during the period	(18,256)	(68,821)
Amounts recognized in other comprehensive income (loss)	(152,959)	99,648
Amounts recognized in equity	(559)	(56,759)
Exchange adjustments	(73,213)	(9,572)
Balance as of December 31	\$5,720,217	\$4,422,216

d. Movement of deferred tax

	For the years ended December 31,	
	2019	2018
Tax effect of non-taxable income and non-deductible expenses:		
Tax exempt income	\$(1,778,820)	\$(451,589)
Investment gain	(477,043)	(835,669)
Dividend income	(139,093)	(112,810)
Others	110,991	140,278
Basic tax	3,215	-
Deferred income tax related to changes in tax rates	-	(848,223)
Effect of different tax rates applicable to UMC and its subsidiaries	(102,608)	(118,404)
Taxes withheld in other jurisdictions	19,749	48,291
Others	91,228	129,306
Income tax benefit recorded in profit or loss	\$(393,130)	\$(458,653)

c. Significant components of deferred income tax assets and liabilities were as follows:

	As of December 31,	
	2019	2018
Deferred income tax assets		
Depreciation	\$1,658,688	\$1,930,388
Loss carry-forward	1,310,300	502,331
Pension	800,734	825,792
Refund liabilities	339,185	232,854
Allowance for inventory valuation losses	628,725	416,270
Investment loss	257,689	341,096
Unrealized profit on intercompany sales	1,568,645	1,703,942
Investment tax credits	475,952	336,869
Others	767,665	98,367
Total deferred income tax assets	7,807,583	6,387,909

Deferred income tax liabilities		
Unrealized exchange gain	(565,175)	(535,595)
Depreciation	(550,772)	(440,524)
Investment gain	(568,683)	(499,506)
Convertible bond option	(69,484)	(139,693)
Amortizable assets	(321,459)	(342,607)
Others	(11,793)	(7,768)
Total deferred income tax liabilities	(2,087,366)	(1,965,693)
Net deferred income tax assets	\$5,720,217	\$4,422,216

e. The Company is subject to taxation in Taiwan and other foreign jurisdictions. As of December 31, 2019, income tax returns of UMC and its subsidiaries in Taiwan have been examined by the tax authorities through 2016, while in other foreign jurisdictions, relevant tax authorities have completed the examination through 2012. There is an uncertain tax position that the outcome of the income tax returns of certain companies within the Company may not be accepted by the tax authorities of the respective countries of operations. For the recognition and measurement of deferred income tax and current income tax which involved significant accounting judgments, estimates and assumptions, please refer to Note 5(5).

f. UMC was granted income tax exemption for several periods with respect to income derived from the expansion of operations. The income tax exemption will expire on December 31, 2020.

g. The information of the unused tax loss carry-forward for which no deferred income tax assets have been recognized was as follows:

	As of December 31,	
	2019	2018
Expiry period		
1~5 years	\$38,708,327	\$27,072,604
6~10 years	9,588,002	10,799,310
more than 10 years	-	5,043
Total	\$48,296,329	\$37,876,957

- h. As of December 31, 2019 and 2018, deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$2,881 million and NT\$5,964 million, respectively.
- i. As of December 31, 2019 and 2018, the taxable temporary differences of unrecognized deferred tax liabilities associated with investments in subsidiaries amounted to NT\$11,389 million and NT\$11,036 million, respectively.
- j. According to the amendments to the R.O.C. Income Tax Act, effective from 2018, the corporate income tax rate is raised from 17% to 20%, and the 10% undistributed earnings tax is lowered to 5%.

(24) Earnings Per Share

a. Earnings per share-basic

	For the years ended December 31,	
	2019	2018
Net income attributable to the parent company	\$9,707,614	\$7,072,990
Weighted-average number of ordinary shares for basic earnings per share (thousand shares)	11,785,108	12,103,880
Earnings per share-basic (NTD)	\$0.82	\$0.58

b. Earnings per share-diluted

	For the years ended December 31,	
	2019	2018
Net income attributable to the parent company	\$9,707,614	\$7,072,990
Effect of dilution	289,121	283,349
Income attributable to stockholders of the parent	\$9,996,735	\$7,356,339
Weighted-average number of common stocks for basic earnings per share (thousand shares)	11,785,108	12,103,880
Effect of dilution	90,047	137,511
Employees' compensation	1,295,729	1,243,599
Unsecured convertible bonds	13,170,884	13,484,990
Weighted-average number of common stocks after dilution (thousand shares)	\$0.76	\$0.55
Earnings per share-diluted (NTD)		

(25) Reconciliation of Liabilities Arising from Financing ActivitiesFor the year ended December 31, 2019:

Items	As of January 1, 2019	Non-cash changes			As of December 31, 2019
		Cash Flows	Foreign exchange (Note A)	Others (Note A)	
Short-term loans	\$13,103,808	\$(993,723)	\$(368,507)	\$273,628	\$12,015,206
Long-term loans (current portion included)	30,826,215	3,876,991	(802,975)	1,843	33,902,074
Bonds payable (current portion included)	41,378,182	(2,500,000)	-	(96,766)	38,781,416
Guarantee deposits (current portion included)	665,793	252,269	(2,021)	(619,347)	296,694
Lease liabilities	6,006,457	(633,488)	(78,432)	736,488 (Note C)	6,031,025
Other financial liabilities-noncurrent	20,410,355	-	(698,127)	381,213	20,093,441

For the year ended December 31, 2018:

Items	As of January 1, 2018	Non-cash changes			As of December 31, 2018
		Cash Flows	Foreign exchange (Note A)	Others (Note A)	
Short-term loans	\$25,445,540	\$(12,288,248)	\$(292,466)	\$238,982	\$13,103,808
Long-term loans (current portion included)	32,165,336	(1,880,197)	556,777	(15,701)	30,826,215
Bonds payable (current portion included)	48,517,631	(7,500,000)	-	360,551	41,378,182
Guarantee deposits (current portion included)	564,576	88,131	13,086	-	665,793
Other financial liabilities-noncurrent	20,486,119	-	(456,551)	380,787	20,410,355

Note A: Other non-cash changes mainly consisted of discount amortization measured by the effective interest method.

Note B: Please refer to Note 9(5) for more details on other financial liabilities-noncurrent.

Note C: Including the impact from acquisition of a subsidiary.

(26) Business Combinations

UNITED SEMICONDUCTOR JAPAN CO., LTD. (USJC)

The Company exercised the call option of a joint venture agreement between FUJI SEMICONDUCTOR LIMITED (FSL) to acquire 84.1% ownership interest in MIE FUJITSU SEMICONDUCTOR LIMITED (MIFS) for JPY 54.4 billion on October 1, 2019. The Company previously held 15.9% of ownership interest in MIFS. MIFS became a wholly-owned subsidiary of the Company and was renamed as USJC upon completion of the acquisition. USJC is a 300mm fab in Japan that is currently manufacturing 90nm, 65nm and 40nm products. The fab fits the Company's specialty technology focus and long-term growth projections. USJC will increase the Company's foundry market share, provide business synergies and benefit from economies of scale while broadening the Company's comprehensive specialty and logic technologies to serve Japanese and international customers.

Consideration Transferred:	
Cash	\$15,711,370
Fair value of previously held equity interest immediately before acquisition	2,303,988
Gains or losses on hedging instruments	2,572
Total	<u>\$18,017,930</u>
Cash flows analysis of acquisition:	
Cash Consideration	\$15,711,370
Net cash acquired from the subsidiary	<u>(2,910,389)</u>
Net cash outflows from acquisition	<u>\$12,800,981</u>

The fair value of the identifiable assets and liabilities of USJC as of the date of acquisition were:

	Fair value recognized on the acquisition date
Assets	
Cash and cash equivalents	\$2,910,389
Accounts receivable	3,561,827
Inventories	2,428,616
Property, plant and equipment	11,497,618
Right-of-use assets	479,547
Intangible assets	1,318,754
Deferred tax assets	1,563,553
Others	230,431
	<u>23,990,735</u>
Liabilities	
Accounts payable	(3,170,323)
Other payables and payables on equipment	(1,962,119)
Lease liabilities	(479,547)
Others	(189,231)
	<u>(5,801,220)</u>
Total identifiable net assets	<u>\$18,189,515</u>
Gain on bargain purchase:	
Consideration transferred	\$18,017,930
Less: Fair value of identifiable net assets	(18,189,515)
Bargain purchase gain	<u>\$(171,585)</u>

The fair value of the net identifiable assets acquired and liabilities assumed was in excess of the aggregate consideration transferred and the previously held ownership interest of 15.9% in USJC at the acquisition date, and the difference was recognized as bargain purchase gain. The previously held ownership interest of 15.9% in USJC was previously accounted for as financial assets at fair value through other comprehensive income, non-current. It was subsequently remeasured at fair value with the consideration for a minority interest discount on the acquisition date resulting in the bargain purchase gain. Upon the acquisition, the Company recognized a loss on disposal of NT\$375 million and the accumulated unrealized losses on the previously held ownership interest was reclassified from other comprehensive income to retained earnings.

Upon the acquisition, USJC contributed NT\$4,277 million of operating revenues and NT\$305 million to profit before tax from continuing operations of the Company, respectively. If the combination had taken place at the beginning of the year, operating revenues from the continuing operations would have been NT\$160,767 million and the profit before tax from continuing operations for the Company would have been NT\$6,535 million, respectively.

(27) Deconsolidation of Subsidiaries

UNISTARS CORP. (UNISTARS)

As UMC's subsidiary disposed of all of its shares of UNISTARS in December 2018, the Company lost control of UNISTARS, derecognizing the relevant assets and liabilities of UNISTARS at the date when the control is lost.

a. Derecognized assets and liabilities mainly consisted of:

Assets	
Cash and cash equivalents	\$14,430
Notes and accounts receivable	18,239
Inventories	46,717
Property, plant and equipment	45,515
Others	2,365
	<u>127,266</u>
Liabilities	
Short-term loans	(34,313)
Payables	(29,309)
Current portion of long-term liabilities	(11,899)
Long-term loans	(5,502)
Others	(2,872)
	<u>(83,895)</u>
Net assets of the subsidiary deconsolidated	<u>\$43,371</u>

b. Consideration received and loss recognized from the transaction:

Cash received	\$4,617
Less: Net assets of the subsidiary deconsolidated	(43,371)
Add: Non-controlling interests	7,074
Less: Goodwill	(176)
Loss on disposal of subsidiary	<u>\$(31,856)</u>

Loss on disposal of subsidiary for the year ended December 31, 2018 was recognized as other gains and losses in the consolidated statement of comprehensive income.

c. Analysis of net cash outflow arising from deconsolidation of the subsidiary:

Cash received	\$4,617
Net cash of subsidiary derecognized	(14,430)
Net cash outflow from deconsolidation	<u>\$(9,813)</u>

7. RELATED PARTY TRANSACTIONS

The following is a summary of transactions between the Company and related parties during the financial reporting periods:

(1) Name and Relationship of Related Parties

Name of related parties	Relationship with the Company
FARADAY TECHNOLOGY CORP. and its Subsidiaries	Associate
HSUN CHIEH CAPITAL CORP.	Associate
TRIKNIGHT CAPITAL CORPORATION	Associate
HSUN CHIEH INVESTMENT CO., LTD.	Associate
JINING SUNRICH SOLARENERGY CORPORATION	Joint venture's subsidiary
SILICON INTEGRATED SYSTEMS CORP.	The Company's director
PHOTRONICS DNP MASK CORPORATION	Other related parties
UNITEDVISION SEMICONDUCTOR CO., LTD.	Other related parties
UNISTARS CORPORATION	Other related parties
UPI SEMICONDUCTOR CORP.	Other related parties
CHUAN-FANG ZHUAN	Subsidiary's director

(2) Significant Related Party Transactions

a. Operating transactions

Operating revenues

	For the years ended December 31,	
	2019	2018
Associates	\$1,552,339	\$1,291,398
Joint ventures	-	4,277
Others	45,523	27,881
Total	<u>\$1,577,862</u>	<u>\$1,323,556</u>

Accounts receivable, net

	As of December 31,	
	2019	2018
Associates	\$278,702	\$134,646
Others	11,243	4,266
Total	\$289,945	\$138,912

The sales price to the above related parties was determined through mutual agreement in reference to market conditions. The collection period for domestic sales to related parties were month-end 30~60 days, while the collection period for overseas sales was net 30~60 days.

Refund liabilities (classified under other current liabilities)

	As of December 31,	
	2019	2018
Associates	\$7,880	\$1,287
Others	48	71
Total	\$7,928	\$1,358

b. Significant asset transactions

Acquisition of financial assets at fair value through profit or loss – noncurrent

	Trading Volume (In thousands of shares)	Transaction underlying	Purchase price	
			Stock of	For the year ended
Associates	500	MATERIALS ANALYSIS TECHNOLOGY INC.		\$32,923
Associates	1,900	Stock of GEAR RADIO LTD.		37,211
Total				\$70,134

For the year ended December 31, 2018: None.

Acquisition of investments accounted for under the equity method

	Trading Volume (In thousands of shares)	Transaction underlying	Purchase price	
			Stock	For the year ended
Associates	72,000	Stock		\$720,000
Associates	84,000	Transaction underlying Stock		\$840,000

<u>Acquisition of intangible assets</u>		Purchase price	
		For the years ended	
		2019	2018
Associates		\$339,463	\$200,610

Disposal of subsidiary

For the year ended December 31, 2019: None.

	Trading Volume (In thousands of shares)	Transaction underlying	For the year ended	
			Proceeds	Disposal (loss) gain
Others	46,168	Stock of UNISTARS CORPORATION	\$4,617	\$(31,856)

c. Others		Mask expenditure	
		For the years ended	
		2019	2018
Others		\$2,346,263	\$1,750,088

Other payables of mask expenditure

	As of December 31,	
	2019	2018
Others	\$683,892	\$571,036

d. Key management personnel compensation

	For the years ended December 31,	
	2019	2018
Short-term employee benefits	\$271,135	\$387,294
Post-employment benefits	2,406	4,660
Termination benefits	3,415	-
Share-based payment	62,203	293,857
Others	578	435
Total	\$339,737	\$686,246

8. ASSETS PLEDGED AS COLLATERAL

The following table lists assets of the Company pledged as collateral:

As of December 31, 2019 and 2018

Items	Carrying Amount		Party to which asset(s) was pledged	Purpose of pledge
	2019	2018		
Refundable Deposits (Bank deposit and Time deposit)	\$811,035	\$961,198	Customs	Customs duty guarantee
Refundable Deposits (Time deposit)	348,117	237,358	Science Park Administration	Collateral for land lease
Refundable Deposits (Time deposit)	19,510	19,579	Science Park Administration	Collateral for dormitory lease
Refundable Deposits (Time deposit)	41,785	37,084	Liquefied Natural Gas Business Division, CPC Corporation, Taiwan	Energy resources guarantee
Refundable Deposits (Time deposit)	1,000,000	1,000,000	Bank of China	Bank performance guarantee

Items	Carrying Amount		Party to which asset(s) was pledged	Purpose of pledge
	2019	2018		
Buildings	\$5,381,590	\$5,823,938	Taiwan Cooperative Bank and Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Machinery and equipment	19,029,077	25,762,086	Taiwan Cooperative Bank, Mega International Commercial Bank and Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Right-of-use assets	292,120	-	Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Other noncurrent assets	-	309,108	Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Total	\$26,923,234	\$34,150,351		

9. SIGNIFICANT CONTINGENCIES AND UNRECOGNIZED CONTRACT COMMITMENTS

- (1) As of December 31, 2019, amounts available under unused letters of credit for importing machinery and equipment were NT\$0.1 billion.
- (2) As of December 31, 2019, the Company entrusted financial institutes to open performance guarantee, mainly related to the litigations and customs tax guarantee, amounting to NT\$1.7 billion.
- (3) The Company entered into several patent license agreements and development contracts of intellectual property for a total contract amount of approximately NT\$10.8 billion. As of December 31, 2019, the portion of royalties and development fees not yet recognized was NT\$1.4 billion.
- (4) The Company entered into several construction contracts for the expansion of its operations. As of December 31, 2019, these construction contracts amounted to approximately NT\$2.0 billion and the portion of the contracts not yet recognized was approximately NT\$0.4 billion.

(5) The Board of Directors of UMC resolved in October 2014 to participate in a 3-way agreement with Xiamen Municipal People's Government and FUJIAN ELECTRONIC & INFORMATION GROUP to form a company which will focus on 12" wafer foundry services. As of December 31, 2019, the Company obtained R.O.C. government authority's approval for the investment and invested RMB 8.3 billion in USCXM, representing ownership interest of 65.22%. Furthermore, based on the agreement, UMC recognized a financial liability in other noncurrent liabilities-others for the purchase from the other investors of their investments in USCXM at their original investment cost plus interest totaling amounting to RMB 4.9 billion, beginning from the seventh year (2022) following the last installment payment made by the other investors. Accordingly, the Company recognizes non-controlling interests as required by IFRS 10 during the reporting period. At the end of each reporting period, the Company recognizes a financial liability for its commitment to the other investors in accordance with IFRS 9, at the same time derecognizing the non-controlling interests. Any difference between the financial liability and the non-controlling interests balance is recognized in equity.

(6) On August 31, 2017, the Taichung District Prosecutors Office indicted UMC based on the Trade Secret Act of R.O.C., alleging that employees of UMC misappropriated the trade secrets of MICRON TECHNOLOGY, INC. ("MICRON"). On December 5, 2017, MICRON filed a civil action with similar cause against UMC with the United States District Court, Northern District of California. MICRON claimed entitlement to the actual damages, treble damages and relevant fees and requested the court to issue an order that enjoins UMC from using its trade secrets in question. The case is currently in progress and UMC has appointed counsels to prepare answers against these charges.

On January 12, 2018, UMC filed three patent infringement actions with the Fuzhou Intermediate People's Court against, among others, MICRON (XI'AN) CO., LTD. and MICRON (SHANGHAI) TRADING CO., LTD., requesting the court to order the defendants to stop manufacturing, processing, importing, selling, and committing to sell the products deploying the infringing patents in questions, and also to destroy all inventories and related molds and tools. On July 3, 2018, the Fuzhou Intermediate People's Court granted preliminary injunction against the aforementioned two defendants, holding that the two defendants must immediately cease to manufacture, sell, and import products that infringe the patent rights of UMC. The lawsuit filed by UMC is still on trial.

On November 1, 2018, the Department of Justice of the United States ("DOJ") unsealed an indictment against UMC, FUJIAN JINHUA INTEGRATED CIRCUIT CO., LTD. ("JINHUA"), and three individuals, including one current employee and two former employees of UMC, alleging that UMC and others conspired to steal trade secrets of MICRON, and used that information to develop technology that was subsequently transferred to JINHUA. On the same day, the DOJ filed a civil complaint enjoining the aforementioned defendants from exporting to the United States any products containing DRAM manufactured by UMC or JINHUA and preventing the defendants from transferring the trade secrets to anyone else.

The indictment and civil complaint are still on trial. UMC has appointed counsel to prepare answers against these charges. Besides, UMC has suspended the joint technology development activities with JINHUA. Given these litigations are still in the preliminary stages, UMC cannot assess the legal proceeding and probable outcome or impact.

(7) On March 14, 2019, a putative class action styled Meyer v. United Microelectronics Corporation and several executives, was filed under Securities Exchange Act of 1934 and Rule 10b-5 in the United States District Court for the Southern District of New York. The court appointed a lead plaintiff and approved lead plaintiff counsel on May 23, 2019. On September 27, 2019, UMC received the service of plaintiffs' amended complaint and appointed counsel to prepare the relevant procedures. Given this litigation is still in the preliminary stages, UMC cannot assess the legal proceeding and probable outcome or impact.

10. SIGNIFICANT DISASTER LOSS

None.

11. SIGNIFICANT SUBSEQUENT EVENTS

On February 11, 2020, the Board of Directors of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. resolved to participate in the capital injection of UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. in stages at a total investment amount of RMB 3.5 billion.

12. OTHERS

(1) Categories of financial instruments

	As of December 31,	
	2019	2018
Financial Assets		
Financial assets at fair value through profit or loss	\$14,021,473	\$12,084,297
Financial assets at fair value through other comprehensive income	14,723,232	11,585,477
Financial assets measured at amortized cost		
Cash and cash equivalents (excludes cash on hand)	95,486,403	83,655,648
Receivables	26,383,212	24,583,451
Refundable deposits	2,600,733	2,757,399
Other financial assets	2,353,066	2,320,037
Total	\$155,568,119	\$136,986,309

The Company applies natural hedges on the foreign currency risk arising from purchases or sales, and utilizes spot or forward exchange contracts to manage foreign currency risk and the net effect of the risks related to monetary financial assets and liabilities is minor. The notional amounts of the foreign currency contracts are the same as the amount of the hedged items. In principle, the Company does not carry out any forward exchange contracts for uncertain commitments. The Company designates certain forward currency contracts as cash flow hedges to hedge its exposure to foreign currency exchange risk associated with certain highly probable forecast transactions. On the basis of assessment, the Company expects that the value of forward currency exchange contracts and the value of the hedged transactions will change systematically in opposite directions for given changes in foreign exchange rates. Hedge ineffectiveness in these hedging relationships mainly arises from the counterparties' credit risk, impacting the fair value movements of the hedging instruments and hedged items. No other sources of ineffectiveness emerged from these hedging relationships. Furthermore, as net investments in foreign subsidiaries are for strategic purposes, they are not hedged by the Company.

Certain forward exchange contracts designated by the Company to hedge foreign currency exchange rate risks associated with the purchase of additional shares of USJC in JPY, amounting to JPY 23 billion, expired prior to December 31, 2018. The cash flow hedge reserve in other components of equity, amounting to NT\$(3) million, was recognized as consideration for the ownership interest of 84.1% in USJC on October 1, 2019. Please refer to Note 6(26).

The foreign currency sensitivity analysis of the possible change in foreign exchange rates on the Company's profit is performed on significant monetary items denominated in foreign currencies as of the end of the reporting period. When NTD strengthens/weakens against USD by 10%, the profit for the years ended December 31, 2019 and 2018 decreases/increases by NT\$1,009 million and NT\$1,367 million, respectively. When RMB strengthens/weakens against USD by 10%, the profit for the years ended December 31, 2019 and 2018 increases/decreases by NT\$2,200 million and NT\$2,589 million, respectively.

Interest rate risk

The Company is exposed to interest rate risk arising from borrowing at floating interest rates. All of the Company's bonds have fixed interest rates and are measured at amortized cost. As such, changes in interest rates would not affect the future cash flows. On the other hand, as the interest rates of the Company's short-term and long-term bank loans are floating, changes in interest rates would affect the future cash flows but not the fair value. Please refer to Note 6(10), 6(11) and 6(12) for the range of interest rates of the Company's bonds and bank loans.

Financial Liabilities	As of December 31,	
	2019	2018
Financial liabilities measured at amortized cost		
Short-term loans	\$12,015,206	\$13,103,808
Payables	27,342,495	23,465,536
Guarantee deposits (current portion included)	296,694	665,793
Bonds payable (current portion included)	38,781,416	41,378,182
Long-term loans (current portion included)	33,902,074	30,826,215
Lease liabilities (Note)	6,031,025	-
Other financial liabilities	20,093,441	20,523,099
Total	\$138,462,351	\$129,962,633

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

(2) Financial risk management objectives and policies

The Company's risk management objectives are to manage the market risk, credit risk and liquidity risk related to its operating activities. The Company identifies, measures and manages the aforementioned risks based on policy and risk preference.

The Company has established appropriate policies, procedures and internal controls for financial risk management. Before entering into significant financial activities, approval process by the Board of Directors and Audit Committee must be carried out based on related protocols and internal control procedures. The Company complies with its financial risk management policies at all times.

(3) Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risks comprise currency risk, interest rate risk and other price risk (such as equity price risk).

Foreign currency risk

The Company's exposure to the risk of changes in foreign exchange rates relates primarily to the Company's operating activities (when revenue or expense is denominated in a different currency from the Company's functional currency) and the Company's net investments in foreign subsidiaries.

(5) Liquidity risk management

The Company's objectives are to maintain a balance between continuity of funding and flexibility through the use of cash and cash equivalents, bank loans, bonds and lease.

The table below summarizes the maturity profile of the Company's financial liabilities based on the contractual undiscounted payments and contractual maturity:

	As of December 31, 2019				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Short-term loans	\$12,211,621	\$-	\$-	\$-	\$12,211,621
Payables	26,490,911	600,686	15,020	-	27,106,617
Guarantee deposits	100,584	97,108	-	99,002	296,694
Bonds payable	20,659,607	10,590,265	8,689,971	-	39,939,843
Long-term loans	6,104,795	19,631,931	13,097,986	12,000	38,846,712
Lease liabilities	740,939	1,413,978	1,180,955	3,792,192	7,128,064
Other financial liabilities	-	12,668,287	8,445,826	-	21,114,113
Total	\$66,308,457	\$45,002,255	\$31,429,758	\$3,903,194	\$146,643,664
	As of December 31, 2018				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Short-term loans	\$13,171,811	\$-	\$-	\$-	\$13,171,811
Payables	22,994,059	199,788	-	-	23,193,847
Guarantee deposits	52,890	154,787	15,385	442,731	665,793
Bonds payable	3,000,855	23,187,913	8,484,393	8,563,021	43,236,182
Long-term loans	4,036,260	10,997,829	17,209,849	4,765,719	37,009,657
Other financial liabilities	112,744	-	17,477,984	4,369,730	21,960,458
Total	\$43,368,619	\$34,540,317	\$43,187,611	\$18,141,201	\$139,237,748

At the reporting dates, a change of 10 basis points of interest rate in a reporting period could cause the profit for the years ended December 31, 2019 and 2018 to decrease/increase by NT\$46 million and NT\$44 million, respectively.

Equity price risk

The Company's listed and unlisted equity securities are susceptible to market price risk arising from uncertainties about future performance of equity markets. The Company's equity investments are classified as financial assets at fair value through profit or loss and financial assets at fair value through other comprehensive income.

The sensitivity analysis for the equity instruments is based on the change in fair value as of the reporting date. A change of 5% in the price of the aforementioned financial assets at fair value through profit or loss of listed companies could increase/decrease the Company's profit for the years ended December 31, 2019 and 2018 by NT\$252 million and NT\$171 million, respectively. A change of 5% in the price of the aforementioned financial assets at fair value through other comprehensive income of listed companies could increase/decrease the Company's other comprehensive income for the years ended December 31, 2019 and 2018 by NT\$671 million and NT\$408 million, respectively.

(4) Credit risk management

The Company only trades with approved and creditworthy third parties. Where the Company trades with third parties which have less credit, it will request collateral from them. It is the Company's policy that all customers who wish to trade on credit terms are subject to credit verification procedures. In addition, notes and accounts receivable balances are monitored on an ongoing basis to decrease the Company's exposure to credit risk.

The Company mitigates the credit risks from financial institutions by limiting its counter parties to only reputable domestic or international financial institutions with good credit standing and spreading its holdings among various financial institutions. The Company's exposure to credit risk arising from the default of counter-parties is limited to the carrying amount of these instruments.

As of December 31, 2019 and 2018, accounts receivable from the top ten customers represent 44% and 54% of the total accounts receivable of the Company, respectively. The credit concentration risk of other accounts receivable is insignificant.

(6) Foreign currency risk management

UMC entered into forward exchange contracts for hedging the exchange rate risk arising from the net monetary assets or liabilities denominated in foreign currency. The details of forward exchange contracts entered into by UMC are summarized as follows:

As of December 31, 2019

None.

As of December 31, 2018

Type	Notional Amount	Contract Period
Forward exchange contracts	Sell USD 28 million	December 10, 2018~January 7, 2019

(7) Fair value of financial instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability, or in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Company.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities;
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable;
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

For assets and liabilities that are recognized in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

a. Assets and liabilities measured and recorded at fair value on a recurring basis:

	As of December 31, 2019			Total
	Level 1	Level 2	Level 3	
Financial assets:				
Financial assets at fair value through profit or loss, current	\$668,476	\$-	\$54,318	\$722,794
Financial assets at fair value through profit or loss, noncurrent	4,737,027	340,255	8,221,397	13,298,679
Financial assets at fair value through other comprehensive income, noncurrent	13,417,308	-	1,305,924	14,723,232
As of December 31, 2018				
	Level 1	Level 2	Level 3	Total
Financial assets:				
Financial assets at fair value through profit or loss, current	\$493,481	\$34,969	\$-	\$528,450
Financial assets at fair value through profit or loss, noncurrent	3,612,243	44,597	7,899,007	11,555,847
Financial assets at fair value through other comprehensive income, noncurrent	8,166,277	-	3,419,200	11,585,477

Fair values of financial assets at fair value through profit or loss and financial assets at fair value through other comprehensive income that are categorized into level 1 are based on the quoted market prices in active markets. If there is no active market, the Company estimates the fair value by using the valuation techniques (income approach and market approach) in consideration of cash flow forecast, recent fund raising activities, valuation of similar companies, individual company's development, market conditions and other economic indicators. If there are restrictions on the sale or transfer of a financial asset, which are a characteristic of the asset, the fair value of the asset will be determined based on similar but unrestricted financial assets' quoted market price with appropriate discounts for the restrictions. To measure fair values, if the lowest level input that is significant to the fair value measurement is directly or indirectly observable, then the financial assets are classified as Level 2 of the fair value hierarchy, otherwise as Level 3.

Significant unobservable inputs of fair value measurement in Level 3 fair value hierarchy were as follow:

Category of equity securities	As of December 31, 2019				Sensitivity analysis of interrelationship between inputs and fair value
	Valuation technique	Significant unobservable inputs	Quantitative information	Interrelationship between inputs and fair value	
Unlisted stock	Market Approach	Discount for lack of marketability	0%~50%	The greater degree of lack of marketability, the lower the estimated fair value is determined.	A change of 5% in the discount for lack of marketability of the aforementioned fair values of unlisted stocks could decrease/increase the Company's profit (loss) for the year ended December 31, 2019 by NT\$267 million and NT\$191 million, respectively. Other comprehensive income (loss) for the year ended December 31, 2019 by NT\$87 million.

Category of equity securities	As of December 31, 2018				Sensitivity analysis of interrelationship between inputs and fair value
	Valuation technique	Significant unobservable inputs	Quantitative information	Interrelationship between inputs and fair value	
Unlisted stock	Market Approach	Discount for lack of marketability	15%~50%	The greater degree of lack of marketability, the lower the estimated fair value is determined.	A change of 5% in the discount for lack of marketability of the aforementioned fair values of unlisted stocks could decrease/increase the Company's profit(loss) and other comprehensive income (loss) for the year ended December 31, 2018 by NT\$309 million and by NT\$241 million, respectively.

During the years ended December 31, 2019 and 2018, there were no significant transfers between Level 1 and Level 2 fair value measurements.

Reconciliations for fair value measurement in Level 3 fair value hierarchy were as follows:

	Financial assets at fair value through profit or loss				Financial assets at fair value through other comprehensive income	
	Common stock	Preferred stock	Funds	Convertible bonds	Common stock	Preferred stock
As of January 1, 2019	\$3,077,691	\$2,971,528	\$1,849,788	\$-	\$7,899,007	\$184,026
Recognized in profit (loss)	(272,299)	273,047	(14,024)	6,145	(7,131)	-
Recognized in other comprehensive income (loss)	-	-	-	-	199,244	(8,532)
Acquisition	159,476	396,890	204,082	51,956	812,404	-
Disposal	(1,475)	(328,371)	-	-	(329,846)	-
Return of capital	(14,954)	-	-	-	(14,954)	(2,303,988)
Transfer to Level 3	-	-	-	49,706	49,706	-
Transfer out of Level 3	(53,300)	-	-	-	(53,300)	-
Exchange effect	(14,451)	(33,800)	(28,821)	(3,099)	(80,171)	-
As of December 31, 2019	\$2,880,688	\$3,279,294	\$2,011,025	\$104,708	\$8,275,715	\$175,494
						\$1,305,924

	Financial assets at fair value through profit or loss				Financial assets at fair value through other comprehensive income	
	Common stock	Preferred stock	Funds	Option	Common stock	Preferred stock
As of January 1, 2018	\$3,832,537	\$2,994,294	\$1,183,940	\$31,605	\$8,042,376	\$233,326
Recognized in profit (loss)	(3,356)	(394,931)	69,827	(31,605)	(360,065)	-
Recognized in other comprehensive loss	-	-	-	-	(115,520)	(49,300)
Acquisition	140,338	630,626	577,347	-	1,348,311	-
Disposal	(468,337)	(310,025)	-	-	(778,362)	-
Return of capital	(22,954)	-	-	-	(22,954)	-
Transfer to Level 3	22,050	-	-	-	22,050	-
Transfer out of Level 3	(442,138)	-	-	-	(442,138)	-
Exchange effect	19,551	51,564	18,674	-	89,789	-
As of December 31, 2018	\$3,077,691	\$2,971,528	\$1,849,788	\$-	\$7,899,007	\$184,026
						\$5,419,200

Recognized as part of profit (loss) above, the profit (loss) from financial assets still held by the Company as of December 31, 2019 and 2018 were NT\$(11.3) million and NT\$(203) million, respectively.

The Company's policy to recognize the transfer into and out of fair value hierarchy levels is based on the event or changes in circumstances that caused the transfer.

(8) Significant financial assets and liabilities denominated in foreign currencies

	As of December 31,			
	2019		2018	
	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)	Exchange Rate
			Foreign Currency (thousand)	NTD (thousand)
<u>Financial Assets</u>				
<u>Monetary items</u>				
USD	\$1,692,380	30.03	\$50,822,171	\$1,536,283
JPY	29,531,053	0.2751	8,123,993	19,954,240
EUR	3,795	33.54	127,266	2,669
SGD	66,197	22.28	1,474,870	34,325
RMB	5,262,546	4.30	22,607,898	4,089,229
				4.45
				18,184,800
				30.67
				\$47,117,775
				0.2764
				5,515,352
				35.01
				22.41
				769,217
				4.45
				18,184,800
				30.67
				6,598,528
				0.2764
				2,340,075
				22.41
				184,025
				4.45
				220,152
<u>Non-Monetary items</u>				
USD	239,131	30.03	7,181,098	215,146
JPY	441,322	0.2751	121,408	8,466,263
SGD	7,877	22.28	175,494	8,212
RMB	38,533	4.30	165,537	49,506
				4.45
				220,152
<u>Financial Liabilities</u>				
<u>Monetary items</u>				
USD	312,437	30.13	9,413,712	322,705
JPY	21,495,694	0.2792	6,001,598	3,875,144
EUR	4,720	33.94	160,193	13,721
SGD	82,303	22.46	1,848,507	39,650
RMB	14,816,473	4.35	64,392,390	14,332,554
				4.50
				64,453,497
				30.77
				9,929,626
				0.2805
				1,086,978
				35.41
				485,880
				22.59
				895,677
				4.50
				64,453,497
<u>The exchange gain or loss from monetary financial assets and liabilities</u>				
USD			(374,319)	635,992
JPY			568,061	39,116
EUR			6,208	8,133
SGD			(22,530)	4,473
RMB			(417,725)	(1,044,912)
Other			1,681	205

b. Assets and liabilities not recorded at fair value but for which fair value is disclosed:

The fair value of bonds payable is estimated by the market price or using a valuation model. The model uses market-based observable inputs including share price, volatility, credit spread and risk-free interest rates. The fair value of long-term loans is determined using discounted cash flow model, based on the Company's current incremental borrowing rates of similar loans.

The fair values of the Company's short-term financial instruments including cash and cash equivalents, receivables, refundable deposits, other financial assets-current, short-term loans, payables and guarantee deposits approximate their carrying amount due to their maturities within one year.

As of December 31, 2019

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$39,571,920	\$21,347,047	\$18,224,873	\$-	\$38,781,416
Long-term loans (current portion included)	33,902,074	-	33,902,074	-	33,902,074

As of December 31, 2018

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$41,714,368	\$23,929,019	\$17,785,349	\$-	\$41,378,182
Long-term loans (current portion included)	30,826,215	-	30,826,215	-	30,826,215

(9) Significant intercompany transactions among consolidated entities for the years ended December 31, 2019 and 2018 are disclosed in Attachment 1.

(10) Capital management

The primary objective of the Company's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios to support its business and maximize the stockholders' value. The Company also ensures its ability to operate continuously to provide returns to stockholders and the interests of other related parties, while maintaining the optimal capital structure to reduce costs of capital.

To maintain or adjust the capital structure, the Company may adjust the dividend payment to stockholders, return capital to stockholders, issue new shares or dispose assets to redeem liabilities.

Similar to its peers, the Company monitors its capital based on debt to capital ratio. The ratio is calculated as the Company's net debt divided by its total capital. The net debt is derived by taking the total liabilities on the consolidated balance sheets minus cash and cash equivalents. The total capital consists of total equity (including capital, additional paid-in capital, retained earnings, other components of equity and non-controlling interests) plus net debt.

The Company's strategy, which is unchanged for the reporting periods, is to maintain a reasonable ratio in order to raise capital with reasonable cost. The debt to capital ratios as of December 31, 2019 and 2018 were as follows:

	As of December 31,	
	2019	2018
Total liabilities	\$162,972,943	\$158,068,415
Less: Cash and cash equivalents	(95,492,477)	(83,661,739)
Net debt	67,480,466	74,406,676
Total equity	207,214,422	206,536,491
Total capital	\$274,694,888	\$280,943,167
Debt to capital ratios	24.57%	26.48%

13. ADDITIONAL DISCLOSURES

(1) The following are additional disclosures for the Company and its affiliates as required by the R.O.C. Securities and Futures Bureau:

- a. Financing provided to others for the year ended December 31, 2019: Please refer to Attachment 2.
 - b. Endorsement/Guarantee provided to others for the year ended December 31, 2019: Please refer to Attachment 3.
 - c. Securities held as of December 31, 2019 (excluding subsidiaries, associates and joint venture): Please refer to Attachment 4.
 - d. Individual securities acquired or disposed of with accumulated amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 5.
 - e. Acquisition of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 6.
 - f. Disposal of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 7.
 - g. Related party transactions for purchases and sales amounts exceeding the lower of NT\$100 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 8.
 - h. Receivables from related parties with amounts exceeding the lower of NT\$100 million or 20 percent of capital stock as of December 31, 2019: Please refer to Attachment 9.
 - i. Names, locations and related information of investees as of December 31, 2019 (excluding investment in Mainland China): Please refer to Attachment 10.
 - j. Financial instruments and derivative transactions: Please refer to Note 12.
- (2) Investment in Mainland China
- a. Investee company name, main businesses and products, total amount of capital, method of investment, accumulated inflow and outflow of investments from Taiwan, net income (loss) of investee company, percentage of ownership, investment income (loss), carrying amount of investments, cumulated inward remittance of earnings and limits on investment in Mainland China: Please refer to Attachment 11.

(2) Geographic non-current assets information

	As of December 31,	
	2019	2018
Taiwan	\$73,481,714	\$90,046,190
Singapore	15,191,880	16,881,746
China (includes Hong Kong)	63,622,327	73,627,957
USA	70,498	31,919
Europe	24,383	155,489
Japan	12,265,769	232
Others	3,309	-
Total	\$164,659,880	\$180,743,533

Non-current assets include property, plant and equipment, right-of-use assets, intangible assets, prepayment for equipment and other noncurrent assets.

(3) Major customers

Individual customers accounting for at least 10% of operating revenues for the years ended December 31, 2019 and 2018 were as follows:

	For the years ended	
	2019	2018
Customer A from wafer fabrication segment	\$17,576,293	\$15,357,470

ATTACHMENT 1 (Significant intercompany transactions between consolidated entities)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

For the year ended December 31, 2019

No. (Note 1)	Related party	Counterparty	Relationship with the Company (Note 2)	Transactions		
				Account	Amount	Percentage of consolidated operating revenues or consolidated total assets (Note 4)
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Sales	\$47,736,335	32%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Accounts receivable	5,937,706	2%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Sales	3,933,964	3%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Accounts receivable	608,622	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Sales	1,209,310	1%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Accounts receivable	31,334	0%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Sales	745,226	1%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	33,242	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Sales	152,012	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	21,138	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Sales	250,736	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Accounts receivable	51,150	0%

For the year ended December 31, 2018

No. (Note 1)	Related party	Counterparty	Relationship with the Company (Note 2)	Transactions		
				Account	Amount	Percentage of consolidated operating revenues or consolidated total assets (Note 4)
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Sales	\$57,107,585	38%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Accounts receivable	7,312,272	2%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Sales	4,159,637	3%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP JAPAN	1	Accounts receivable	905,048	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Sales	1,356,567	1%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Accounts receivable	48,163	0%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Sales	698,988	0%
1	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	120,678	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Sales	307,471	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	35,161	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Sales	272,218	0%
2	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP JAPAN	3	Accounts receivable	61,971	0%

Note 1: UMC and its subsidiaries are coded as follows:

1. UMC is coded "0".

2. The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: Transactions are categorized as follows:

1. The holding company to subsidiary.

2. Subsidiary to holding company.

3. Subsidiary to subsidiary.

Note 3: The sales price to the above related parties was determined through mutual agreement in reference to market conditions.

Note 4: The percentage with respect to the consolidated asset/liability for transactions of balance sheet items are based on each item's balance at period-end.

For profit or loss items, cumulative balances are used as basis.

Note 5: UMC authorized technology licenses to its subsidiary, UNITED SEMICONDUCTOR (XIAMEN) CO., LTD., in the amount of USD 0.35 billion which was recognized as deferred revenue.

Since it was a downstream transaction, the deferred revenue would be realized over time.

ATTACHMENT 2 (Financing provided to others for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

No. (Note 1)	Lender	Counter-party	Financial statement account	Related Party	Maximum balance for the period	Ending balance	Actual amount provided	Interest rate	Nature of financing	Amount of sales to (purchases from) counter-party	Reason for financing	Loss allowance	Collateral		Limit of financing amount for individual counter-party (Note2)	Limit of total financing amount (Note2)
													Item	Value		
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Other receivables - related parties	Yes	\$7,507,500	\$7,507,500	\$1,201,200	2.56%-3.06%	The need for short-term financing	\$-	Business turnover	\$-	None	\$-	\$20,680,436	\$82,721,743

TERA ENERGY DEVELOPMENT CO., LTD.

No. (Note 1)	Lender	Counter-party	Financial statement account	Related Party	Maximum balance for the period	Ending balance	Actual amount provided	Interest rate	Nature of financing	Amount of sales to (purchases from) counter-party	Reason for financing	Loss allowance	Collateral		Limit of financing amount for individual counter-party (Note3)	Limit of total financing amount (Note3)
													Item	Value		
1	TERA ENERGY DEVELOPMENT CO., LTD.	TIPPING POINT ENERGY COC PPA SPE-1,LLC	Other receivables	No	\$2,349	\$2,349	\$2,349	9.00%	Needs for operation	\$2,349	-	\$2,349	None	\$-	\$2,349	\$24,495

Note 1: The parent company and its subsidiaries are coded as follows:

(i) The parent company is coded "0".

(ii) The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: Limit of financing amount for individual counter-party shall not exceed 10% of the lender's net assets value as of the period.

Limit of total financing amount shall not exceed 40% of the Company's net asset value.

Note 3: Limit of financing amount for individual counter-party shall not exceed 10% of the lender's net assets value as of the period or the needed amount for operation, which is lower.

Limit of total financing amount shall not exceed 40% of latest financial statements of lender.

ATTACHMENT 3 (Endorsement/Guarantee provided to others for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

No. (Note 1)	Endorser/Guarantor	Receiving party Company name	Relationship (Note 2)	Limit of guarantee/endorsement amount for receiving party (Note 3)	Maximum balance for the period	Ending balance (Note 5)	Actual amount provided (Note 5)	Amount of collateral guarantee/endorsement	Percentage of accumulated guarantee amount to net assets value from the latest financial statement	Limit of total guarantee/endorsement amount (Note 4)
0	UNITED MICROELECTRONICS CORPORATION	NEXPOWER TECHNOLOGY CORP.	2	\$93,061,961	\$2,448,000	\$748,000	\$747,900	\$-	0.36%	\$93,061,961
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	2	93,061,961	15,105,090	13,933,920	13,696,378	-	6.74%	93,061,961

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

No. (Note 1)	Endorser/Guarantor	Receiving party Company name	Relationship (Note 2)	Limit of guarantee/endorsement amount for receiving party (Note 7)	Maximum balance for the period	Ending balance	Actual amount provided (Note 5)	Amount of collateral guarantee/endorsement	Percentage of accumulated guarantee amount to net assets value from the latest financial statement	Limit of total guarantee/endorsement amount (Note 7)
1	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	6	\$10,248,216	\$8,832,353	\$8,832,353	\$3,913,609	\$-	38.78%	\$10,248,216

Note 1: The parent company and its subsidiaries are coded as follows:

1. The parent company is coded "0".

2. The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: According to the "Guidelines Governing the Preparation of Financial Reports by Securities Issuers" issued by the R.O.C. Securities and Futures Bureau, receiving parties should be disclosed as one of the following:

1. A company with which it does business.
2. A company in which the public company directly and indirectly holds more than 50% of the voting shares.
3. A company that directly and indirectly holds more than 50% of the voting shares in the public company.
4. A company in which the public company holds, directly or indirectly, 90% or more of the voting shares.
5. A company that fulfills its contractual obligations by providing mutual endorsements/guarantees for another company in the same industry or for joint builders for purposes of undertaking a construction project.
6. A company that all capital contributing shareholders make endorsements/guarantees for their jointly invested company in proportion to their shareholding percentages.
7. Companies in the same industry provide among themselves joint and several security for a performance guarantee of a sales contract for pre-construction homes pursuant to the Consumer Protection Act for each other.

Note 3: The amount of endorsements/guarantees shall not exceed 45% of the net worth of endorser/guarantor, and the ceilings on the amount of endorsements/guarantees for any single entity are as follows:

1. The amount of endorsements/guarantees for any single entity shall not exceed 45% of net worth of endorser/guarantor.

2. The amount of endorsements/guarantees for a company which endorser/guarantor does business with, except the ceiling rules abovementioned shall not exceed the needed amounts arising from business dealings which is the higher amount of total sales or purchase transactions between endorser/guarantor and the receiving party.

The aggregate amount of endorsements/guarantees that the Company as a whole is permitted to make shall not exceed 45% of the Company's net worth, and the aggregate amount of

endorsements/guarantees for any single entity shall not exceed 45% of the Company's net worth.

Note 4: Limit of total guarantee/endorsement amount shall not exceed 45% of UMC's net assets value as of December 31, 2019.

Note 5: On December 24, 2014, the board of directors resolved to provide endorsement to NEXPOWER TECHNOLOGY CORP.'s syndicated loan from banks including Bank of Taiwan for the amount up to NTS\$700 million, it has been fully repaid in January 2019.

On December 12, 2018, the board of directors resolved to increase the endorsement amount to NTS\$748 million. As of December 31, 2019, actual amount provided was NTS\$748 million.

On February 22, 2017, the board of directors resolved to guarantee UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.'s syndicated loan from banks including China Development Bank in the amount up to USD 310 million.

On March 7, 2018, the board of directors resolved to increase the endorsement amount to USD 152 million, on October 24, 2018, the board of directors resolved to increase the endorsement amount to USD 41 million.

On July 24, 2019, the board of directors resolved to decrease the endorsement amount to USD 26 million, on December 18, 2019, the board of directors resolved to decrease the endorsement amount to USD 464 million.

As of December 31, 2019, actual amount provided was NTS\$13,696 million.

Note 7: Limit of total endorsed/guaranteed amount shall not exceed 45% of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2019.

The amount of endorsements/guarantees for any single entity shall not exceed 45% of net worth of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2019.

The aggregate amount of endorsements/guarantees that the Company as a whole is permitted to make shall not exceed 45% of the Company's net worth, and the aggregate amount of endorsements/guarantees for any single entity shall not exceed 45% of the Company's net worth.

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount \$146,730	Percentage of ownership (%)	
Stock	ACTION ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, current	18,182	6.56	None	
Fund	MILLERFUL NO.1 REAL ESTATE INVESTMENT TRUST	-	Financial assets at fair value through profit or loss, current	18,000	1.70	None	
Stock	PIXART IMAGING, INC.	-	Financial assets at fair value through profit or loss, current	1,600	1.16	None	
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, current	2,675	0.22	None	
Stock	PIXTECH, INC.	-	Financial assets at fair value through profit or loss, noncurrent	9,883	17.63	None	
Stock	UNITED FU SHEN CHEN TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	17,511	15.75	None	
Stock	HOLTEK SEMICONDUCTOR INC.	-	Financial assets at fair value through profit or loss, noncurrent	22,144	9.79	None	
Stock	OCTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,692	9.29	None	
Stock	UNITED INDUSTRIAL GASES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	16,680	7.66	None	
Stock	AMIC TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	5,627	4.71	None	
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	12,521	4.35	None	
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	20,483	1.68	None	
Stock	EPSTAR CORP.	-	Financial assets at fair value through profit or loss, noncurrent	10,715	0.98	None	
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,184	0.83	None	
Stock	PROMOS TECHNOLOGIES INC.	-	Financial assets at fair value through profit or loss, noncurrent	324	0.72	None	
Stock-Preferred stock	TONBU, INC.	-	Financial assets at fair value through profit or loss, noncurrent	938	-	None	
Stock-Preferred stock	AETAS TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,166	-	None	
Stock-Preferred stock	TA SHEE GOLF & COUNTRY CLUB	-	Financial assets at fair value through profit or loss, noncurrent	0	-	None	
Stock	SILICON INTEGRATED SYSTEMS CORP.	The Company's director	Financial assets at fair value through other comprehensive income, noncurrent	105,356	19.73	None	
Stock	UNIMICRON HOLDING LIMITED	-	Financial assets at fair value through other comprehensive income, noncurrent	20,000	17.00	None	
Stock	UNIMICRON TECHNOLOGY CORP.	-	Financial assets at fair value through other comprehensive income, noncurrent	196,136	13.03	None	
Stock	ITE TECH, INC.	-	Financial assets at fair value through other comprehensive income, noncurrent	13,960	8.67	None	
Stock	NOVATEK MICROELECTRONICS CORP.	-	Financial assets at fair value through other comprehensive income, noncurrent	16,445	2.70	None	
Stock-Preferred stock	MITIC HOLDINGS PTE. LTD.	-	Financial assets at fair value through other comprehensive income, noncurrent	12,000	-	None	

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	DARCHUN VENTURE CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,514	\$2,923	19.65	\$2,923
Stock	SOLARGATE TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	957	-	15.94	-
Fund	TRENDFORCE CAPITAL FUND-SPC-TRENDFORCE CAPITAL FUND I SP	-	Financial assets at fair value through profit or loss, noncurrent	15	46,896	15.12	46,896
Stock	TRONC-E CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,800	-	14.49	-
Stock	CENTERA PHOTONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,750	124,875	13.76	124,875
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,500	17,125	10.23	17,125
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	10,719	52,522	9.12	52,522
Stock	MONTJADE ENGINEERING CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,800	18,504	8.18	18,504
Stock	NEW SMART TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	900	12,087	7.29	12,087
Stock	WIN WIN PRECISION TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,150	48,101	6.93	48,101
Stock	RISELINK VENTURE CAPITAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	526	6,574	6.67	6,574
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3	62,376	5.35	62,376
Stock	LICO TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	6,609	-	5.32	-
Stock	ACTI CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,968	10,232	5.31	10,232
Stock	ACT GENOMICS HOLDINGS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,600	34,535	5.12	34,535
Stock	MERIDIGEN BIOTECH CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,838	26,903	4.21	26,903
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,374	166,996	3.72	166,996
Stock	SOLID STATE SYSTEM CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,000	53,850	3.71	53,850
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	10,059	122,818	3.49	122,818
Stock	TAIWAN AULISA MEDICAL DEVICES TECHNOLOGIES, INC.	-	Financial assets at fair value through profit or loss, noncurrent	800	7,280	3.21	7,280
Stock	ANIMATION TECHNOLOGIES INC.	-	Financial assets at fair value through profit or loss, noncurrent	265	-	3.16	-
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,416	99,584	3.11	99,584
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	69,053	2.96	69,053
Stock	BRIGHT SHELAND INTERNATIONAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	41,160	2.88	41,160
Stock	TAIWAN SEMICONDUCTOR CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,741	320,130	2.70	320,130

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	WALTOP INTERNATIONAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	327	\$1,432	2.23	\$1,432
Stock	CHITEC TECHNOLOGY CORP., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	600	24,060	2.15	24,060
Fund	VERTEX V (C.1) FUND L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	46,186	2.07	46,186
Stock	MOBILE DEVICES INC.	-	Financial assets at fair value through profit or loss, noncurrent	261	-	1.96	-
Stock	WIESON TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,141	4,564	1.71	4,564
Stock	SOLAR APPLIED MATERIALS TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	8,000	179,600	1.61	179,600
Stock	CRYSTALWISSE TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,114	25,045	1.02	25,045
Stock	NORATECH PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	9,540	0.95	9,540
Stock	TAIWANI PHARMACEUTICALS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	582	6,769	0.84	6,769
Stock	POWERTEC ELECTROCHEMICAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	9,930	-	0.75	-
Stock	TIGERAIR TAIWAN CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,300	65,260	0.65	65,260
Stock	FUSHENG PRECISION CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	700	125,650	0.53	125,650
Stock	LINTES TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	265	24,088	0.46	24,088
Stock	QUASER MACHINE TOOLS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	200	9,370	0.44	9,370
Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	21	3	0.02	3
Stock-Preferred Stock	EIOULE INTERNATIONAL LIMITED	-	Financial assets at fair value through profit or loss, noncurrent	23,909	176,019	-	176,019
Stock-Preferred Stock	FLOADIA CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2	121,408	-	121,408
Stock-Preferred Stock	CEREBREX, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1	-	-	-
Stock-Preferred Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	311	1,027	-	1,027
Stock-Preferred Stock	ACEPEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,449	30,030	-	30,030
Stock-Preferred Stock	BRAVOTEK CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2,250	59,459	-	59,459
Stock-Preferred Stock	GEAR RADIO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,900	37,087	-	37,087
Convertible bonds	EPISIL-PRECISION INC.	-	Financial assets at fair value through profit or loss, noncurrent	125	13,900	-	13,900
Stock	SHIN-ETSU HANDOTAI TAIWAN CO., LTD.	-	Financial assets at fair value through other comprehensive income, noncurrent	10,500	334,635	7.00	334,635
Stock	UNITED MICROELECTRONICS CORP.	Parent company	Financial assets at fair value through other comprehensive income, noncurrent	16,079	264,495	0.14	264,495
Stock	EMPASS TECHNOLOGY INC.	-	Prepayments for investments	200	10,000	-	N/A
Stock	VALUE VALVES CO., LTD.	-	Prepayments for investments	40	3,987	-	N/A

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)
TLC CAPITAL CO., LTD.

December 31, 2019									
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	Shares as collateral (thousand)	
Convertible bonds	CLOUD MOMENT (CAYMAN) INC.	-	Financial assets at fair value through profit or loss, current	-	\$-	-	\$-	None	
Fund	EVERYI CAPITAL ASIA FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	111,766	18.18	111,766	None	
Stock	WINKING ENTERTAINMENT LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,433	41,853	15.35	41,853	None	
Stock	BEAUTY ESSENTIALS INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	150,500	84,364	13.99	84,364	None	
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	9	243,278	9.00	243,278	None	
Stock	ACTI CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2,252	11,708	6.08	11,708	None	
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,529	223,462	4.98	223,462	None	
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	8,220	4.91	8,220	None	
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	5,435	26,630	4.62	26,630	None	
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2	53,465	4.58	53,465	None	
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	181,831	4.24	181,831	None	
Stock	SUNDIA MEDITECH GROUP	-	Financial assets at fair value through profit or loss, noncurrent	779	20,192	3.20	20,192	None	
Stock	WIESON TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,829	7,314	2.74	7,314	None	
Fund	H&QAP GREATER CHINA GROWTH FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	7,452	2.67	7,452	None	
Stock	ENTEREX INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,127	19,328	1.02	19,328	None	
Stock	HANDA PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	30,090	0.87	30,090	None	
Stock	MATERIALS ANALYSIS TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	500	40,750	0.80	40,750	None	
Stock	SIMPLO TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,422	431,012	0.77	431,012	None	
Stock	TXC CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,978	93,559	0.64	93,559	None	
Stock	LINTES TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	365	33,179	0.64	33,179	None	
Stock	POWTEC ELECTROCHEMICAL CORP.(formerly POWERTEC ENERGY CORP.)	-	Financial assets at fair value through profit or loss, noncurrent	6,470	-	0.49	-	None	
Stock	EVERGREEN STEEL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	35,000	0.25	35,000	None	
Convertible bonds	SIGURD MICROELECTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	50	5,658	-	5,658	None	
Convertible bonds	EPISIL-PRECISION INC.	-	Financial assets at fair value through profit or loss, noncurrent	100	11,120	-	11,120	None	
Convertible bonds	TECHCENTRAL INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	100	10,060	-	10,060	None	

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

TLC CAPITAL CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)	
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)		Fair value/ Net assets value
Stock-Preferred stock	YOUJIA GROUP LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,685	\$6,192	-	\$6,192	None
Stock-Preferred stock	ALO7 LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,377	194,971	-	194,971	None
Stock-Preferred stock	ADWO MEDIA HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	5,332	-	-	-	None
Stock-Preferred stock	IMO, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,519	-	-	-	None
Stock-Preferred stock	HIGHLANDER FINANCIAL GROUP CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	26,499	169,778	-	169,778	None
Stock-Preferred stock	X2 POWER TECHNOLOGIES LTD.	-	Financial assets at fair value through profit or loss, noncurrent	21,703	128,396	-	128,396	None
Stock-Preferred stock	GAME VIDEO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	279	178,037	-	178,037	None
Stock-Preferred stock	CLOUD MOMENT (CAYMAN) INC.	-	Financial assets at fair value through profit or loss, noncurrent	359	-	-	-	None
Stock-Preferred stock	PLANYTRIDE INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,739	179,734	-	179,734	None
Stock-Preferred stock	EIOULE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	35,863	264,029	-	264,029	None
Stock-Preferred stock	TURNING POINT LASERS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,000	67,880	-	67,880	None
Stock-Preferred stock	ARTERY TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	770	104,054	-	104,054	None
Stock	VALUE VALVES CO., LTD.	-	Prepayments for investments	40	3,987	-	N/A	None

UMC CAPITAL CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)	
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)		Fair value/ Net assets value
Convertible bonds	SWIFSTACK, INC.	-	Financial assets at fair value through profit or loss, current	-	USD 916	-	USD 916	None
Convertible bonds	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, current	-	USD 190	-	USD 190	None
Convertible bonds	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, current	-	USD 703	-	USD 703	None
Capital	TRANSLINK MANAGEMENT III, L.L.C.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 959	14.33	USD 959	None
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 16,371	11.47	USD 16,371	None
Stock	OCTTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	7,035	USD 11,608	9.76	USD 11,608	None
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 6,898	8.87	USD 6,898	None
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3	USD 2,077	5.35	USD 2,077	None
Stock	ALL-STARS SPIV LTD.	-	Financial assets at fair value through profit or loss, noncurrent	7	USD 7,123	5.03	USD 7,123	None

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UMC CAPITAL CORP.

Type of securities Fund	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)	
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)		Fair value/ Net assets value
	TRANSLINK CAPITAL PARTNERS II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	1,630	4.53	1,630	None
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	4 USD	3,601	4.00	USD	3,601
Fund	GROVE VENTURES II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	240	3.33	USD	240
Fund	SIERRA VENTURES XI, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,695	1.76	USD	2,695
Fund	STORM VENTURES FUND V, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,989	1.69	USD	2,989
Stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	80 USD	56	0.46	USD	56
Convertible bonds	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	1,678	-	USD	1,678
Stock-Preferred stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,644 USD	6,631	-	USD	6,631
Stock-Preferred stock	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,052 USD	3,433	-	USD	3,433
Stock-Preferred stock	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,349 USD	2,092	-	USD	2,092
Stock-Preferred stock	ATSCALE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,520 USD	9,112	-	USD	9,112
Stock-Preferred stock	SENSIFREE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	614 USD	1,307	-	USD	1,307
Stock-Preferred stock	APPHER HOLDINGS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	64 USD	3,237	-	USD	3,237
Stock-Preferred stock	DCARD HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	27,819 USD	4,789	-	USD	4,789
Stock-Preferred stock	NEXTINPUT, INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,866 USD	1,386	-	USD	1,386
Stock-Preferred stock	SHOCARD, INC.	-	Financial assets at fair value through profit or loss, noncurrent	517 USD	133	-	USD	133
Stock-Preferred stock	GCT SEMICONDUCTOR, INC.	-	Financial assets at fair value through profit or loss, noncurrent	175 USD	51	-	USD	51
Stock-Preferred stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	12,241 USD	4,968	-	USD	4,968
Stock-Preferred stock	SIFOTONICS TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,500 USD	6,592	-	USD	6,592
Stock-Preferred stock	NEVO ENERGY, INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,980	-	-	-	-
Stock-Preferred stock	SWIFTSTACK, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,855 USD	1,165	-	USD	1,165
Stock-Preferred stock	NEXENTA SYSTEMS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,555	-	-	-	-
Stock-Preferred stock	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	9,461 USD	4,526	-	USD	4,526
Stock-Preferred stock	EAST VISION TECHNOLOGY LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,770	-	-	-	-
Stock-Preferred stock	RENIAC, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,287 USD	2,266	-	USD	2,266
Stock-Preferred stock	BLUESPACE.AI, INC.	-	Financial assets at fair value through profit or loss, noncurrent	174 USD	300	-	USD	300

ATTACHMENT 4 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

TERA ENERGY DEVELOPMENT CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	TIAN TAI PHOTOELECTRICITY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	375	\$5,561	1.18	\$5,561 None

NEXPOWER TECHNOLOGY CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	PACIFIC-GREEN INTEGRATED TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	54	\$-	18.00	\$- None

SINO PARAGON LIMITED

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Fund	SPARKLABS GLOBAL VENTURES FUND I, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	\$85,482	11.13	\$85,482 None
Fund	SPARKLABS KOREA FUND II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	33,499	5.00	33,499 None

UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Fund	LANHOR FUND	-	Financial assets at fair value through profit or loss, noncurrent	-	RMB 38,533	9.71	RMB 38,533 None

ATTACHMENT 5 (Individual securities acquired or disposed of with accumulated amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Type of securities	Name of the securities	Financial statement account	Counter-party	Relationship	Beginning balance		Addition		Disposal		Ending balance	
					Units (thousand)/ bonds/shares (thousand)	Amount (Note 1)	Units (thousand)/ bonds/shares (thousand)	Amount	Units (thousand)/ bonds/shares (thousand)	Amount	Units (thousand)/ bonds/shares (thousand)	Amount (Note 1)
Stock	TRIKNIGHT CAPITAL CORPORATION	Investments accounted for under the equity method	Purchase of newly issued shares	Associate	168,000	\$1,520,575	72,000	\$720,000	-	\$-	237,000	\$2,281,631 (Note 2)
Stock	UNITED SEMICONDUCTOR JAPAN CO., LTD.	Investments accounted for under the equity method	FUJITSU SEMICONDUCTOR LIMITED	-	18,447	2,220,103	97,800	15,711,370	-	\$-	116,247	17,515,233 (Note 3)

Note 1 : The amounts of beginning and ending balances of financial assets at fair value through other comprehensive income, noncurrent are recorded at the prevailing market prices. The amounts of beginning and ending balances of investments accounted for under the equity method include adjustments under the equity method.

Note 2 : The ending balance includes share of profit of associates and joint ventures of \$71,056 thousand and capital reduction of NT\$(30,000) thousand.

Note 3 : The previously held ownership interest of 15.9% in UNITED SEMICONDUCTOR JAPAN CO., LTD. (Before the name was changed to MIE FUJITSU SEMICONDUCTOR LIMITED) was treated as disposal and requisition upon completion of the acquisition of remaining ownership interest of 84.1% on October 1, 2019, which was reclassified changes in fair value \$84 thousand from financial assets at fair value through other comprehensive, noncurrent to investments accounted for under equity method. The ending balance includes bargain purchase gain of \$171,585 thousand resulted from the acquisition, gains or losses on hedging instruments of \$2,572 thousand, share of profit of associates and joint ventures of \$270,787 thousand and exchange differences on translation of foreign operations adjustment under equity method of \$(945,069) thousand.

ATTACHMENT 6 (Acquisition of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

Name of properties	Transaction date	Transaction amount	Payment status	Counter-party	Relationship	Where counter-party is a related party, details of prior transactions			
						Former holder of property	Relationship between former holder and acquirer of property	Date of transaction	Transaction amount

None

ATTACHMENT 7 (Disposal of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

Names of properties	Transaction date	Date of original acquisition	Carrying amount	Transaction amount	Status of proceeds collection	Gain (Loss) from disposal	Counter-party	Relationship	Reason of disposal	Price reference	Other commitments
---------------------	------------------	------------------------------	-----------------	--------------------	-------------------------------	---------------------------	---------------	--------------	--------------------	-----------------	-------------------

None

ATTACHMENT 8 / Related party transactions for purchases and sales amounts exceeding the lower of NT\$100 million or 20 percent of capital stock for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Subsidiary	Sales	\$47,736,335	39 %	Net 60 days	N/A	N/A	\$5,937,706	29 %	
UMC GROUP JAPAN	Subsidiary	Sales	3,933,964	3 %	Net 60 days	N/A	N/A	608,622	3 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary	Sales	1,209,310	1 %	Net 30 days	N/A	N/A	31,334	0 %	
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	805,385	1 %	Month-end 60 days	N/A	N/A	85,373	0 %	

UMC GROUP (USA)

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UNITED MICROELECTRONICS CORPORATION	Parent company	Purchases	USD 1,504,518	98 %	Net 60 days	N/A	N/A	197,973	99 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Associate	Purchases	USD 23,335	2 %	Net 60 days	N/A	N/A	1,109	1 %	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	USD 4,937	0 %	Net 60 days	N/A	N/A	705	0 %	

UMC GROUP JAPAN

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UNITED MICROELECTRONICS CORPORATION	Parent company	Purchases	JPY 12,877,097	94 %	Net 60 days	N/A	N/A	2,310,603	93 %	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	JPY 849,777	6 %	Net 60 days	N/A	N/A	186,971	7 %	

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	RMB 121,132	5 %	Net 45 days	N/A	N/A	31,635	8 %	
UMC GROUP JAPAN	Associate	Sales	RMB 56,029	2 %	Net 60 days	N/A	N/A	11,906	3 %	
UMC GROUP (USA)	Associate	Sales	RMB 33,968	1 %	Net 60 days	N/A	N/A	4,920	1 %	

UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	RMB 166,527	9 %	Net 60 days	N/A	N/A	7,738	2 %	

ATTACHMENT 9 (Receivables from related parties with amounts exceeding the lower of NT\$100 million or 20 percent of capital stock as of December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Counter-party	Relationship	Ending balance			Turnover rate (times)	Overdue receivables				
		Notes receivable	Accounts receivable	Other receivables		Total	Amount	Collection status	Amount received in subsequent period	Loss allowance
UMC GROUP (USA)	Subsidiary	\$-	\$5,937,706	\$7,469	\$5,945,175	7.21	\$-	-	\$5,945,175	\$-
UMC GROUP JAPAN	Subsidiary	-	608,622	13,671	622,293	5.20	40,320	Collection in subsequent period	305,829	11,180

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

Counter-party	Relationship	Ending balance			Turnover rate (times)	Overdue receivables				
		Notes receivable	Accounts receivable	Other receivables		Total	Amount	Collection status	Amount received in subsequent period	Loss allowance
FARADAY TECHNOLOGY CORP.	Associate	\$-	RMB 31,635	\$-	RMB 31,635	5.94	RMB 3,525	Collection in subsequent period	RMB 31,635	\$-

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019				Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
UMC GROUP (USA)	USA	IC Sales	USD 16,438	USD 16,438	16,438	100.00	\$1,755,033	\$77,135		
UNITED MICROELECTRONICS (EUROPE) B.V.	The Netherlands	Marketing support activities	USD 5,421	USD 5,421	9	100.00	142,378	2,803		
UMC CAPITAL CORP.	Cayman Islands	Investment holding	USD 81,500	USD 81,500	71,663	100.00	3,756,049	342,966		
GREEN EARTH LIMITED	Samoa	Investment holding	USD 977,000	USD 977,000	977,000	100.00	11,643,953	(5,124,276)		
TLC CAPITAL CO., LTD.	Taipei City, Taiwan	Venture capital	USD 4,610,000	USD 4,610,000	397,956	100.00	4,273,912	24,565		
UMC INVESTMENT (SAMOA) LIMITED	Samoa	Investment holding	USD 1,520	USD 1,520	1,520	100.00	42,022	(886)		
FORTUNE VENTURE CAPITAL CORP.	Taipei City, Taiwan	Consulting and planning for venture capital	USD 3,440,053	USD 4,160,053	401,734	100.00	4,398,331	(119,265)		
UMC GROUP JAPAN	Japan	IC Sales	JPY 60,000	JPY 60,000	1	100.00	95,116	47,467		
UMC KOREA CO., LTD.	Korea	Marketing support activities	KRW 550,000	KRW 550,000	110	100.00	20,499	979		
OMNI GLOBAL LIMITED	Samoa	Investment holding	USD 4,300	USD 4,300	4,300	100.00	590,702	31,312		
SINO PARAGON LIMITED	Samoa	Investment holding	USD 2,600	USD 2,600	2,600	100.00	121,840	940		
BEST ELITE INTERNATIONAL LIMITED	British Virgin Islands	Investment holding	USD 309,102	USD 309,102	664,966	100.00	23,183,005	870,821		
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Japan	Sales and manufacturing of integrated circuits	JPY 64,421,068	JPY 9,999,974	116,247	100.00	17,515,233	270,787	Note	
WAVE TEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	USD 1,894,660	USD 1,707,482	144,948	79.83	260,035	(279,115)		
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	USD 5,956,791	USD 5,956,791	33,998	47.75	(140,850)	(200,700)		
MTIC HOLDINGS PTE. LTD.	Singapore	Investment holding	SGD 12,000	SGD 12,000	12,000	45.44	18,157	(24,195)		
UNITECH CAPITAL INC.	British Virgin Islands	Investment holding	USD 21,000	USD 21,000	21,000	42.00	642,660	89,068		
TRIKNIGHT CAPITAL CORPORATION	Taipei City, Taiwan	Investment holding	USD 2,370,000	USD 1,680,000	237,000	40.00	2,281,631	177,640		
HSUN CHIEH INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding	USD 356,241	USD 356,241	277,280	36.49	4,378,193	962,222		
YANN YUAN INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding	USD 2,300,000	USD 2,300,000	46,000	30.87	3,829,934	166,098		
FARADAY TECHNOLOGY CORPORATION	Hsinchu City, Taiwan	Design of application-specific integrated circuit	USD 38,918	USD 38,918	34,240	13.78	1,470,499	(14,859)		

Note: The UNITED SEMICONDUCTOR JAPAN CO., LTD. became consolidated entity on October 1, 2019.

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
TERA ENERGY DEVELOPMENT CO., LTD.	Hsinchu City, Taiwan	Energy Technical Services	\$100,752	\$100,752	18,655	100.00	\$61,238	\$(22,063)		
PURUMPEL INC.	Hsinchu City, Taiwan	Chemicals and filtration products & Microcontamination control service	10,000	-	1,000	44.45	7,164	(6,380)	(2,835)	
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	1,688,650	1,688,650	23,827	33.46	(98,710)	\$(420,302)	(140,654)	
WINAICO IMMOBILIEN GMBH	Germany	Solar project	EUR 5,900	EUR 5,900	5,900	32.78	-	-	-	
UNITED LED CORPORATION HONG KONG LIMITED	Hongkong	Investment holding	USD 22,500	USD 22,500	22,500	25.14	121,973	(165,087)	(41,502)	
CLIENTRON CORP.	Xinbei City, Taiwan	Thin client	277,508	283,439	13,932	21.90	276,866	249,901	47,315	
WA VETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	8,856	8,856	1,194	0.66	3,424	(279,115)	(1,875)	

TLC CAPITAL CO., LTD.

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
SOARING CAPITAL CORP.	Samoa	Investment holding	USD 900	USD 900	900	100.00	\$10,264	\$(3,560)	\$(3,560)	
HSUN CHIEH CAPITAL CORP.	Samoa	Investment holding	USD 6,000	USD 6,000	6,000	30.00	122,060	(133,431)	(37,044)	
YSENSE CO., LTD.	Taipei City, Taiwan	Medical devices, measuring equipment, reagents and consumables	95,916	95,916	4,251	25.90	592	(34,224)	(9,110)	
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	888,019	888,019	8,645	12.14	(35,816)	(420,302)	(51,035)	
YUNG LI INVESTMENTS, INC.	Taipei City, Taiwan	Investment holding	-	22,581	-	-	-	(1)	(0)	

UMC CAPITAL CORP.

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
UMC CAPITAL (USA)	USA	Investment holding	USD 200	USD 200	200	100.00	USD 552	USD 6	USD 6	
TRANSLINK CAPITAL PARTNERS I, L.P.	Cayman Islands	Investment holding	USD 4,036	USD 4,036	-	10.38	USD 5,742	USD 21,843	USD 1,815	

TERA ENERGY DEVELOPMENT CO., LTD.

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
EVERRICH ENERGY INVESTMENT (HK) LIMITED	Hongkong	Investment holding	USD 750	USD 750	750	100.00	\$38,469	\$7,443	\$7,443	
WINAICO IMMOBILIEN GMBH	Germany	Solar project	EUR 2,160	EUR 2,160	2,160	12.00	-	-	-	
WINAICO SOLAR PROJEKT I GMBH	Germany	Solar project	EUR -	EUR 1,120	-	-	-	-	-	

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

WAVETEK MICROELECTRONICS CORPORATION

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED	Samoa	Investment holding	USD 1,500	USD 1,500	1,500	100.00	\$2,124	\$(6,920)	\$(6,920)	

WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
WAVETEK MICROELECTRONICS CORPORATION (USA)	USA	Sales and marketing service	USD 60	USD 60	60	100.00	\$2,777	\$237	\$237	

NEXPOWER TECHNOLOGY CORP.

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
SOCIALNEX ITALIA I.S.R.L.	Italy	Photovoltaic power plant	-	EUR 3,637	-	-	\$-	\$(89,915)	\$(89,915)	

Note : SOCIALNEX ITALIA I.S.R.L. was disposed in November 2019.

BESTELITE INTERNATIONAL LIMITED

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
INFOSHINE TECHNOLOGY LIMITED	British Virgin Islands	Investment holding	USD 354,000	USD 354,000	-	100.00	\$23,113,468	\$877,676	\$877,676	

INFOSHINE TECHNOLOGY LIMITED

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
OAKWOOD ASSOCIATES LIMITED	British Virgin Islands	Investment holding	USD 354,000	USD 354,000	-	100.00	\$23,113,468	\$877,676	\$877,676	

OMNI GLOBAL LIMITED

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2019			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
UNITED MICROTECHNOLOGY CORPORATION (NEW YORK)	USA	Research & Development	USD 950	USD 950	0	100.00	\$30,256	\$20	\$20	
UNITED MICROTECHNOLOGY CORPORATION (CALIFORNIA)	USA	Research & Development	USD 1,000	USD 1,000	0	100.00	35,164	1,583	1,583	
ECP VITA PTE. L.TD.	Singapore	Insurance	USD 9,000	USD 9,000	9,000	100.00	536,647	29,580	29,580	
UMC TECHNOLOGY JAPAN CO., LTD.	Japan	Semiconductor manufacturing technology development and consulting services	JPY 35,000	JPY 35,000	4	100.00	8,908	(169)	(169)	

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

GREEN EARTH LIMITED

Investee company	Address	Main businesses and products	Investment as of December 31, 2019				Investment income (loss) recognized	Note
			Initial investment	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount		
UNITED MICROCHIP CORPORATION	Cayman	Investment holding	Ending balance USD 974,050	Beginning balance USD 974,050	974,050	\$11,617,342	Net income (loss) of investee company \$(5,124,809)	Investment income (loss) recognized \$(5,124,809)

ATTACHMENT 11 (Investment in Mainland China as of December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

Investee company	Main businesses and products	Total amount of paid-in capital	Method of investment (Note 1)	Investment flows			Accumulated outflow of investment from Taiwan as of January 1, 2019	Outflow	Inflow	Accumulated outflow of investment from Taiwan as of December 31, 2019	Net income (loss) of investee company	Percentage of ownership	Investment income (loss) recognized (Note 2)	Carrying amount as of December 31, 2019	Accumulated inward remittance of earnings as of December 31, 2019		
				Investment Holding and advisory	Investment	Outflow										Inflow	Outflow
				(USD)	(USD)	(USD)										(USD)	(USD)
UNITRUTH ADVISOR (SHANGHAI) CO., LTD.	Investment Holding and advisory	\$24,024 (USD 800)	(i) SOARING CAPITAL CORP.	\$24,024 (USD 800)	-	\$24,024 (USD 800)	-	-	\$24,024 (USD 800)	\$ (3,529) (iii)	100.00%	\$ (3,529) (iii)	\$10,058	\$-			
EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	22,523 (USD 750)	(ii) EVERRICH ENERGY INVESTMENT (HK) LIMITED	22,523 (USD 750)	-	22,523 (USD 750)	-	-	22,523 (USD 750)	7,505 (iii)	100.00%	7,505 (iii)	37,979	131,892 (USD 4,392)			
UNITED LED CORPORATION	Research, manufacturing and sales in LED epitaxial wafers	2,522,520 (USD 84,000)	(i) UNITED LED CORPORATION HONG KONG LIMITED	608,108 (USD 20,250)	-	608,108 (USD 20,250)	-	-	608,108 (USD 20,250)	(159,094) (370,333)	25.14%	(39,996) (9,310) (RMB 24,827)	106,657 (RMB 24,827)	-			
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Sales and manufacturing of integrated circuits	13,768,740 (RMB 3,205,014)	(ii) OAKWOOD ASSOCIATES LIMITED	9,282,333 (USD 309,102)	-	9,282,333 (USD 309,102)	-	-	9,282,333 (USD 309,102)	872,462 (RMB 203,087)	98.14% (Note 4)	856,193 (RMB 199,300) (ii)	22,349,119 (RMB 5,202,309)	-			
UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Design support of integrated circuits	128,880 (RMB 30,000)	(ii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	-	-	-	-	-	-	35,412 (RMB 8,243)	98.14%	34,750 (RMB 8,089) (iii)	219,139 (RMB 51,010)	-			
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Sales and manufacturing of integrated circuits	54,549,723 (RMB 12,697,794)	(i) UNITED MICROCHIP CORPORATION and (ii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	28,977,929 (USD 964,966) (Notes 5)	-	28,977,929 (USD 964,966) (Notes 5)	-	-	28,977,929 (USD 964,966) (Notes 5)	(9,694,611) (2,256,660)	64.95%	(6,296,372) (1,465,656) (RMB 3,479,458)	14,947,752 (RMB 3,479,458)	-			
Accumulated investment in Mainland China as of December 31, 2019				\$38,914,917 (USD 1,295,868)	\$48,880,582 (USD 1,627,725)	\$124,082,614	Upper limit on investment		\$124,082,614								

Note 1: The methods for engaging in investment in Mainland China include the following:

- (i) Direct investment in Mainland China.
- (ii) Indirectly investment in Mainland China through companies registered in a third region (Please specify the name of the company in third region).
- (iii) Other methods.

Note 2: The investment income (loss) recognized in current period, the investment income (loss) were determined based on the following basis:

- (i) The financial report was audited by an international certified public accounting firm in cooperation with an R.O.C. accounting firm.
- (ii) The financial statements were audited by the auditors of the parent company.
- (iii) Others.

Note 3: Initial investment amounts denominated in foreign currencies are translated into New Taiwan Dollars using the spot rates at the financial report date.

Note 4: The Company indirectly invested in HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. via investment in BEST ELITE INTERNATIONAL LIMITED, an equity investee. The investment has been approved by the Investment Commission, MOEA in the total amount of USD 383,569 thousand. As of December 31, 2019, the amount of investment has been all remitted.

Note 5: The investment to UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. (USCXM) from HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. and indirectly invested in USCXM via investment in GREEN EARTH LIMITED.

The consent to invest in USCXM's investment has been approved by the Investment Commission, MOEA in the total amount of USD 1,222,356 thousand. As of December 31, 2019, the amount of investment has been all remitted.

Independent Auditors' Report Translated from Chinese

To United Microelectronics Corporation

**UNITED MICROELECTRONICS CORPORATION
PARENT COMPANY ONLY
FINANCIAL STATEMENTS
WITH REPORT OF INDEPENDENT AUDITORS
FOR THE YEARS ENDED
DECEMBER 31, 2019 AND 2018**

Opinion

We have audited the accompanying parent company only balance sheets of United Microelectronics Corporation (the "Company") as of December 31, 2019 and 2018, and the related parent company only statements of comprehensive income, changes in equity and cash flows for the years ended December 31, 2019 and 2018, and notes to the parent company only financial statements, including the summary of significant accounting policies (together "the parent company only financial statements").

In our opinion, based on our audits and the reports of other auditors (please refer to the *Other Matter – Making Reference to the Audits of Component Auditors* section of our report), the parent company only financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and its financial performance and cash flows for the years ended December 31, 2019 and 2018, in conformity with the requirements of 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 (the "Norm"), and we have fulfilled our other ethical responsibilities in accordance with the Norm. Based on our audits and the reports of other auditors, 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 2019 parent company only financial statements. 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.

Address: No. 3 Li-Hsin Road II, Hsinchu Science Park, Hsinchu City, Taiwan, R.O.C.
Telephone: 886-3-578-2258

The reader is advised that parent company only financial statements have been prepared originally in Chinese. In the event of a conflict between these financial statements and the original Chinese version or difference in interpretation between the two versions, the Chinese language financial statements shall prevail.

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 requirements of 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 ability to continue as a going concern of the Company, 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 audit committee, are responsible for overseeing the financial reporting process of the Company.

Auditor's 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 auditor's 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 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 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.

Valuation for slow-moving inventories

As of December 31, 2019, the Company's net inventories amounted to NT\$16,305 million. As the semiconductor industry is characterized by rapid changes in technology, management had to evaluate and estimate a reserve for slow-moving inventories that are expected to be written-off or otherwise disposed of at a future date. Auditing the valuation for slow-moving inventories was complex due to judgement involved in the Company's estimation of the appropriate amount of the slow-moving inventories reserve, utilizing key inputs including historical usage, write-off activities and inventory aging. Therefore, we consider this is a key audit matter.

We obtained an understanding, evaluated the design and tested the operating effectiveness of internal controls over the Company's slow-moving inventories reserve process. For example, we tested the control over management's review of the reserve method and the key inputs used in the valuation process. To test the slow-moving inventories reserve, our audit procedures included, amongst others, an evaluation of the appropriateness of management's determination of inventory aging and testing the accuracy and completeness of the underlying data such as historical usage and write-off activities used in determining the inventories reserve percentages. We also recalculated inventory reserve for the application of the reserve percentages to the inventory aging categories.

In addition, we evaluated the adequacy of disclosures of inventories. Please refer to Notes 5 and 6 to the parent company only financial statements.

Other Matter – Making Reference to the Audits of Component Auditors

We did not audit the financial statements of certain subsidiaries, associates and joint ventures accounted for under the equity method. Those financial statements were audited by other auditors, whose reports thereon have been furnished to us, and our opinions expressed herein are based solely on the reports of other auditors. These subsidiaries, associates and joint ventures under equity method amounted to NT\$11,132 million and NT\$8,151 million, representing 3.68% and 2.72% of total assets as of December 31, 2019 and 2018, respectively. The related shares of profits (loss) from the subsidiaries, associates and joint ventures under the equity method amounted to NT\$1,174 million and NT\$(749) million, representing 12.85% and (12.06)% of the income before tax for the years ended December 31, 2019 and 2018, respectively, and the related shares of other comprehensive income (loss) from the subsidiaries, associates and joint ventures under the equity method amounted to NT\$1,189 million and NT\$(230) million, representing 9.06% and (2.83)% of the comprehensive income (loss) for the years ended December 31, 2019 and 2018, respectively.

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 internal control of the Company.
 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 ability to continue as a going concern of the Company. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's 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 auditor's 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 accompanying notes, 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 2019 parent company only financial statements and are therefore the key audit matters. We describe these matters in our auditor's 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.

Chiu, Wan-Ju

Hsu, Hsin-Min

Ernst & Young, Taiwan

February 26, 2020

Notice to Readers

The accompanying parent company only financial statements are intended only to present the financial position, results of operations 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 parent company only financial statements are those generally accepted and applied in the Republic of China. Accordingly, the accompanying parent company only financial statements and report of independent auditors are not intended for use by those who are not informed about the accounting principles or auditing standards generally accepted in the Republic of China, and their applications in practice. As the financial statements are the responsibility of the management, Ernst & Young cannot accept any liability for the use of, or reliance on, the English translation or for any errors or misunderstandings that may derive from the translation.

English Translation of Parent Company Only Financial Statements Originally Issued in Chinese
UNITED MICROELECTRONICS CORPORATION
PARENT COMPANY ONLY BALANCE SHEETS
December 31, 2019 and 2018
(Expressed in Thousands of New Taiwan Dollars)

	As of December 31,	
	2019	2018
Assets		
Current assets		
Cash and cash equivalents	\$ 66,534,836	\$ 59,342,170
Financial assets at fair value through profit or loss, current	668,476	497,042
Contract assets, current	106,290	81,187
Notes receivable	98	118
Accounts receivable, net	12,900,009	13,583,599
Accounts receivable-related parties, net	6,683,936	8,359,266
Other receivables	1,727,109	543,046
Current tax assets	19,227	15,257
Inventories, net	16,305,112	15,214,634
Prepayments	1,691,526	1,534,955
Other current assets	1,229,680	2,164,496
Total current assets	107,866,299	101,335,770
Non-current assets		
Financial assets at fair value through profit or loss, noncurrent	4,445,752	3,804,024
Financial assets at fair value through other comprehensive income, noncurrent	14,388,597	11,131,667
Investments accounted for under the equity method	80,506,509	68,746,586
Property, plant and equipment	79,486,445	101,115,727
Right-of-use assets	3,261,999	-
Intangible assets	4,082,826	2,886,159
Deferred tax assets	5,618,879	5,694,439
Prepayment for equipment	27,699	212,657
Refundable deposits	2,532,392	2,553,055
Other noncurrent assets-others	533,567	1,707,136
Total non-current assets	194,884,665	197,851,450
Total assets	\$ 302,750,964	\$ 299,187,220

(continued)

English Translation of Parent Company Only Financial Statements Originally Issued in Chinese
 UNITED MICROELECTRONICS CORPORATION
 PARENT COMPANY ONLY BALANCE SHEETS
 December 31, 2019 and 2018
 (Expressed in Thousands of New Taiwan Dollars)

	As of December 31,	
	2019	2018
Liabilities and Equity		
Current liabilities		
Short-term loans	\$ 1,355,850	\$ 1,384,650
Contract liabilities, current	547,024	447,702
Accounts payable	6,008,570	5,745,166
Other payables	10,580,952	10,621,434
Payables on equipment	2,047,760	2,939,455
Current tax liabilities	415,719	1,326,250
Lease liabilities, current	248,788	-
Current portion of long-term liabilities	20,593,825	2,832,595
Other current liabilities	1,966,284	1,500,011
Total current liabilities	43,764,772	26,797,263
Non-current liabilities		
Contract liabilities, noncurrent	482,080	-
Bonds payable	18,687,591	38,878,947
Long-term loans	3,900,000	666,640
Deferred tax liabilities	1,629,818	1,473,238
Lease liabilities, noncurrent	2,988,314	-
Net defined benefit liabilities, noncurrent	4,025,373	4,167,174
Guarantee deposits	95,887	569,368
Other noncurrent liabilities-others	20,372,772	20,564,867
Total non-current liabilities	52,181,835	66,320,234
Total liabilities	95,946,607	93,117,497
Equity		
Capital		
Common stock	117,243,187	124,243,187
Capital collected in advance	332,611	-
Additional paid-in capital		
Premiums	34,404,110	36,278,383
Treasury stock transactions	2,744,391	1,737,113
The differences between the fair value of the consideration paid or received from acquiring or disposing subsidiaries and the carrying amounts of the subsidiaries	573,336	573,336
Recognition of changes in subsidiaries' ownership	1,218	39
Share of changes in net assets of associates and joint ventures accounted for using equity method	123,268	108,613
Employee stock options	214,455	178,401
Stock options	1,476,405	1,515,297
Other	13,211	8,181
Retained earnings		
Legal reserve	11,572,579	10,865,280
Special reserve	14,513,940	-
Unappropriated earnings	34,733,761	50,723,263
Other components of equity		
Exchange differences on translation of foreign operations	(8,948,337)	(5,692,326)
Unrealized gains or losses on financial assets measured at fair value through other comprehensive income	(2,073,977)	(8,819,556)
Gains or losses on hedging instruments	-	(2,058)
Treasury stock	(119,801)	(5,647,430)
Total equity	206,804,357	206,069,723
Total liabilities and equity	\$ 302,750,964	\$ 299,187,220

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

English Translation of Parent Company Only Financial Statements Originally Issued in Chinese

UNITED MICROELECTRONICS CORPORATION
PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME

For the years ended December 31, 2019 and 2018

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings per Share)

	Notes	For the years ended December 31,	
		2019	2018
Operating revenues	4, 6(18), 7	\$ 123,622,436	\$ 132,834,602
Operating costs	4, 6(4), 6(9), 6(13), 6(17), 6(19), 7	(96,461,206)	(102,286,411)
Gross profit		<u>27,161,230</u>	<u>30,548,191</u>
Operating expenses	4, 6(3), 6(9), 6(13), 6(17), 6(18), 6(19), 7		
Sales and marketing expenses		(2,870,050)	(2,932,576)
General and administrative expenses		(3,791,439)	(3,475,793)
Research and development expenses		(9,719,780)	(11,133,700)
Expected credit losses		(689,095)	(356,435)
Subtotal		<u>(17,070,364)</u>	<u>(17,898,504)</u>
Net other operating income and expenses	4, 6(14), 6(20), 7	191,108	140,550
Operating income		<u>10,281,974</u>	<u>12,790,237</u>
Non-operating income and expenses			
Other income	4	1,203,175	944,738
Other gains and losses	4, 6(21)	1,017,178	(772,104)
Finance costs	6(21)	(861,601)	(824,954)
Share of profit or loss of subsidiaries, associates and joint ventures	4, 6(6)	(2,872,245)	(6,641,627)
Bargain purchase gain	6(6)	171,585	-
Exchange gain, net	4,12	193,033	712,366
Subtotal		<u>(1,148,875)</u>	<u>(6,581,581)</u>
Income from continuing operations before income tax		9,133,099	6,208,656
Income tax benefit	4, 5, 6(23)	574,515	864,334
Net income		<u>9,707,614</u>	<u>7,072,990</u>
Other comprehensive income (loss)	6(22)		
Items that will not be reclassified subsequently to profit or loss			
Remeasurements of defined benefit pension plans	4, 5, 6(13)	106,403	(55,060)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income		5,605,384	1,458,848
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	4	-	(2,572)
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which will not be reclassified subsequently to profit or loss		1,112,547	(479,969)
Income tax related to items that will not be reclassified subsequently	4, 5, 6(23)	(158,260)	112,384
Items that may be reclassified subsequently to profit or loss			
Exchange differences on translation of foreign operations		(1,045,504)	1,094,614
Share of other comprehensive loss of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss		(2,204,824)	(1,062,412)
Income tax related to items that may be reclassified subsequently	4, 5, 6(23)	8,252	(11,995)
Total other comprehensive income (loss), net of tax		<u>3,423,998</u>	<u>1,053,838</u>
Total comprehensive income (loss)		<u>\$ 13,131,612</u>	<u>\$ 8,126,828</u>
Earnings per share (NTD)	4, 6(24)		
Earnings per share-basic		\$ 0.82	\$ 0.58
Earnings per share-diluted		\$ 0.76	\$ 0.55

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

English Translation of Parent Company Only Financial Statements Originally Issued in Chinese
 UNITED MICROELECTRONICS CORPORATION
 PARENT COMPANY ONLY STATEMENTS OF CHANGES IN EQUITY
 For the years ended December 31, 2019 and 2018
 (Expressed in Thousands of New Taiwan Dollars)

Notes	Capital		Retained Earnings				Other Components of Equity				Total Equity
	Common Stock	Collected in Advance	Additional Paid-in Capital	Legal Reserve	Special Reserve	Unappropriated Earnings	Exchange Differences on Translation of Foreign Operations	Unrealized Gains or Losses on Financial Assets Measured at Fair Value through Other Comprehensive Income	Gains or Losses on Hedging Instruments	Treasury Stock	
6(16)	\$ 126,243,187	\$ -	\$ 40,858,350	\$ 9,902,407	\$ -	\$ 56,133,198	\$ (5,712,533)	\$ (9,867,013)	\$ -	\$ (4,719,037)	\$ 212,838,559
	-	-	-	962,873	-	(962,873)	-	-	-	-	-
	-	-	-	-	-	(8,557,023)	-	-	-	-	(8,557,023)
	-	-	-	-	-	7,072,990	-	-	-	-	7,072,990
6(22)	-	-	-	-	-	(22,341)	20,207	1,058,030	(2,058)	-	1,052,838
	-	-	-	-	-	7,050,649	20,207	1,058,030	(2,058)	-	8,126,828
4, 6(17)	-	-	696,226	-	-	-	-	-	-	2,203,443	2,899,669
4, 6(16)	(2,000,000)	-	(1,129,182)	-	-	-	-	-	-	(6,261,018)	(6,261,018)
4, 6(16)	-	-	11,131	-	-	10,573	-	(10,573)	-	3,129,182	-
4	-	-	39	-	-	(475,311)	-	-	-	-	(475,272)
	-	-	11,442	-	-	11,442	-	-	-	-	11,442
	-	-	(48,643)	-	-	(2,475,950)	-	-	-	-	(2,524,593)
6(16)	124,243,187	-	40,399,363	10,865,280	-	50,723,263	(5,692,326)	(8,819,556)	(2,058)	(5,647,430)	206,069,723
3	-	-	(10,427)	-	-	-	(13,935)	-	-	-	(24,362)
6(16)	124,243,187	-	40,388,936	10,865,280	-	50,723,263	(5,706,261)	(8,819,556)	(2,058)	(5,647,430)	206,045,361
	-	-	-	707,299	-	(707,299)	-	-	-	-	-
	-	-	-	-	14,513,940	(14,513,940)	-	-	-	-	-
	-	-	-	-	-	(6,916,105)	-	-	-	-	(6,916,105)
	-	-	-	-	-	9,707,614	-	-	-	-	9,707,614
6(22)	-	-	-	-	-	84,744	(3,242,076)	6,581,330	-	-	3,423,998
	-	-	-	-	-	9,792,358	(3,242,076)	6,581,330	-	-	13,131,612
4, 6(17)	-	-	377,004	-	-	-	-	-	-	-	377,004
6(11), 6(16)	-	332,611	130,804	-	-	-	-	-	-	-	463,415
4, 6(16)	-	-	-	-	-	-	-	-	(2,859,498)	-	(2,859,498)
4, 6(16)	(7,000,000)	-	(1,387,127)	-	-	-	-	-	8,387,127	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	14,655	-	-	387,654	-	(387,654)	-	-	14,655
4	-	-	1,179	-	-	(22,280)	-	-	-	-	(21,101)
	-	-	9,485	-	-	-	-	-	-	-	9,485
6(5)	-	-	-	-	-	(551,903)	-	551,903	-	-	-
	-	-	-	-	-	-	-	-	-	-	-
	-	-	15,458	-	-	(3,457,987)	-	-	2,058	-	(3,440,471)
6(16)	\$ 117,243,187	\$ 332,611	\$ 39,550,394	\$ 11,572,579	\$ 14,513,940	\$ 34,733,761	\$ (8,948,337)	\$ (2,073,977)	\$ -	\$ (119,801)	\$ 206,804,357

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

English Translation of Parent Company Only Financial Statements Originally Issued in Chinese

UNITED MICROELECTRONICS CORPORATION
PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

For the years ended December 31, 2019 and 2018

(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2019	2018
Cash flows from operating activities:		
Net income before tax	\$ 9,133,099	\$ 6,208,656
Adjustments to reconcile net income before tax to net cash provided by operating activities:		
Depreciation	31,630,966	36,634,963
Amortization	1,872,075	1,894,471
Expected credit losses	689,095	356,435
Net (gain) loss of financial assets and liabilities at fair value through profit or loss	(964,614)	896,806
Interest expense	818,313	763,080
Interest income	(584,052)	(422,239)
Dividend income	(619,123)	(522,499)
Share-based payment	366,186	695,669
Share of loss of subsidiaries, associates and joint ventures	2,872,245	6,641,627
Gain on disposal of property, plant and equipment	(137,308)	(168,849)
Exchange gain on financial assets and liabilities	(209,799)	(170,206)
Bargain purchase gain	(171,585)	-
Amortization of deferred government grants	(1,138,743)	(1,132,898)
Income and expense adjustments	34,423,656	45,466,360
Changes in operating assets and liabilities:		
Financial assets and liabilities at fair value through profit or loss	151,453	6,177
Contract assets	(26,198)	(354,665)
Notes receivable and accounts receivable	1,406,598	(3,288,853)
Other receivables	14,542	483,890
Inventories	(1,165,198)	(7,601)
Prepayments	737,806	(13,899)
Other current assets	895,067	(1,680,000)
Contract fulfillment costs	36,539	(343,898)
Contract liabilities	101,987	(3,170,712)
Accounts payable	464,631	461,121
Other payables	(857,045)	(476,828)
Other current liabilities	537,918	167,726
Net defined benefit liabilities	(35,398)	(26,405)
Other noncurrent liabilities-others	-	4,815,200
Cash generated from operations	45,819,457	48,246,269
Interest received	552,382	427,175
Dividend received	715,515	1,187,648
Interest paid	(391,559)	(490,768)
Income tax paid	(253,547)	(566,445)
Net cash provided by operating activities	46,442,248	48,803,879

(continued)

English Translation of Parent Company Only Financial Statements Originally Issued in Chinese

UNITED MICROELECTRONICS CORPORATION
PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS

For the years ended December 31, 2019 and 2018

(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2019	2018
Cash flows from investing activities:		
Proceeds from disposal of equity instruments investments measured at fair value through other comprehensive income or loss	\$ 44,466	\$ -
Acquisition of investments accounted for under the equity method	(16,485,610)	(17,709,460)
Increase in prepayment for investments	-	(132,937)
Proceeds from capital reduction of investments	750,000	840,000
Derecognition of hedging financial assets and liabilities	-	(2,572)
Acquisition of property, plant and equipment	(10,966,528)	(10,291,299)
Proceeds from disposal of property, plant and equipment	323,807	413,519
Increase in refundable deposits	(248,459)	(1,537,579)
Decrease in refundable deposits	268,717	667,555
Increase in other receivables	(1,253,320)	(4,688,320)
Decrease in other receivables	-	8,916,796
Acquisition of intangible assets	(2,112,818)	(838,675)
Government grants related to assets acquisition	51,862	123,367
Increase in other noncurrent assets-others	(15,074)	(36,440)
Decrease in other noncurrent assets-others	8,786	-
Net cash used in investing activities	<u>(29,634,171)</u>	<u>(24,276,045)</u>
Cash flows from financing activities:		
Increase in short-term loans	4,199,985	6,821,325
Decrease in short-term loans	(4,177,125)	(12,647,575)
Cash payments for the principal portion of the lease liability	(462,642)	-
Redemption of bonds	(2,500,000)	(7,500,000)
Proceeds from long-term loans	8,859,840	700,000
Repayments of long-term loans	(5,279,660)	(474,356)
Increase in guarantee deposits	207,596	82,518
Decrease in guarantee deposits	(16,748)	(125,466)
Cash dividends	(6,911,058)	(8,557,684)
Treasury stock acquired	(2,972,243)	(6,148,273)
Treasury stock sold to employees	-	2,204,000
Others	10,818	-
Net cash used in financing activities	<u>(9,041,237)</u>	<u>(25,645,511)</u>
Effect of exchange rate changes on cash and cash equivalents	<u>(574,174)</u>	<u>177,045</u>
Net increase (decrease) in cash and cash equivalents	7,192,666	(940,632)
Cash and cash equivalents at beginning of year	59,342,170	60,282,802
Cash and cash equivalents at end of year	<u>\$ 66,534,836</u>	<u>\$ 59,342,170</u>

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

UNITED MICROELECTRONICS CORPORATION
NOTES TO PARENT COMPANY ONLY FINANCIAL STATEMENTS
 For the Years Ended December 31, 2019 and 2018
 (Expressed in Thousands of New Taiwan Dollars unless Otherwise Specified)

1. HISTORY AND ORGANIZATION

United Microelectronics Corporation (the Company) was incorporated in Republic of China (R.O.C.) in May 1980 and commenced operations in April 1982. The Company is a full service semiconductor wafer foundry, and provides a variety of services to satisfy customer needs. The Company's ordinary shares were publicly listed on the Taiwan Stock Exchange (TWSE) in July 1985 and its American Depository Shares (ADSs) were listed on the New York Stock Exchange (NYSE) in September 2000.

The address of its registered office and principal place of business is No. 3, Li-Hsin Road II, Hsinchu Science Park, Hsinchu City, Taiwan.

2. DATE AND PROCEDURES OF AUTHORIZATION OF FINANCIAL STATEMENTS FOR ISSUE

The parent company only financial statements of the Company were authorized for issue in accordance with a resolution of the Board of Directors' meeting on February 26, 2020.

3. NEWLY ISSUED OR REVISED STANDARDS AND INTERPRETATIONS

(1) The Company applied International Financial Reporting Standards, International Accounting Standards, and Interpretations issued, revised or amended which are endorsed by Financial Supervisory Commission ("FSC") and become effective for annual periods beginning on or after January 1, 2019. Apart from the impact of the standards and interpretations which is described below, all other standards and interpretations have no material impact on the Company's financial position and performance.

a. IFRS 16 "Leases" ("IFRS 16")

IFRS 16 replaces IAS 17 "Leases" ("IAS 17"), IFRIC 4 "Determining whether an Arrangement contains a Lease" ("IFRIC 4"), SIC 15 "Operating Leases-Incentives" and SIC 27 "Evaluating the Substance of Transactions in the Legal Form of a Lease" for annual periods beginning on or after January 1, 2019.

The Company elected not to reassess whether a contract was, or contained, a lease at the date of initial application (January 1, 2019) in accordance with the transition provision in IFRS 16. The Company was permitted to apply IFRS 16 to contracts that were previously identified as leases applying IAS 17 and IFRIC 4. The Company elected not to restate comparative information and applied the standard retrospectively only to contracts that were not completed at the date of initial application in accordance with the transition provision in IFRS 16. The Company recognized the cumulative effect of initially applying IFRS 16 on January 1, 2019. As the Company only has operating leases, the impact arising from the adoption of IFRS 16 are summarized as follows:

- i. For leases that were classified as operating leases applying IAS 17, lease payments were recognized as expenses on a straight-line basis over the lease terms. Upon adoption of IFRS 16, the Company measured and recognized those leases, except for short-term or low-value asset lease exemptions, as lease liabilities at the present value of the remaining lease payments, discounted using its weighted average incremental borrowing rate of 2.32% on January 1, 2019. On a lease-by-lease basis, the right-of-use asset was measured and recognized at an amount equal to the lease liability (adjusted by the amount of any prepaid lease payments). The Company assessed the cumulative effect at the date of initial application was primarily consisted of a decrease in Investments accounted for under the equity method to NT\$22 million; an increase in right-of-use assets amounting to NT\$3,535 million; a decrease in other payables amounting to NT\$40 million; an increase in lease liabilities amounting to NT\$3,578 million; a decrease in additional paid-in capital-other amounting to NT\$10 million; and a decrease in other components of equity amounting to NT\$14 million.
- ii. In accordance with the transition provision in IFRS 16, the Company used the following practical expedients on a lease-by-lease basis to leases previously classified as operating leases:
 - (i) Apply a single discount rate to a portfolio of leases with reasonably similar characteristics.
 - (ii) Elect to account in the same way as short-term leases to leases for which the lease term ends within 12 months of January 1, 2019.
 - (iii) Use hindsight, such as in determining the lease term if the contract contains options to extend or terminate the lease.
- iii. The operating lease commitments under IAS 17 as of December 31, 2018 were NT\$4,364 million. As of January 1, 2019, the present value discounted at the lessee's incremental borrowing rate and lease liabilities recognized were NT\$3,578 million.

(2) Standards issued by International Accounting Standards Board (“IASB”) which are endorsed by FSC, but not yet adopted by the Company are listed below:

No.	The projects of Standards or Interpretations	Effective for annual periods
Amendments to IFRS 3	Definition of a Business	beginning on or after January 1, 2020
Amendments to IAS 1 and 8	Definition of Material	January 1, 2020
Amendments to IFRS 9, IAS 39 and IFRS 7	Interest Rate Benchmark Reform	January 1, 2020

b. IFRS 3 “Business Combinations” (“IFRS 3”) - Definition of a Business (Amendment)
The amendments clarify the definition of a business in IFRS 3 Business Combinations. The amendments are intended to assist entities to determine whether a transaction should be accounted for as a business combination or as an asset acquisition.

IFRS 3 continues to adopt a market participant’s perspective to determine whether an acquired set of activities and assets is a business. The amendments clarify the minimum requirements for a business; add guidance to help entities assess whether an acquired process is substantive; and narrow the definitions of a business and of outputs; etc.

c. IAS 1 “Presentation of Financial Statements” (“IAS 1”) and IAS 8 “Accounting Policies, Changes in Accounting Estimates and Errors” - Definition of Material (Amendment)

The main amendment is to clarify new definition of material. It states that “information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.” The amendments clarify that materiality will depend on the nature or magnitude of information. An entity will need to assess whether the information, either individually or in combination with other information, is material in the context of the financial statements.

d. IFRS 9 “Financial Instruments” (“IFRS 9”), IAS 39 “Financial Instruments: Recognition and Measurement” (“IAS 39”) and IFRS 7 “Financial Instruments: Disclosures” - Interest Rate Benchmark Reform

The amendments include a number of exceptions, which apply to all hedging relationships that are directly affected by interest rate benchmark reform. A hedging relationship is directly affected if the interest rate benchmark reform gives rise to uncertainties about the timing and/or amount of benchmark-based cash flows of the hedged item or the hedging instrument. Hence, the entity shall apply the exceptions to all hedging relationships directly affected by the interest rate benchmark reform.

The amendments include:

- i. highly probable requirement: When determining whether a forecast transaction is highly probable, an entity shall assume that the interest rate benchmark on which the hedged cash flows are based is not altered as a result of the interest rate benchmark reform.
- ii. prospective assessments: When performing prospective assessments, an entity shall assume that the interest rate benchmark on which the hedged item, hedged risk and/or hedging instrument are based is not altered as a result of the interest rate benchmark reform.
- iii. IAS 39 retrospective assessment: An entity is not required to undertake the IAS 39 retrospective assessment (i.e. the actual results of the hedge are within a range of 80–125%) for hedging relationships directly affected by the interest rate benchmark reform.
- iv. separately identifiable risk components: For hedges of a non-contractually specified benchmark component of interest rate risk, an entity shall apply the separately identifiable requirement only at the inception of such hedging relationships.

The amendments also include the end of application of the exceptions requirements and the related disclosures requirements of the amendments.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (b) ~ (d) to the Company’s financial position and performance, and the related impact will be disclosed when the evaluation is completed.

(3) Standards issued by IASB but not yet endorsed by FSC (the effective dates are to be determined by FSC) are listed below:

No.	The projects of Standards or Interpretations	Effective for annual periods
IFRS 10 and IAS 28	Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures	To be determined by IASB
IFRS 17	Insurance Contracts	1 January, 2021
IAS 1	Classification of Liabilities as Current or Non-current	1 January, 2022

(2) Basis of Preparation

The parent company only financial statements have been prepared on a historical cost basis, except for financial instruments measured at fair value.

The Company prepared parent company only financial statements in accordance with Article 21 of the Regulations, which provided that the profit or loss and other comprehensive income for the period presented in the parent company only financial statements shall be the same as the profit or loss and other comprehensive income attributable to stockholders of the parent presented in the consolidated financial statements for the period, and the total equity presented in the parent company only financial statements shall be the same as the equity attributable to the parent company presented in the consolidated financial statements. Therefore, the Company accounted for its investments in subsidiaries using equity method and, accordingly, made necessary adjustments.

(3) Foreign Currency Transactions

The Company's parent company only financial statements are presented in its functional currency, New Taiwan Dollars (NTD). Items included in the financial statements are measured using that functional currency.

Transactions in foreign currencies are initially recorded by the Company functional currency rates prevailing at the transaction date. Monetary assets and liabilities denominated in foreign currencies are translated into functional currency at the closing rates of exchange at the reporting date. Non-monetary items measured at fair value in foreign currencies are translated using the exchange rates at the date when the fair value is determined. Non-monetary items that are measured at historical cost in foreign currencies are translated using the exchange rates as at the dates of the initial transactions.

All exchange differences arising on the settlement of monetary items or on translating monetary items are taken to profit or loss in the period in which they arise except for the following:

- a. Exchange differences arising from foreign currency borrowings for an acquisition of a qualifying asset to the extent that they are regarded as an adjustment to interest costs are included in the borrowing costs that are eligible for capitalization.
- b. Foreign currency derivatives within the scope of IFRS 9 are accounted for based on the accounting policy for financial instruments.
- c. Exchange differences arising on a monetary item that is part of a reporting entity's net investment in a foreign operation are recognized initially in other comprehensive income and reclassified from equity to profit or loss upon disposal of such investment.

The potential effects of adopting the standards or interpretations issued by IASB but not yet endorsed by FSC on the Company's financial statements in future periods are summarized as below:

e. IFRS 10 "Consolidated Financial Statements" ("IFRS 10") and IAS 28 "Investments in Associates and Joint Ventures" - Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures (Amendment) ("IAS 28")

The amendments address the inconsistency between the requirements in IFRS 10 and IAS 28, in dealing with the loss of control of a subsidiary that is contributed to an associate or a joint venture. IAS 28 restricts gains and losses arising from contributions of non-monetary assets to an associate or a joint venture to the extent of the interest attributable to the other equity holders in the associate or joint venture. IFRS 10 requires full profit or loss recognition on the loss of control of a subsidiary. IAS 28 was amended so that the gain or loss resulting from the sale or contribution of assets that constitute a business as defined in IFRS 3 between an investor and its associate or joint venture is recognized in full. IFRS 10 was also amended so that the gain or loss resulting from the sale or contribution of a subsidiary that does not constitute a business as defined in IFRS 3 between an investor and its associate or joint venture is recognized only to the extent of the unrelated investors' interests in the associate or joint venture.

f. IAS 1 - Classification of Liabilities as Current or Non-current

These are the amendments to paragraphs 69-76 of IAS 1 presentation of financial statements and the amended paragraphs related to the classification of liabilities as current or non-current.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (e) ~ (f) to the Company's financial position and performance, and the related impact will be disclosed when the evaluation is completed.

4. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(1) Statement of Compliance

The Company's parent company only financial statements were prepared in accordance with Regulations Governing the Preparation of Financial Reports by Securities Issuers (Regulations).

When a gain or loss on a non-monetary item is recognized in other comprehensive income, any exchange component of that gain or loss is recognized in other comprehensive income. When a gain or loss on a non-monetary item is recognized in profit or loss, any exchange component of that gain or loss is recognized in profit or loss.

(4) Translation of Foreign Currency Financial Statements

The assets and liabilities of foreign operations are translated into NTD at the closing rate of exchange prevailing at the reporting date and their income and expenses are translated at an average exchange rate for the period. The exchange differences arising on the translation are recognized in other comprehensive income. On disposal of a foreign operation, the cumulative amount of the exchange differences relating to that foreign operation, recognized in other comprehensive income and accumulated in the separate component of equity, is reclassified from equity to profit or loss when the gain or loss on disposal is recognized.

On partial disposal of a subsidiary that includes a foreign operation that does not result in a loss of control, the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income is re-attributed to the non-controlling interests in that foreign operation. On partial disposal of an associate or a joint venture that includes a foreign operation that does not result in a loss of significant influence or joint control, only the proportionate share of the cumulative amount of the exchange differences recognized in other comprehensive income is reclassified to profit or loss.

Any goodwill and any fair value adjustments to the carrying amounts of assets and liabilities arising from the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and expressed in its functional currency.

(5) Current and Non-Current Distinction

An asset is classified as current when:

- a. the Company expects to realize the asset, or intends to sell or consume it, in its normal operating cycle;
- b. the Company holds the asset primarily for the purpose of trading;
- c. the Company expects to realize the asset within twelve months after the reporting period; or
- d. the asset is cash or a cash equivalent unless the asset is restricted from being exchanged or used to settle a liability for at least twelve months after the reporting period.

All other assets are classified as non-current.

A liability is classified as current when:

- a. the Company expects to settle the liability in normal operating cycle;
- b. the Company holds the liability primarily for the purpose of trading;
- c. the liability is due to be settled within twelve months after the reporting period; or
- d. the Company does not have an unconditional right to defer settlement of the liability for at least twelve months after the reporting date. Terms of a liability that could, at the option of the counterparty, result in its settlement by the issue of equity instruments do not affect its classification.

All other liabilities are classified as non-current.

(6) Cash Equivalents

Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and with maturity dates that do not present significant risks of changes in value resulting from changes in interest rates, including time deposits with original maturities of three months or less and repurchase agreements collateralized by government bonds and corporate bonds.

(7) Financial Instruments

Financial assets and financial liabilities are recognized when the Company becomes a party to the contractual provisions of the instrument.

The Company determines the classification of its financial assets at initial recognition. In accordance with IFRS 9 and the Regulations, financial assets of the Company are classified as financial assets at fair value through profit or loss, financial assets at fair value through other comprehensive income, and financial assets measured at amortized cost.

Purchase or sale of financial assets and liabilities are recognized using trade date accounting. All financial assets are recognized initially at fair value plus, in the case of investments not at fair value through profit or loss, directly attributable costs. Financial assets at fair value through profit or loss are initially recognized at fair value, and transaction costs are expensed in the statement of comprehensive income.

Financial Assets

- a. Classification and subsequent measurement

- i. Financial assets at fair value through profit or loss

Financial assets that are not measured at amortized cost or at fair value through other comprehensive income are recognized initially at fair value and subsequently measured at fair value with changes in fair value recognized in profit or loss.

ii. Financial assets at fair value through other comprehensive income

At initial recognition, the Company may make an irrevocable election to present in other comprehensive income subsequent changes in the fair value of an investment in an equity instrument that is not held for trading. When there is a disposal of such equity instrument, accumulated amounts presented in other comprehensive income are not subsequently transferred to profit or loss but are transferred directly to the retained earnings.

The debt instruments are measured at fair value through other comprehensive income if both of the following conditions are met:

- (i) the financial asset is held within a business model whose objective is achieved by both collecting contractual cash flows and selling financial assets and
- (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent changes in the fair value of such financial assets at fair value through other comprehensive income are recognized in other comprehensive income. Before derecognition, impairment gains or losses, interest revenue and foreign exchange gains and losses are recognized in profit or loss. When the financial assets are derecognized the cumulative gain or loss previously recognized in other comprehensive income is reclassified from other comprehensive income to profit or loss as a reclassification adjustment.

iii. Financial assets measured at amortized cost

The financial assets are measured at amortized cost (including cash and cash equivalent, notes, accounts and other receivables and other financial assets) if both of the following conditions are met.

- (i) the financial asset is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows; and
- (ii) the contractual terms of the financial asset give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding.

Subsequent to initial recognition for financial assets measured at amortized cost, interest income, measured by the effective interest method amortization process, and impairment losses are recognized during circulation period. Gains and losses are recognized in profit or loss when the financial assets are derecognized.

b. Derecognition of financial assets

A financial asset is derecognized when:

- i. the contractual rights to receive cash flows from the asset have expired;
- ii. the Company has transferred assets and substantially all the risks and rewards of the asset have been transferred; or
- iii. the Company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

On derecognition of a financial asset in its entirety, the difference between the carrying amount and the consideration received or to be received including any cumulative gain or loss that had been recognized in other comprehensive income is recognized in profit or loss (for debt instruments) or directly in retained earnings (for equity instruments).

If the transferred asset is part of a larger financial asset and the part transferred qualifies for derecognition in its entirety, the Company allocates the previous carrying amount of the larger financial asset between the part that continues to be recognized and the part that is derecognized, based on the relative fair values of those parts on the date of the transfer. Any cumulative gain or loss that had been recognized in other comprehensive income is allocated between the part that continues to be recognized and the part that is derecognized, based on the relative fair values of those parts. The difference between the carrying amount allocated to the part derecognized and the sum of the consideration received for the part derecognized and any cumulative gain or loss allocated that had been recognized in other comprehensive income, is recognized in profit or loss or directly in retained earnings.

c. Impairment policy

The Company measures, at each reporting date, an allowance for expected credit losses (ECLs) for debt instrument investments measured at fair value through other comprehensive income and financial assets measured at amortized cost by assessing reasonable and supportable information including forward-looking information. Where the credit risk on a financial asset has not increased significantly since initial recognition, the loss allowance is measured at an amount equal to 12-month ECLs. Where the credit risk on a financial asset has increased significantly since initial recognition, the loss allowance is measured at an amount equal to the lifetime ECLs.

For notes, accounts receivable and contract assets, the Company applies a simplified approach in calculating ECLs. Therefore, the Company does not track changes in credit risk, but instead recognizes a loss allowance based on lifetime ECLs at each reporting date. ECLs are measured based on the Company's historical credit loss experience and customers' current financial condition, adjusted for forward-looking factors, such as customers' economic environment.

(8) Hedge AccountingCash flow hedges

The Company manages exposures arising from foreign currency exchange risk. With the adoption of IFRS 9, the Company designates a hedging relationship between the hedging instrument and the hedged item with the existence of an economic relationship and determines the hedge ratio to meet the hedge effectiveness. The Company designates certain hedging instruments to partially hedge the foreign currency exchange rate risks associated with certain highly probable forecast transactions. The separate component of equity associated with the hedged item is adjusted to the lower of the following (in absolute amounts):

- a. the cumulative gain or loss on the hedging instrument from inception of the hedge; and
- b. the cumulative change in fair value (present value) of the expected future cash flows on the hedged item from inception of the hedge.

The portion of the gain or loss on the hedging instrument that is determined to be an effective hedge is recognized in other comprehensive income, whereas the ineffective portion of the change in the fair value of the hedging instrument is recognized directly in profit or loss. If a hedge of a forecast transaction subsequently results in the recognition of a non-financial asset or a non-financial liability, the associated gains or losses that were recognized in other comprehensive income are included in the initial cost of the asset or liability.

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.

(9) Inventories

Inventories are accounted for on a perpetual basis. Raw materials are stated at actual purchase costs, while the work in process and finished goods are stated at standard costs and subsequently adjusted to weighted-average costs at the end of each month. The cost of work in progress and finished goods comprises raw materials, direct labor, other direct costs and related production overheads. Allocation of fixed production overheads to the costs of conversion is based on the normal capacity of the production facilities. Cost associated with underutilized capacity is expensed as incurred. Inventories are valued at the lower of cost and net realizable value item by item. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale.

Financial Liabilities

a. Classification and subsequent measurement

The Company classifies the instrument issued as a financial liability or an equity instrument in accordance with the substance of the contractual arrangement and the definitions of a financial liability and an equity instrument.

i. Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Excluding changes in own credit risk, gains or losses on the subsequent measurement including interest paid are recognized in profit or loss.

ii. Financial liabilities measured at amortized cost

Financial liabilities measured at amortized cost include interest bearing loans and borrowings that are subsequently measured using the effective interest method after initial recognition. Gains and losses are recognized in profit or loss when the liabilities are derecognized as well as through the effective interest method amortization process.

Amortized cost is calculated by taking into account any discount or premium on acquisition and fees or transaction costs.

b. Derecognition of financial liabilities

A financial liability is derecognized when the obligation under the liability is discharged, cancelled or expires.

When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified (whether or not attributable to the financial difficulty of the debtor), such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability, and the difference in the respective carrying amounts and the consideration paid, including any non-cash assets transferred or liabilities assumed, is recognized in profit or loss.

(10) Investments Accounted For Under the Equity Method

The Company's investments in subsidiaries and associates are accounted for using the equity method other than those that meet the criteria to be classified as non-current assets held for sale.

a. Investment in subsidiaries

A subsidiary is an entity over which the Company has control.

Any difference between the acquisition cost and the Company's share of the net fair value of the identifiable assets and liabilities of subsidiaries are accounted for as follows:

- i. Any excess of the acquisition cost over the Company's share of the net fair value of the identifiable assets and liabilities of a subsidiary at the date of acquisition is recognized as goodwill and is included in the carrying amount of the investment. Amortization of goodwill is not permitted.
- ii. Any excess of the Company's share of the net fair value of the identifiable assets and liabilities of a subsidiary over the acquisition cost, after reassessing the fair value, is recognized as a gain in profit or loss on the acquisition date.

Under the equity method, the investment in the subsidiary is carried on the balance sheet at cost plus post acquisition changes in the Company's share of profit or loss and other comprehensive income of the subsidiary. The Company's share of changes in subsidiaries' profit or loss and other comprehensive income is recognized directly in the Company's profit or loss and other comprehensive income. Distributions received from a subsidiary reduce the carrying amount of the investment.

Unrealized profits and losses due to sales from the Company to subsidiaries are eliminated in the Company's parent company only financial statements. The profits and losses due to the sales from subsidiaries to the Company or the sales between subsidiaries are recognized in the parent company only financial statements to the extent of the shares of interests which are not owned by the Company.

Financial statements of subsidiaries are prepared for the same reporting period as the Company. Where necessary, adjustments are made to bring the accounting policies in line with those of the Company.

When changes in the net assets of the subsidiary were not resulted from their profit or loss or other comprehensive income, and such changes do not affect the Company's ownership percentages, the Company recognizes its proportionate share of all related changes in equity. 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 investment in the subsidiary and the fair value of the consideration paid or received is recognized directly in equity.

The Company ceases to use the equity method upon loss of control and significant influence over the subsidiary. Any difference between the carrying amount of the investment in a subsidiary upon loss of control and the fair value of the retained investment plus proceeds from disposal will be recognized in profit or loss. If an investment in a subsidiary becomes an investment in an associate or a joint venture or an investment in an associate or a joint venture becomes an investment in a subsidiary, the Company continues to apply the equity method and remeasures the retained interest.

The Company determines at each reporting date whether there is any objective evidence that the investments in subsidiaries are impaired. An impairment loss, being the difference between the recoverable amount of the subsidiary and its carrying amount, is recognized in profit or loss in the statement of comprehensive income and forms part of the carrying amount of the investments.

b. 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 an entity, but is not control or joint control over those policies.

Any difference between the acquisition cost and the Company's share of the net fair value of the identifiable assets and liabilities of associates is accounted for as follows:

- i. Any excess of the acquisition cost over the Company's share of the net fair value of the identifiable assets and liabilities of an associate at the date of acquisition is recognized as goodwill and is included in the carrying amount of the investment. Amortization of goodwill is not permitted.
- ii. Any excess of the Company's share of the net fair value of the identifiable assets and liabilities of an associate over the acquisition cost, after reassessing the fair value, is recognized as a gain in profit or loss on the acquisition date.

(11) Property, Plant and Equipment

Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any, and any borrowing costs incurred for long-term construction projects are capitalized if the recognition criteria are met. Significant renewals, improvements and major inspections meeting the recognition criteria are treated as capital expenditures, and the carrying amounts of those replaced parts are derecognized. Maintenance and repairs are recognized in expenses as incurred. Any gain or loss arising from derecognition of the assets is recognized in other operating income and expenses.

Depreciation is calculated on a straight-line basis over the estimated useful lives. A significant part of an item of property, plant and equipment which has a different useful life from the remainder of the item is depreciated separately.

The depreciation methods, useful lives and residual values for the assets are reviewed at each fiscal year end, and the changes from the previous estimation are recorded as changes in accounting estimates.

Except for land, which is not depreciated, the estimated useful lives of the assets are as follows:

Buildings	20~56 years
Machinery and equipment	6 years
Transportation equipment	6 years
Furniture and fixtures	6 years

(12) Lease

The summary of significant accounting policies applying in 2019 is as follows:

A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange of consideration, and to obtain substantially all economic benefits from use of the identified asset. The Company accounts for a lease contract as a single lease and separates the lease and non-lease components included in the contract.

The Company as a lessor

The Company recognizes lease payments from operating leases as rental income on a straight-line basis over the term of the lease.

Under the equity method, the investment in the associate is carried on the balance sheet at cost plus post acquisition changes in the Company's share of profit or loss and other comprehensive income of the associate. The Company's share of changes in associates' profit or loss and other comprehensive income is recognized directly in the Company's profit or loss and other comprehensive income. Distributions received from an associate reduce the carrying amount of the investment. Any unrealized gains and losses resulting from transactions between the Company and the associate are eliminated to the extent of the Company's interest in the associate.

Financial statements of associates are prepared for the same reporting period as the Company. Where necessary, adjustments are made to bring the accounting policies in line with those of the Company.

Upon an associate's issuance of new shares, if the Company takes up more shares than its original proportionate holding while maintaining its significant influence over that associate, such increase would be accounted for as an acquisition of an additional equity interest in the associate. Upon an associate's issuance of new shares, if the Company does not take up proportionate shares and reduces its stockholding percentage while maintaining its significant influence over that associate, a proportionate share of the gain or loss previously recognized in other comprehensive income is reclassified to profit and loss. Any remaining difference will be charged to additional paid-in capital. When a change in equity of an associate does not result from its profit or loss or other comprehensive income, and such changes do not affect the Company's ownership percentage, the Company recognizes its proportionate share of all related changes in equity. Accordingly, upon disposal of the associate, the Company reclassifies the aforementioned additional paid-in capital to profit or loss on a pro rata basis.

The Company ceases to use the equity method upon loss of significant influence over an associate. Any difference between the carrying amount of the investment in an associate upon loss of significant influence and the fair value of the retained investment plus proceeds from disposal will be recognized in profit or loss. If an investment in an associate becomes an investment in a joint venture or an investment in a joint venture becomes an investment in an associate, the Company continues to apply the equity method and does not remeasure the retained interest.

The Company determines at each reporting date whether there is any objective evidence that the investments in associates and joint ventures are impaired. An impairment loss, being the difference between the recoverable amount of the associate or joint venture and its carrying amount, is recognized in profit or loss in the statement of comprehensive income and forms part of the carrying amount of the investments.

The Company as a lessee

At the commencement date of a lease, a lessee is required to recognize right-of-use assets and lease liabilities, except for short-term leases and low-value asset leases.

- a. At the commencement date, lease liabilities should be recognized and measured at the present value of the lease payments that have not been paid at that date, using the Company's incremental borrowing rate. The payments comprise:
 - i. fixed payments less any lease incentives receivable;
 - ii. variable lease payments that depend on an index or rate;
 - iii. amounts expected to be payable by the Company under residual value guarantees;
 - iv. the exercise price of a purchase option if the Company is reasonably certain to exercise; and
 - v. payments for terminating the lease unless it is reasonably certain that early termination will not occur.

Lease liabilities are measured in subsequent periods using the effective interest method, and the interest expenses are recognized over the lease terms. In addition, the carrying amount of lease liabilities is remeasured if there is a modification which is not accounted as a separate lease, a change in the lease term, a change in the lease payments (e.g., changes to future payments resulting from a change in an index or rate used to determine such lease payments) or a change in the assessment of an option to purchase the underlying asset.

- b. At the commencement date, the right-of-use assets should be measured at cost, which comprise:
 - i. the amount of the initial measurement of the lease liabilities;
 - ii. any lease payments made at or before the commencement date; and
 - iii. any initial direct costs incurred.

Subsequent to initial recognition, the right-of-use assets are measured using cost model. Right-of-use assets measured under the cost model are depreciated from the commencement date to the earlier of the end of the useful life of the right-of-use assets or the end of the lease terms. Any remeasurement of the lease liabilities results in a corresponding adjustment of the right-of-use assets.

The Company presents right-of-use assets and lease liabilities on the balance sheets, and depreciation expenses and interest expenses are separately presented in the statements of comprehensive income. The Company recognizes the lease payments associated with short-term leases and low-value asset leases as expenses on a straight-line basis over the lease terms.

(13) Intangible Assets

Intangible assets acquired separately are measured on initial recognition at cost. The cost of intangible assets acquired in a business combination is its fair value as at the date of acquisition. Following initial recognition, intangible assets are carried at cost less any accumulated amortization and accumulated impairment losses, if any. Internally generated intangible assets which fail to meet the recognition criteria are not capitalized and the expenditures are reflected in profit or loss in the period incurred.

The useful lives of intangible assets are assessed as either finite or indefinite.

Intangible assets with finite useful lives are amortized over the useful lives and assessed for impairment whenever there is an indication that the intangible assets may be impaired. The amortization period and the amortization method for an intangible asset with a finite useful life are reviewed at least at the end of each fiscal year. Changes in the expected useful life or the expected pattern of consumption of future economic benefits embodied in the asset is accounted for by changing the amortization period or method, as appropriate, and is treated as changes in accounting estimates.

Intangible assets with indefinite useful lives are not amortized, but are tested for impairment annually, either individually or at the CGU level. The assessment of indefinite useful life is reviewed annually to determine whether the indefinite useful life continues to be supportable. If not, the change in useful life from indefinite to finite is made on a prospective basis.

Gains or losses arising from derecognition of an intangible asset are recognized in other operating income and expenses.

Accounting policies of the Company's intangible assets are summarized as follows:

- a. Software is amortized over the contract term or estimated useful life (3 years) on a straight-line basis.
- b. Patent and technology license fee: Upon signing of contract and obtaining the right to intellectual property, any portion attributable to non-cancellable and mutually agreed future fixed license fees for patent and technology is discounted, and recognized as an intangible asset and related liability. The cost of the intangible asset is not revalued once determined on initial recognition, and is amortized over the useful life (5~10 years) on a straight-line basis. Interest expenses from the related liability are recognized and calculated based on the effective interest method. Based on the timing of payments, the liability is classified as current and non-current.
- c. Others are mainly the intellectual property license fees, amortized over the shorter of the contract term or estimated useful life (3 years) of the related technology on a straight-line basis.

(14) Impairment of Non-Financial Assets

The Company assesses at each reporting date whether there is an indication that an asset in the scope of IAS 36 “Impairment of Assets” may be impaired. If any indication exists, the Company completes impairment testing for the CGU to which the individual assets belong. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. The recoverable amount of an individual asset or a CGU is the higher of its fair value less costs of disposal and its value in use. If circumstances indicate that previously recognized impairment losses may no longer exist or may have decreased at each reporting date, the Company re-assesses the asset’s or CGU’s recoverable amount. A previously recognized impairment loss is reversed only if there has been an increase in the estimated service potential of an asset which in turn increases the recoverable amount since the last impairment loss was recognized. The reversal is limited so that the carrying amount of the asset does not exceed its recoverable amount, nor exceed the carrying amount that would have been determined, net of depreciation or amortization, had no impairment loss been recognized for the asset in prior years.

The recognition or reversal of impairment losses is classified as other operating income and expenses.

(15) BondsConvertible bonds

The Company evaluates the terms of the convertible bonds issued to determine whether it contains both a liability and an equity component. Furthermore, the Company assesses if the economic characteristics and risks of the put and call options embedded in the convertible bonds are closely related to the economic characteristics and risk of the host contract before separating the equity element.

For the liability component excluding the derivatives, its fair value is determined based on the effective interest rate applied at that time by the market to instruments of comparable credit status. The liability component is classified as a financial liability measured at amortized cost using the effective interest method before the instrument is converted or settled. For the embedded derivative that is not closely related to the host contract, it is classified as a liability component and subsequently measured at fair value through profit or loss unless it qualifies as an equity component. The equity component is recognized initially at the difference between the fair value of the compound financial instrument as a whole and the fair value of the liability component. Its carrying amount is not remeasured in the subsequent accounting periods. If the convertible bond issued does not have an equity component, it is accounted for as a hybrid instrument in accordance with the requirements under IFRS 9.

If the convertible bondholders exercise their conversion right before maturity, the Company shall adjust the carrying amount of the liability component. The adjusted carrying amount of the liability component at conversion and the carrying amount of equity component are credited to common stock and additional paid-in capital-premiums. No gain or loss is recognized upon bond conversion.

In addition, the liability component of convertible bonds is classified as a current liability if within 12 months the bondholders may exercise the put right. After the put right expires, the liability component of the convertible bonds should be reclassified as a non-current liability if it meets the definition of a non-current liability in all other respects.

(16) Post-Employment Benefits

Under defined contribution pension plans, the contribution payable to the plan in exchange for the service rendered by an employee during a period shall be recognized as an expense. The contribution payable, after deducting any amount already paid, is recognized as a liability.

Under defined benefit pension plans, the net defined benefit liability (asset) shall be recognized as the amount of the present value of the defined benefit obligation, deducting the fair value of any plan assets and adjusting for any effect of the asset ceiling. Service cost and net interest on the net defined benefit liability (asset) are recognized as expenses in the period of service. Remeasurement of the net defined benefit liability (asset), which comprises actuarial gains and losses, the return on plan assets and any change in the effect of the asset ceiling, excluding any amounts included in net 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 shall not be reclassified to profit or loss in a subsequent period.

(17) Government Grants

In accordance with IAS 20 “Accounting for Government Grants and Disclosure of Government Assistance”, the Company recognizes the government grants when there is reasonable assurance that such grants will be received and the conditions attaching to them will be complied with.

An asset related government grant is recorded as deferred income and recognized in profit or loss on a straight-line basis over the useful lives of the assets. An expense related government grant is recognized in profit or loss on a systematic basis over the periods in which the Company recognizes as expenses the related costs for which the grant is intended to compensate. A government grant that compensates for expenses or losses already incurred or for the purpose of giving immediate financial support to the Company with no future related costs is recognized in profit or loss when it becomes receivable.

(18) Treasury Stock

The Company's own equity instruments repurchased (treasury stocks) are recognized at repurchase cost and deducted from equity. No gain or loss shall be recognized in profit or loss on the purchase, sale, issue or cancellation of the Company's own equity instruments. Any difference between the carrying amount and the consideration is recognized in equity.

(19) Share-Based Payment Transactions

The cost of equity-settled transactions between the Company and its employees is measured at the fair value using an appropriate pricing model by reference to the market price of the equity instruments on the grant date.

The cost of equity-settled transactions is recognized, together with a corresponding increase in equity, over the periods in which the performance and/or service conditions are being fulfilled. The cumulative expense recognized for equity-settled transactions at each reporting date reflects the extent to which the vesting period has passed and the Company's best estimate of the quantity of equity instruments that will ultimately vest. The charge to profit or loss for a period represents the movement in cumulative expense recognized between the beginning and the end of that period.

No expense will be recognized for awards that do not ultimately vest, except for equity-settled transactions for which vesting is conditional upon a market or non-vesting condition. These are treated as vested irrespective of whether the market or non-vesting condition is satisfied, provided that all other performance and/or service conditions are satisfied.

Where the terms of an equity-settled transaction award are modified, the minimum expense recognized is the expense as if the terms had not been modified, if the original terms of the award are met. An additional expense is recognized for any modification that increases the total fair value of the share-based payment transaction, or is otherwise beneficial to the employee as measured at the date of modification.

Where an equity-settled award is cancelled, it is treated as if it fully vests on the date of cancellation, and any expense not yet recognized for the award is recognized immediately. This includes any award where non-vesting conditions within the control of either the entity or the employee are not met. However, if a new award substitutes for the cancelled award and is designated as a replacement award on the date that it is granted, the cancelled and new awards are treated as if they were a modification of the original award.

(20) Revenue Recognition

Revenue from Contracts with Customers

The Company recognizes revenue from contracts with customers by applying the following steps of IFRS 15 "Revenue from Contracts with Customers":

- a. identify the contract with a customer;
- b. identify the performance obligations in the contract;
- c. determine the transaction price;
- d. allocate the transaction price to the performance obligations in the contract; and
- e. recognize revenue when (or as) the entity satisfies its performance obligations

Revenues on the Company's contracts with customers for the sales of wafers and joint technology development are recognized as the Company satisfies its performance obligations to customers upon transfer of control of promised goods and services. The Company recognizes revenue at transaction price that are determined using contractual prices reduced by sales returns and allowances which the Company estimates based on historical experience having determined that a significant reversal in the amount of cumulative revenue recognized are not probable to occur. The Company recognizes refund liabilities for estimated sales return and allowances based on the customer complaints, historical experience, and other known factors.

The Company recognizes accounts receivable when the Company transfers control of the goods or services to customers and has a right to an amount of consideration that is unconditional. Such accounts receivable are short term and do not contain a significant financing component. For certain contracts that do not provide the Company unconditional rights to the consideration, and the transfer of control of the goods or services has been satisfied, the Company recognizes contract assets and revenues.

Consideration received from customers prior to the Company having satisfied its performance obligations are accounted for as contract liabilities which are transferred to revenue after the performance obligations are satisfied. The Company recognizes costs to fulfill a contract when the costs relate directly to the contract, generate or enhance resources to be used to satisfy performance obligations in the future, and are expected to be recovered. The costs and revenues are recognized when the Company satisfies its performance obligations to customers upon transfer of control of promised goods and services.

Interest income

For financial assets measured at amortized cost and financial assets at fair value through other comprehensive income, interest income is recorded using the effective interest method and recognized in profit or loss.

Dividends

Revenue is recognized when the Company's right to receive the dividends is established, which is generally when stockholders approve the dividend.

(21) Income Tax

Income tax expense (benefit) is the aggregate amount of current income tax and deferred income tax included in the determination of profit or loss for the period.

Current income tax

Current income tax assets and liabilities for the current period and prior periods are measured using the tax rates and tax laws that have been enacted or substantively enacted by the end of the reporting period. Current income tax relating to items recognized directly in other comprehensive income or equity is recognized in other comprehensive income or equity rather than profit or loss.

The additional income tax for undistributed earnings is recognized as income tax expense in the subsequent year when the distribution proposal is approved by the stockholders' meeting.

Deferred income tax

Deferred income tax is determined using the liability method on temporary differences between the tax bases of assets and liabilities and their carrying amounts in financial statements at the reporting date.

Deferred tax liabilities are recognized for all taxable temporary differences, except:

- a. When the deferred tax liability arises from the initial recognition of goodwill or of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss;
- b. In respect of taxable temporary differences associated with investments in subsidiaries, associates and joint ventures, when the timing of the reversal of the temporary differences can be controlled and it is probable that the temporary differences will not reverse in the foreseeable future.

Deferred tax assets are recognized for all deductible temporary differences, the carryforward of unused tax losses and unused tax credits, to the extent that it is probable that future taxable profit will be available against which the deductible temporary differences and the carryforward of unused tax losses and unused tax credits can be utilized, except:

- a. Where the deferred tax asset relating to the deductible temporary difference arises from the initial recognition of an asset or liability in a transaction that is not a business combination and, at the time of the transaction, affects neither the accounting profit nor taxable profit or loss;
- b. In respect of deductible temporary differences associated with investments in subsidiaries, associates and joint ventures, deferred tax assets are recognized only to the extent that it is probable that the temporary differences will reverse in the foreseeable future and taxable profit will be available against which the temporary differences can be utilized.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the year when the asset is realized or the liability is settled, based on tax rates and tax laws that have been enacted or substantively enacted at the reporting date. The measurement of deferred tax assets and liabilities reflects the tax consequences that would follow 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. Deferred tax relating to items recognized outside profit or loss is not recognized in profit or loss but rather in other comprehensive income or directly in equity. Deferred tax assets are reassessed and recognized at each reporting date. Unrecognized deferred tax assets are reassessed at each reporting date and are recognized to the extent that it has become probable that future taxable profits will allow the deferred tax assets to be recovered.

Deferred tax assets and liabilities offset each other, if a legally enforceable right exists to set off current income tax assets against current income tax liabilities, and the deferred taxes relate to the same taxable entity and the same taxation authority.

Tax benefits acquired as part of a business combination, but not satisfying the criteria for separate recognition at the acquisition date, might be realized and recognized subsequently as follows:

- a. Acquired deferred tax benefits recognized within the measurement period that result from new information about facts and circumstances that existed at the acquisition date shall be applied to reduce the carrying amount of any goodwill related to that acquisition. If the carrying amount of that goodwill is nil, any remaining deferred tax benefits shall be recognized in profit or loss;
- b. All other acquired deferred tax benefits realized shall be recognized in profit or loss, other comprehensive income or equity.

(1) The Fair Value of Level 3 Financial Instruments

Where the fair values of the level 3 financial assets and financial liabilities recorded on the balance sheet cannot be derived from active markets, they are determined by the application of an appropriate valuation method including the income approach and market approach. The valuation of these financial assets involves significant judgment in the preparation of cash flow forecasts, a selection of comparable companies or equity transaction prices, as well as the application of assumptions such as discount rates, discounts for lack of marketability, and valuation multiples, etc. Changes in assumptions about these factors could affect the reported fair value of the financial assets. Please refer to Note 12 for more details.

(2) Inventories

Inventories are valued at the lower of cost and net realizable value item by item. Net realizable value is the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale. Please refer to Note 6(4). Costs of completion include direct labor and overhead, including depreciation and maintenance of production equipment, indirect labor costs, indirect material costs, supplies, utilities and royalties that is expected to be incurred at normal production level. The Company estimates normal production level taking into account loss of capacity resulting from planned maintenance, based on historical experience and current production capacity.

(3) Post-Employment Benefits

Defined benefit costs and the present value of the defined benefit obligation for a pension plan are determined using the projected unit credit method. An actuarial valuation involves making various assumptions, which include the determination of the discount rate, future salary increase rate, mortality rate, etc., and may differ from actual developments in the future. In determining the appropriate discount rate, management considers the interest rates of the government bonds extrapolated from maturity corresponding to the expected duration of the defined benefit obligation. As for the rate of future salary increase, management takes account of past experiences, comparisons within the industry and the geographical region, inflation and the discount rate. Due to the complexity of the actuarial valuation and its long-term nature, a defined benefit obligation is highly sensitive to changes in these assumptions. The assumptions used are disclosed in Note 6(13).

The Company has considered whether it is probable that a taxation authority will accept the uncertain tax treatments used in its income tax filings. If the Company concludes that it is probable that the taxation authority will accept an uncertain tax treatment, the Company determines the taxable profit, tax bases, unused tax losses, unused tax credits or tax rates consistently with the tax treatments used or planned to be used in its income tax filings. If it is not probable that the taxation authority will accept an uncertain tax treatment, the Company makes estimates using either the most likely amount or the expected value of the tax treatment, depending on which method the Company expects to better predict the resolution of the uncertainty. The Company reassesses a judgement or estimate if the facts and circumstance change.

(22) Earnings per Share

Earnings per share is computed according to IAS 33, "Earnings per Share". Basic earnings per share is computed by dividing net income by the weighted-average number of ordinary shares outstanding during the current reporting period. Diluted earnings per share is computed by taking basic earnings per share into consideration plus additional ordinary shares that would have been outstanding if the dilutive share equivalents had been issued. Net income is also adjusted for interest and other income or expenses derived from any underlying dilutive share equivalents. The weighted-average of outstanding shares is adjusted retroactively for stock dividends and employee stock compensation issues.

5. SIGNIFICANT ACCOUNTING JUDGMENTS, ESTIMATES AND ASSUMPTIONS

The preparation of the Company's parent company only financial statements requires management to make judgments, estimates and assumptions that affect the reported amounts of revenues, expenses, assets, liabilities, the accompanying disclosures and the disclosure of contingent liabilities. However, uncertainty about these assumptions and estimates could result in outcomes that require a material adjustment to the carrying amount of assets or liabilities affected in future periods.

The key assumptions concerning the future and other key sources of estimating uncertainty at the reporting date that would have a significant risk for a material adjustment to the carrying amounts of assets or liabilities within the next fiscal year are discussed below.

The Company bases its assumptions and estimates on information available when the parent company only financial statements were prepared. Existing circumstances and assumptions about future developments, however, may change due to market changes or circumstances arising beyond the control of the Company. Such changes are reflected in the assumptions when they occur.

6. CONTENTS OF SIGNIFICANT ACCOUNTS(1) Cash and Cash Equivalents

	As of December 31,	
	2019	2018
Cash on hand and petty cash	\$4,733	\$4,734
Checking and savings accounts	5,688,872	10,439,872
Time deposits	52,922,953	40,761,747
Repurchase agreements collateralized by government bonds and corporate notes	7,918,278	8,135,817
Total	\$66,534,836	\$59,342,170

(2) Financial Assets at Fair Value through Profit or Loss

	As of December 31,	
	2019	2018
Financial assets mandatorily measured at fair value through profit or loss		
Common stocks	\$4,909,603	\$4,089,905
Preferred stocks	20,125	26,700
Funds	184,500	180,900
Forward contracts	-	3,561
Option	-	-
Total	\$5,114,228	\$4,301,066

Current	\$668,476	\$497,042
Noncurrent	4,445,752	3,804,024
Total	\$5,114,228	\$4,301,066

The Company had a call option of a joint venture agreement between FUJITSU SEMICONDUCTOR LIMITED (FSL), which was measured at fair value and the change in the fair value was recorded in profit or loss. On June 29, 2018, the Board of Directors of the Company resolved to exercise the call option, and completed the acquisition on October 1, 2019.

(3) Accounts Receivable, Net

	As of December 31,	
	2019	2018
Accounts receivable	\$13,563,695	\$13,583,599
Less: loss allowance	(663,686)	-
Net	\$12,900,009	\$13,583,599

(4) Impairment of Property, Plant and Equipment

At each reporting date or whenever events indicate that the asset's value has declined or significant changes in the market with an adverse effect have taken place, the Company assesses whether there is an indication that an asset in the scope of IAS 36 may be impaired. If any indication exists, the Company completes impairment testing for the CGU to which the individual assets belong. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount. The recoverable amount of an individual asset or CGU is the higher of fair value less costs of disposal and its value in use. The fair value less costs of disposal is based on best information available to reflect the amount that an entity could obtain from the disposal of the asset in an orderly transaction between market participants, after deducting the costs of disposal. The value in use is measured at the net present value of the future cash flows the entity expects to derive from the asset or CGU. Cash flow projection involves subjective judgments and estimates which include the estimated useful lives of property, plant and equipment, capacity that generates future cash flows, capacity of physical output, potential fluctuations of economic cycle in the industry and the Company's operating situation.

(5) Income Tax

Uncertainties exist with respect to the interpretation of complex tax regulations, changes in tax laws, and the amount and timing of future taxable income. The Company establishes provisions, based on reasonable estimates, for possible consequences of audits by the tax authority. The amount of such provisions is based on various factors, such as experience of previous tax audits and different interpretations of tax regulations made by the responsible tax authority.

Deferred tax assets are recognized for all carryforward of unused tax losses, tax credits and deductible temporary differences to the extent that it is probable that future taxable profit will be available or there are sufficient taxable temporary differences against which the unused tax losses, unused tax credits or deductible temporary differences can be utilized. The amount of deferred tax assets determined to be recognized is based upon the likely timing and the level of future taxable profits and taxable temporary differences. Please refer to Note 6(23) for more details on unrecognized deferred tax assets.

Aging analysis of accounts receivable, net:

	As of December 31,	
	2019	2018
Neither past due nor impaired	1,757,352	2,471,790
Past due but not impaired:	129,322	433,672
≤ 30 days	84,043	511,706
31 to 60 days	95,137	359,592
61 to 90 days	602,704	249,654
91 to 120 days	2,668,558	4,026,414
≥ 121 days	\$12,900,009	\$13,583,599
Subtotal		
Total		

Movement of loss allowance for accounts receivable:

	For the years ended	
	2019	2018
Beginning balance	\$-	\$-
Net charge for the period	663,686	-
Ending balance	\$663,686	\$-

The collection periods for third party domestic sales and third party overseas sales were month-end 30~60 days and net 30~60 days, respectively.

An impairment analysis is performed at each reporting date to measure expected credit losses (ECLs) of accounts receivable. For receivable past due within 60 days, including not past due, the Company estimates a provision rate to calculate ECLs. A provision rate is determined based on the Company's historical credit loss experience and customers' current financial condition, adjusted for forward-looking factors, such as customers' economic environment. For the receivable past due over 60 days, the Company applies the aforementioned provision rate and also individually assesses whether to recognize additional expected credit losses by considering customer's operating situation and debt-paying ability.

(4) Inventories, Net

	As of December 31,	
	2019	2018
Raw materials	\$4,414,620	\$3,182,267
Supplies and spare parts	2,061,059	1,766,380
Work in process	8,791,223	9,131,201
Finished goods	1,038,210	1,134,786
Total	\$16,305,112	\$15,214,634

a. For the years ended December 31, 2019 and 2018, the Company recognized NT\$93,322 million and NT\$98,266 million, respectively, in operating cost, of which NT\$1,174 million and NT\$503 million were related to write-down of inventories.

b. None of the aforementioned inventories were pledged.

(5) Financial Assets at Fair Value through Other Comprehensive Income, Non-Current

	As of December 31,	
	2019	2018
Equity instruments		
Common stocks	\$14,213,103	\$10,947,641
Preferred stocks	175,494	184,026
Total	\$14,388,597	\$11,131,667

a. These investments in equity instruments are held for medium to long-term purposes and therefore are accounted for as fair value through other comprehensive income.

b. Amounts recognized in profit or loss and other comprehensive income in relation to the financial assets at fair value through other comprehensive income are listed below:

	For the years ended	
	2019	2018
Dividend income recognized in profit or loss		
Held at end of period	\$339,327	\$249,391
Derecognized during the period	-	-
Total	\$339,327	\$249,391

c. In consideration of the Company's investment strategy, the Company disposed and derecognized partial equity instrument investments measured at fair value through other comprehensive income. Details on derecognition of such investments for the years end December 31, 2019 and 2018 are as follow:

	For the years ended	
	2019	2018
Fair value on the date of sale	\$2,348,454	\$-
Cumulative gains (losses) reclassified to retained earnings due to derecognition	\$(551,903)	\$-

(6) Investments Accounted For Under the Equity Method

a. Details of investments accounted for under the equity method are as follows:

Listed company	As of December 31,		Percentage of ownership or voting rights	Amount	Percentage of ownership or voting rights	Amount
	2018					
	2019	2018				
Investments in associates						
FARADAY TECHNOLOGY CORP. (FARADAY) (Note A)	\$1,470,499	13.78	\$1,477,167	13.78		
Unlisted companies						
Investments in subsidiaries						
UMC GROUP (USA)	1,755,033	100.00	1,712,388	100.00		
UNITED MICROELECTRONICS (EUROPE) B.V.	142,378	100.00	142,532	100.00		
UMC CAPITAL CORP.	3,756,049	100.00	3,496,187	100.00		
GREEN EARTH LIMITED	11,643,953	100.00	17,150,726	100.00		
TLC CAPITAL CO., LTD.	4,273,912	100.00	4,246,675	100.00		
UMC INVESTMENT (SAMOA) LIMITED	42,022	100.00	42,908	100.00		
FORTUNE VENTURE CAPITAL CORP. (FORTUNE) (Note B, C)	4,398,331	100.00	5,358,068	100.00		
UMC GROUP JAPAN	95,116	100.00	45,187	100.00		
UMC KOREA CO., LTD.	20,499	100.00	20,688	100.00		
OMNI GLOBAL LIMITED	590,702	100.00	572,512	100.00		
SINO PARAGON LIMITED	121,840	100.00	120,901	100.00		
BEST ELITE INTERNATIONAL LIMITED	23,183,005	100.00	23,090,363	100.00		
UNITED SEMICONDUCTOR JAPAN CO., LTD. (Note D)	17,515,233	100.00	-	-		
WAVETEK MICROELECTRONICS CORPORATION	260,035	79.83	275,854	77.74		
NEXPOWER TECHNOLOGY CORP.	-	47.75	53,958	47.75		
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. (Note E)	87,327	-	2,786,893	-		
Subtotal	67,885,435		59,115,840			
Investments in associates						
MTIC HOLDINGS PTE. LTD.	18,157	45.44	3,026	45.44		
UNITECH CAPITAL INC.	642,660	42.00	568,005	42.00		
TRIKNIGHT CAPITAL CORPORATION	2,281,631	40.00	1,520,575	40.00		
HSUN CHIEH INVESTMENT CO., LTD.	4,378,193	36.49	3,419,430	36.49		
YANN YUAN INVESTMENT CO., LTD.	3,829,934	30.87	2,642,543	30.87		
Subtotal	11,150,575		8,153,579			
Total	\$80,506,509		\$68,746,586			

Note A: Beginning from June 2015, the Company accounts for its investment in FARADAY as an associate given the fact that the Company obtained the ability to exercise significant influence over FARADAY through representation on its Board of Directors.

Note B: As of July 1, 2018, UMC NEW BUSINESS INVESTMENT CORP. was merged with FORTUNE and FORTUNE is the surviving company.

Note C: As of December 31, 2019 and 2018, the costs of investment were NT\$4,518 million and NT\$5,478 million, respectively. After deducting the Company's stock held by the subsidiary (treated as treasury stock by the Company) of NT\$120 million, the residual book values totalled NT\$4,398 million and NT\$5,358 million as of December 31, 2019 and 2018, respectively.

Note D: The Company exercised the call option of a joint venture agreement between FUJI SEMICONDUCTOR LIMITED (FSL) to acquired 84.1% ownership interest in MIE FUJITSU SEMICONDUCTOR LIMITED (MIFS) for JPY 54.4 billion on October 1, 2019. The Company previously held 15.9% of ownership interest in MIFS. MIFS became a wholly-owned subsidiary of the Company and was renamed as UNITED SEMICONDUCTOR JAPAN CO., LTD. (USJC) upon completion of the acquisition. The fair value of the net identifiable assets acquired and liabilities assumed was in excess of the aggregate consideration transferred and the previously held ownership interest of 15.9% in USJC at the acquisition date, and the difference was recognized as bargain purchase gain. Recognition of the bargain purchase gain resulted from the previously held ownership interest of 15.9% in USJC which was remeasured at fair value with the consideration of minority interest discount immediately at the acquisition date.

Note E: Please refer to Note 9(4).

The carrying amount of investments accounted for using the equity method for which there are published price quotations amounted to NT\$1,470 million and NT\$1,477 million, as of December 31, 2019 and 2018, respectively. The fair value of these investments were NT\$1,928 million and NT\$1,448 million, as of December 31, 2019 and 2018, respectively.

Certain investments accounted for under the equity method were audited by other independent accountants. Shares of profit or loss of these subsidiaries, associates and joint ventures amounted to NT\$1,174 million and NT\$(749) million for the years ended December 31, 2019 and 2018, respectively. Share of other comprehensive income (loss) of these subsidiaries, associates and joint ventures amounted to NT\$1,189 million and NT\$(230) million for the years ended December 31, 2019 and 2018, respectively. The balances of investments accounted for under the equity method were NT\$11,132 million and NT\$8,151 million as of December 31, 2019 and 2018, respectively.

None of the aforementioned investments accounted for using the equity method were pledged.

Accumulated Depreciation and Impairment:

b. Financial information of associates:

There is no individually significant associate for the Company. When an associate is a foreign operation, and the functional currency of the foreign entity is different from the Company, an exchange difference arising from translation of the foreign entity will be recognized in other comprehensive income (loss). Such exchange differences recognized in other comprehensive income (loss) in the financial statements for the years ended December 31, 2019 and 2018 were NT\$(19) million and NT\$27 million, respectively, which were not included in the following table.

The aggregate amount of the Company's share of its associates that are accounted for using the equity method was as follows:

	For the years ended	
	2019	2018
Income (loss) from continuing operations	\$1,134,570	\$(617,128)
Other comprehensive income (loss)	1,264,480	(472,059)
Total comprehensive income (loss)	\$2,399,050	\$(1,089,187)

c. One of the Company's associates, HSUN CHIEH INVESTMENT CO., LTD., held 441 million shares of the Company's stock as of December 31, 2019 and 2018. Another associate, YANN YUAN INVESTMENT CO., LTD., held 200 million shares and 172 million shares of the Company's stock as of December 31, 2019 and 2018.

(7) Property, Plant and Equipment

2019

a. Assets Used by the Company(Note):

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2019	\$861,487	\$25,612,212	\$749,666,853	\$46,906	\$5,503,934	\$4,272,819	\$785,964,211
Additions	-	-	-	-	-	9,557,500	9,557,500
Disposals	-	(4,637)	(2,736,247)	(2,327)	(12,776)	(67,457)	(2,823,444)
Transfers and reclassifications	-	30,577	10,900,865	3,557	211,284	(10,388,204)	758,079
Exchange effect	-	(52,450)	(3,039,442)	(76)	(7,655)	(21,468)	(3,121,091)
As of December 31, 2019	\$861,487	\$25,585,702	\$754,792,029	\$48,060	\$5,694,787	\$3,353,190	\$790,335,255

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2019	\$-	\$819,016	\$188,881	\$995,916	\$2,003,813	\$-	\$686,971,254
Depreciation	-	89,485	3,827	42,155	135,467	-	31,203,508
Disposals	-	(334)	-	(317)	(651)	-	(2,577,512)
Transfers and reclassifications	-	-	(67,295)	10	(67,285)	-	67,285
Exchange effect	-	(2,429)	-	(850)	(3,279)	-	(2,841,979)
As of December 31, 2019	\$-	\$905,738	\$125,413	\$1,036,914	\$2,068,065	\$-	\$712,822,556
Net carrying amount:	\$861,487	\$25,585,702	\$754,792,029	\$48,060	\$5,694,787	\$3,353,190	\$790,335,255
As of December 31, 2019	\$861,487	\$9,295,797	\$63,055,439	\$13,096	\$953,690	\$3,353,190	\$77,512,699

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2019	\$-	\$15,333,123	\$667,193,746	\$32,946	\$4,411,439	\$-	\$686,971,254
Depreciation	-	990,980	29,858,993	4,320	349,215	-	31,203,508
Disposals	-	(4,624)	(2,557,858)	(2,327)	(12,703)	-	(2,577,512)
Transfers and reclassifications	-	-	67,295	-	(10)	-	67,285
Exchange effect	-	(29,574)	(2,805,586)	25	(6,844)	-	(2,841,979)
As of December 31, 2019	\$-	\$16,289,905	\$691,756,590	\$34,964	\$4,741,097	\$-	\$712,822,556
Net carrying amount:	\$861,487	\$9,295,797	\$63,055,439	\$13,096	\$953,690	\$3,353,190	\$77,512,699

b. Assets Subject to Operating Leases(Note):

Cost:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2019	\$452,915	\$2,316,123	\$207,285	\$1,150,260	\$4,126,583
Disposals	-	(623)	-	(317)	(940)
Transfers and reclassifications	-	-	(81,872)	3,213	(78,659)
Exchange effect	-	(4,265)	-	(908)	(5,173)
As of December 31, 2019	\$452,915	\$2,311,235	\$125,413	\$1,152,248	\$4,041,811

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2019	\$-	\$819,016	\$188,881	\$995,916	\$2,003,813
Depreciation	-	89,485	3,827	42,155	135,467
Disposals	-	(334)	-	(317)	(651)
Transfers and reclassifications	-	-	(67,295)	10	(67,285)
Exchange effect	-	(2,429)	-	(850)	(3,279)
As of December 31, 2019	\$-	\$905,738	\$125,413	\$1,036,914	\$2,068,065
Net carrying amount:	\$452,915	\$1,405,497	\$-	\$115,334	\$1,973,746

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

2018

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2018	\$1,314,402	\$27,665,148	\$737,442,185	\$48,423	\$6,371,346	\$5,120,892	\$777,962,396
Additions	-	-	-	-	-	9,861,161	9,861,161
Disposals	-	(64,878)	(2,624,143)	(7,515)	(7,625)	-	(2,704,161)
Transfers and reclassifications	-	244,298	10,749,582	5,687	278,107	(10,713,653)	564,021
Exchange effect	-	83,767	4,306,514	311	12,366	4,419	4,407,377
As of December 31, 2018	\$1,314,402	\$27,928,335	\$749,874,138	\$46,906	\$6,654,194	\$4,272,819	\$790,090,794

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2018	\$-	\$14,984,104	\$630,805,294	\$36,612	\$5,034,412	\$-	\$650,860,422
Depreciation	-	1,184,606	35,076,853	3,208	370,296	-	36,634,963
Disposals	-	(57,812)	(2,340,752)	(7,193)	(7,598)	-	(2,413,355)
Exchange effect	-	41,241	3,841,232	319	10,245	-	3,893,037
As of December 31, 2018	\$-	\$16,152,139	\$667,382,627	\$32,946	\$5,407,355	\$-	\$688,975,067
Net carrying amount:							
As of December 31, 2018	\$1,314,402	\$11,776,196	\$82,491,511	\$13,960	\$1,246,839	\$4,272,819	\$101,115,727

Property, plant and equipment were not pledged as collateral.

(8) Leases

The Company leases various properties, such as land, buildings, machinery and equipment, transportation equipment and other equipment with lease terms of 2 to 30 years. Most lease contracts of land located in R.O.C state that lease payments will be adjusted based on the announced land value. The Company does not have purchase options of leased land at the end of the lease terms.

a. The Company as a lessee

(a) Right-of-use Assets

	As of December 31, 2019
Land	\$2,905,908
Buildings	24,925
Machinery and equipment	314,207
Transportation equipment	9,509
Other equipment	7,450
Net	\$3,261,999

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

	For the year ended December 31, 2019
Depreciation	\$257,198
Land	8,308
Buildings	19,385
Machinery and equipment	4,907
Transportation equipment	2,193
Other equipment	\$291,991
Total	

i. For the year ended December 31, 2019, the Company's addition to right-of-use assets amounted to NT\$204million.

ii. Right-of-use assets were not pledged as collateral.

(b) Lease Liabilities

	As of December 31, 2019
Current	\$248,788
Noncurrent	2,988,314
Total	\$3,237,102

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

Please refer to Note 6(21) for the interest expenses on the lease liabilities.

b. The Company as a lessor

The Company entered into leases on certain property, plant and equipment which are classified as operating leases as they did not transfer substantially all of the risks and rewards incidental to ownership of the underlying assets. The main contracts are to lease the dormitory to the employees with cancellation clauses. Please refer to Note 6(7) for relevant disclosure of property, plant and equipment for operating leases under IFRS 16.

(9) Intangible Assets

2019

Cost:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2019	\$688,271	\$4,589,136	\$3,190,018	\$8,467,425
Additions	1,335,824	806,915	851,679	2,994,418
Disposals	(218,859)	(953,128)	(638,815)	(1,810,802)
Reclassifications	36,210	-	-	36,210
Exchange effect	(969)	(18,747)	-	(19,716)
As of December 31, 2019	\$1,840,477	\$4,424,176	\$3,402,882	\$9,667,535

Accumulated Amortization and Impairment:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2019	\$337,609	\$2,838,058	\$2,405,599	\$5,581,266
Amortization	464,928	510,020	849,330	1,824,278
Disposals	(218,859)	(953,128)	(638,815)	(1,810,802)
Exchange effect	(675)	(9,358)	-	(10,033)
As of December 31, 2019	\$583,003	\$2,385,592	\$2,616,114	\$5,584,709
Net carrying amount:				
As of December 31, 2019	\$1,257,474	\$2,038,584	\$786,768	\$4,082,826

2018

Cost:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2018	\$731,316	\$4,521,199	\$3,565,606	\$8,818,121
Additions	-	214,278	612,253	826,531
Disposals	(414,676)	(179,418)	(987,841)	(1,581,935)
Reclassifications	369,563	-	-	369,563
Exchange effect	2,068	33,077	-	35,145
As of December 31, 2018	\$688,271	\$4,589,136	\$3,190,018	\$8,467,425

Accumulated Amortization and Impairment:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2018	\$503,527	\$2,548,207	\$2,306,558	\$5,358,292
Amortization	247,348	449,801	1,086,882	1,784,031
Disposals	(414,676)	(179,418)	(987,841)	(1,581,935)
Exchange effect	1,410	19,468	-	20,878
As of December 31, 2018	\$337,609	\$2,838,058	\$2,405,599	\$5,581,266
Net carrying amount:				
As of December 31, 2018	\$350,662	\$1,751,078	\$784,419	\$2,886,159

The amortization amounts of intangible assets are as follows:

	For the years ended December 31,	
	2019	2018
Operating costs	\$664,315	\$657,958
Operating expenses	\$1,159,963	\$1,126,073

(10) Short-Term Loans

	As of December 31,	
	2019	2018
Unsecured bank loans	\$1,355,850	\$1,384,650
Interest rates applied	For the years ended December 31,	
	2019	2018
	1.96%~2.89%	1.56%~2.85%

The Company's unused short-term lines of credit amounted to NT\$33,063 million and NT\$34,578 million as of December 31, 2019 and 2018, respectively.

(11) Bonds Payable

	As of December 31,	
	2019	2018
Unsecured domestic bonds payable	\$21,200,000	\$23,700,000
Unsecured convertible bonds payable	17,729,293	18,196,332
Less: Discounts on bonds payable	(147,877)	(518,150)
Total	38,781,416	41,378,182
Less: Current portion	(20,093,825)	(2,499,235)
Net	\$18,687,591	\$38,878,947

a. The Company issued domestic unsecured corporate bonds. The terms and conditions of the bonds were as follows:

Term	Issuance date	Issued amount	Coupon rate	Repayment
Seven-year	In early June 2012	NT\$2,500 million	1.63%	Interest was paid annually and the principal was fully repaid in June 2019.
Five-year	In mid-March 2013	NT\$7,500 million	1.35%	Interest was paid annually and the principal was fully repaid in March 2018.
Seven-year	In mid-March 2013	NT\$2,500 million	1.50%	Interest will be paid annually and the principal will be repayable in March 2020 upon maturity.
Seven-year	In mid-June 2014	NT\$2,000 million	1.70%	Interest will be paid annually and the principal will be repayable in June 2021 upon maturity.
Ten-year	In mid-June 2014	NT\$3,000 million	1.95%	Interest will be paid annually and the principal will be repayable in June 2024 upon maturity.
Five-year	In late March 2017	NT\$6,200 million	1.15%	Interest will be paid annually and the principal will be repayable in March 2022 upon maturity.
Seven-year	In late March 2017	NT\$2,100 million	1.43%	Interest will be paid annually and the principal will be repayable in March 2024 upon maturity.
Five-year	In early October 2017	NT\$2,000 million	0.94%	Interest will be paid annually and the principal will be repayable in October 2022 upon maturity.
Seven-year	In early October 2017	NT\$3,400 million	1.13%	Interest will be paid annually and the principal will be repayable in October 2024 upon maturity.

b. On May 18, 2015, the Company issued SGX-ST listed currency linked zero coupon convertible bonds. The terms and conditions of the bonds were as follows:

- i. Issue Amount: US\$600 million
- ii. Period: May 18, 2015 ~ May 18, 2020 (Maturity date)
- iii. Redemption:
 - (i) The Company may redeem the bonds, in whole or in part, after 3 years of the issuance and prior to the maturity date, at the principal amount of the bonds with an interest calculated at the rate of -0.25% per annum (the Early Redemption Amount) if the closing price of the ordinary shares of the Company on the TWSE, for a period of 20 out of 30 consecutive trading days, the last of which occurs not more than 5 days prior to the date upon which notice of such redemption is published, is at least 125% of the conversion price. The Early Redemption Price will be converted into NTD based on the Fixed Exchange Rate (NTD 30.708=USD 1.00), and this fixed NTD amount will be converted using the prevailing rate at the time of redemption for payment in USD.
 - (ii) The Company may redeem the bonds, in whole, but not in part, at the Early Redemption Amount if at least 90% in principal amount of the bonds has already been converted, redeemed or repurchased and cancelled.
 - (iii) The Company may redeem all, but not part, of the bonds, at the Early Redemption Amount at any time, in the event of certain changes in the R.O.C.'s tax rules which would require the Company to gross up for payments of principal, or to gross up for payments of interest or premium.
 - (iv) All or any portion of the bonds will be redeemable at Early Redemption Amount at the option of bondholders on May 18, 2018 at 99.25% of the principal amount.
 - (v) Bondholders have the right to require the Company to redeem all of the bonds at the Early Redemption Amount if the Company's ordinary shares cease to be listed on the Taiwan Stock Exchange.
 - (vi) In the event that a change of control as defined in the indenture of the bonds occurs to the Company, the bondholders shall have the right to require the Company to redeem the bonds, in whole but not in part, at the Early Redemption Amount.
- iv. Terms of Conversion:
 - (i) Underlying Securities: Ordinary shares of the Company
 - (ii) Conversion Period: The bonds are convertible at any time on or after June 28, 2015 and prior to May 8, 2020, into the Company ordinary shares; provided, however, that if the exercise date falls within 5 business days from the beginning of, and during, any closed period, the right of the converting holder of the bonds to vote with respect to the shares it receives will be subject to certain restrictions.
 - (iii) Conversion Price and Adjustment: The conversion price was originally NT\$17.50 per share. The conversion price will be subject to adjustments upon the occurrence of certain events set out in the indenture. The conversion price was NT\$14.2179 per share on December 31, 2019.

- v. Redemption on the Maturity Date: On the maturity date, the Company will redeem the bonds at 98.76% of the principal amount unless, prior to such date:
- (i) The Company shall have redeemed the bonds at the option of the Company, or the bonds shall have been redeemed at option of the bondholder;
 - (ii) The bondholders shall have exercised the conversion right before maturity; or
 - (iii) The bonds shall have been redeemed or repurchased by the Company and cancelled.

In accordance with IAS 32 "Financial Instruments Presentation", the value of the conversion right of the convertible bonds was determined at issuance and recognized in additional paid-in capital-stock options amounting to NT\$1,894 million, after reduction of issuance costs amounting to NT\$9 million. The effective interest rate on the liability component of the convertible bonds was determined to be 2.03%.

During the year ended December 31, 2019, certain bondholders had converted the outstanding principal amount of the convertible bonds totaling US\$15 million into 33 million shares, of which capital increase share registration procedures have not been completed and were classified as capital collected in advance.

(12) Long-Term Loans

Details of long-term loans as of December 31, 2019 and 2018 are as follows:

Lenders	As of December 31,		Redemption
	2019	2018	
Unsecured Long-Term Loan from Bank of Taiwan	\$-	\$1,000,000	Repayable quarterly from March 23, 2019 to December 23, 2021 with monthly interest payments.
Unsecured Revolving Loan from Mega International Commercial Bank (Note A)	2,000,000	-	Repayable semi-annually from October 16, 2020 to April 16, 2022 with monthly interest payments.
Unsecured Revolving Loan from Chang Hwa Commercial Bank (Note B)	2,400,000	-	Repayable quarterly from January 26, 2021 to October 26, 2022 with monthly interest payments.
Subtotal	4,400,000	1,000,000	
Less: Current portion	(500,000)	(333,360)	
Total	\$3,900,000	\$666,640	
Interest rates applied	For the years ended December 31,		
	2019	2018	
	0.55%~1.22%	0.99%~1.22%	

Note A: The Company entered into a 5-year loan agreement with Mega International Commercial Bank, effective from October 17, 2016. The agreement offered the Company a revolving line of credit of NT\$3 billion. This line of credit will be reduced starting from the end of the two years and six months after the first use and every six months thereafter, with a total of six adjustments. The expiration date of the agreement is April 16, 2022. As of December 31, 2019 and 2018, the unused line of credit were NT\$0.5 billion, NT\$3 billion, respectively.

Note B: The Company entered into a 5-year loan agreement with Chang Hwa Commercial Bank, effective from November 2, 2016. The agreement offered the Company a revolving line of credit of NT\$3 billion. This line of credit will be reduced starting from the end of the third year after the first use and every three months thereafter, with a total of nine adjustments. The expiration date of the agreement is October 27, 2022. As of December 31, 2019 and 2018, the unused line of credit were NT\$0.6 billion and NT\$3 billion, respectively.

(13) Post-Employment Benefits

a. Defined contribution plan

The employee pension plan under the Labor Pension Act of the R.O.C. is a defined contribution plan. Pursuant to the plan, the Company makes monthly contributions of 6% based on each individual employee's salary or wage to employees' pension accounts. Pension benefits for employees of the Singapore branch are provided in accordance with the local regulations. Total pension expenses of NT\$893 million and NT\$883 million are contributed by the Company for the years ended December 31, 2019 and 2018, respectively.

b. Defined benefit plan

- i. The employee pension plan mandated by the Labor Standards Act of the R.O.C. is a defined benefit plan. The pension benefits are disbursed based on the units of service years and average monthly salary prior to retirement according to the Labor Standards Act. Two units per year are awarded for the first 15 years of services while one unit per year is awarded after the completion of the 15th year and the total units will not exceed 45 units. The Company contributes an amount equivalent to 2% of the employees' total salaries and wages on a monthly basis to the pension fund deposited with the Bank of Taiwan under the name of a pension fund supervisory committee. The pension fund is managed by the government's designated authorities and therefore is not included in the Company's parent company only financial statements. For the years ended December 31, 2019 and 2018, total pension expenses of NT\$59 million and NT\$69 million, respectively, were recognized by the Company.

ii. Movements in present value of defined benefit obligation and fair value of plan assets are as follows:

	For the years ended December 31,	
	2019	2018
Movements in present value of defined benefit obligation during the year:		
Defined benefit obligation at beginning of year	\$(5,620,509)	\$(5,671,058)
Items recognized as profit or loss:		
Service cost	(21,043)	(24,477)
Interest cost	(51,146)	(61,247)
Subtotal	(72,189)	(85,724)
Remeasurements recognized in other comprehensive income (loss):		
Arising from changes in financial assumptions	(114,976)	(91,350)
Experience adjustments	180,095	(5,907)
Subtotal	65,119	(97,257)
Benefits paid	216,510	233,530
Defined benefit obligation at end of year	\$(5,411,069)	\$(5,620,509)
Movements in fair value of plan assets during the year:		
Beginning balance of fair value of plan assets	\$1,453,335	\$1,532,539
Items recognized as profit or loss:		
Interest income on plan assets	13,225	16,552
Contribution by employer	94,362	95,577
Benefits paid	(216,510)	(233,530)
Remeasurements recognized in other comprehensive income (loss):		
Return on plan assets, excluding amounts included in interest income	41,284	42,197
Fair value of plan assets at end of year	\$1,385,696	\$1,453,335

The actual returns on plan assets of the Company for the years ended December 31, 2019 and 2018 were NT\$55 million and NT\$59 million, respectively.

iii. The defined benefit plan recognized on the parent company only balance sheets are as follows:

	As of December 31,	
	2019	2018
Present value of the defined benefit obligation	\$(5,411,069)	\$(5,620,509)
Fair value of plan assets	1,385,696	1,453,335
Funded status	(4,025,373)	(4,167,174)
Net defined benefit liabilities, noncurrent recognized on the parent company only balance sheets	\$(4,025,373)	\$(4,167,174)

iv. The major categories of plan assets as a percentage of the fair value of the total plan assets are as follows:

	As of December 31,	
	2019	2018
Cash	21%	17%
Equity instruments	45%	51%
Debt instruments	24%	24%
Others	10%	8%

Employee pension fund is deposited under a trust administered by the Bank of Taiwan. The overall expected rate of return on assets is determined based on historical trend and actuaries' expectations on the assets' returns in the market over the obligation period. Furthermore, the utilization of the fund is determined by the labor pension fund supervisory committee, which also guarantees the minimum earnings to be no less than the earnings attainable from interest rates offered by local banks for two-year time deposits.

v. The principal underlying actuarial assumptions are as follows:

	As of December 31,	
	2019	2018
Discount rate	0.67%	0.91%
Rate of future salary increase	3.50%	3.50%

(14) Deferred Government Grants

	As of December 31,	
	2019	2018
Beginning balance	\$204,391	\$113,779
Arising during the period	51,862	123,367
Recorded in profit or loss:		
Other operating income	(58,763)	(35,429)
Exchange effect	(3,947)	2,674
Ending balance	\$193,543	\$204,391
Current	\$55,063	\$49,878
Noncurrent	138,480	154,513
Total	\$193,543	\$204,391

The significant government grants related to equipment acquisitions received by the Company are amortized as income over the useful lives of related equipment, and recorded in the net other operating income and expenses.

(15) Refund Liabilities (classified under other current liabilities)

	As of December 31,	
	2019	2018
Refund liabilities	\$1,684,617	\$1,164,813

(16) Equity

a. Capital stock:

- i. The Company had 26,000 million common shares authorized to be issued as of December 31, 2019 and 2018, of which 11,724 million shares, and 12,424 million shares were issued as of December 31, 2019 and 2018, respectively, each at a par value of NT\$10.
- ii. The Company had 138 million and 143 million ADSs, which were traded on the NYSE as of December 31, 2019 and 2018, respectively. The total number of common shares of the Company represented by all issued ADSs were 692 million shares and 717 million shares as of December 31, 2019 and 2018, respectively. One ADS represents five common shares.

vi. Expected future benefit payments are as follows:

Year	As of December 31, 2019
2020	\$230,468
2021	252,969
2022	298,483
2023	328,958
2024	377,022
2025 and thereafter	4,263,427
Total	\$5,751,327

The Company expects to make pension fund contribution of NT\$93 million in 2020. The weighted-average durations of the defined benefit obligation are 9 years and 10 years as of December 31, 2019 and 2018, respectively.

vii. Sensitivity analysis:

	As of December 31, 2019	
	Discount rate	Rate of future salary increase
	0.5%	0.5%
	increase	decrease
	decrease	increase
Decrease (increase) in defined benefit obligation	\$235,666	\$(251,131)
	\$215,694	\$205,388

	As of December 31, 2018	
	Discount rate	Rate of future salary increase
	0.5%	0.5%
	increase	decrease
	decrease	increase
Decrease (increase) in defined benefit obligation	\$262,909	\$(281,037)
	\$(244,120)	\$231,751

The sensitivity analyses above have been determined based on a method that extrapolates the impact on the net defined benefit obligation as a result of reasonable changes in key assumptions occurring at the end of the reporting period.

iii. On June 28, 2019, the Company cancelled 400 million shares of treasury stock, which were repurchased during the period from May 13 to June 13, 2016 for the purpose of transferring to employees, and repurchased during the period from April 26 to June 13, 2019 for the purpose of maintaining the Company's credit and its stockholders' rights and interests.

iv. On March 11, 2019, the Company cancelled 300 million shares of treasury stock, which were repurchased during the period from November 7, 2018 to January 4, 2019 for the purpose of maintaining the Company's credit and its stockholders' rights and interests.

v. On August 27, 2018, the Company cancelled 200 million shares of treasury stock, which were repurchased during the period from March 12 to May 4, 2018 for the purpose of maintaining the Company's credit and its stockholders' rights and interests.

vi. Please refer to Note 6(11) for the Company's conversion of overseas unsecured convertible bonds into ordinary shares of the Company for the year ended December 31, 2019.

b. Treasury stock:

i. The Company carried out a treasury stock program and repurchased its shares from the centralized securities exchange market. The purpose for the repurchase and changes in treasury stock during the years ended December 31, 2019 and 2018 were as follows:

<u>For the year ended December 31, 2019</u>			
(In thousands of shares)			
Purpose	As of January 1, 2019	As of December 31, 2019	
		Increase	Decrease
For transfer to employees	200,000	-	200,000
To maintain the Company's credit and its stockholders' rights and interests	280,000	220,000	500,000
	<u>480,000</u>	<u>220,000</u>	<u>700,000</u>
			<u>-</u>

For the year ended December 31, 2018
(In thousands of shares)

Purpose	As of January 1, 2018	Increase	Decrease	As of December 31, 2018
For transfer to employees	400,000	-	200,000	200,000
To maintain the Company's credit and its stockholders' rights and interests	-	480,000	200,000	280,000
	<u>400,000</u>	<u>480,000</u>	<u>400,000</u>	<u>480,000</u>

ii. According to the Securities and Exchange Law of the R.O.C., the total shares of treasury stock shall not exceed 10% of the Company's issued stock, and the total purchase amount shall not exceed the sum of the retained earnings, additional paid-in capital-premiums and realized additional paid-in capital. As such, the number of shares of treasury stock that the Company held as of December 31, 2019 and 2018, did not exceed the limit.

iii. In compliance with Securities and Exchange Law of the R.O.C., treasury stock should not be pledged, nor should it be entitled to voting rights or receiving dividends. Stock held by subsidiaries is treated as treasury stock. These subsidiaries have the same rights as other stockholders except for subscription to new stock issuance and voting rights.

iv. The Company's subsidiary, FORTUNE VENTURE CAPITAL CORP., held shares of the Company's stock through acquiring shares of UNITED SILICON INC. in 1997, and these shares were converted to the Company's stock in 2000 as a result of the Company's 5 in 1 merger. As of December 31, 2019 and 2018, the Company's subsidiary, FORTUNE VENTURE CAPITAL CORP., held 16 million shares of the Company's stock. The closing price on December 31, 2019 and 2018, were NT\$16.45 and NT\$11.25, respectively.

c. Retained earnings and dividend policies:

According to the Company's Articles of Incorporation, current year's earnings, if any, shall be distributed in the following order:

- Payment of taxes.
- Making up loss for preceding years.
- Setting aside 10% for legal reserve, except for when accumulated legal reserve has reached the Company's paid-in capital.

iv. Appropriating or reversing special reserve by government officials or other regulations.

v. The remaining, plus the previous year's unappropriated earnings, shall be distributed according to the distribution plan proposed by the Board of Directors according to the dividend policy and submitted to the stockholders' meeting for approval.

Because the Company conducts business in a capital intensive industry and continues to operate in its growth phase, the dividend policy of the Company shall be determined pursuant to factors such as the investment environment, its funding requirements, domestic and overseas competitive landscape and its capital expenditure forecast, as well as stockholders' interest, balancing dividends and the Company's long-term financial planning. The Board of Directors shall propose the distribution plan and submit it to the stockholders' meeting every year. The distribution of stockholders' dividend shall be allocated as cash dividend in the range of 20% to 100%, and stock dividend in the range of 0% to 80%.

According to the regulations of Taiwan FSC, the Company is required to appropriate a special reserve in the amount equal to the sum of debit elements under equity, such as unrealized loss on financial instruments and debit balance of exchange differences on translation of foreign operations, at every year-end. Such special reserve is prohibited from distribution. However, if any of the debit elements is reversed, the special reserve in the amount equal to the reversal may be released for earnings distribution or offsetting accumulated deficits.

The distribution of earnings for 2018 was approved by the stockholders' meeting held on June 12, 2019, while the distribution of earnings for 2019 was approved by the Board of Directors' meeting on February 26, 2020. The details of distribution are as follows:

	Appropriation of earnings (in thousand NT dollars)		Cash dividend per share (NT dollars)	
	2019	2018	2019	2018
Legal reserve	\$614,784	\$707,299		
Special reserve	(3,491,626)	14,513,940		
Cash dividends	9,765,155	6,916,105	\$0.75	\$0.58

The aforementioned 2018 distribution approved by stockholders' meeting was consistent with the resolutions of meeting of Board of Directors held on March 6, 2019.

The cash dividend per share for 2018 was adjusted to NT\$0.58989396 per share according to the resolution of the Board of Directors' meeting on June 19, 2019. The adjustment was made for the decrease in outstanding common shares due to the share repurchase program.

The appropriation of 2019 unappropriated retained earnings has not yet been approved by the stockholders' meeting as of the reporting date. Information relevant to the Board of Directors' meeting recommendations and stockholders' meeting approval can be obtained from the "Market Observation Post System" on the website of the TWSE.

Please refer to Note 6(19) for information on the employees and directors' compensation.

(17) Share-Based Payment

In order to attract, retain talents and reward the employees for their productivity and loyalty, the Company carried out a compensation plan to offer 200 million shares of treasury stock to employees in August 2018. The compensation cost for the shared-based payment was measured at fair value, having recognized in expense the difference between the closing quoted market price of the shares at the grant date and the cash received from employees. The closing quoted market price of the Company's shares on the grant date was NT\$16.95 per share. For the stocks vested on the date of grant, the Company recognized the entire compensation cost on the grant date, whereas for the stocks with requisite service conditions to vest at the end of one or two-years from the date of grant, the Company recognizes the compensation cost on a straight-line basis over the period in which the services conditions are fulfilled, together with a corresponding increase in equity. As such, for the years ended December 31, 2019 and 2018, total compensation cost of NT\$366 million and NT\$696 million, respectively, were recognized by the Company.

(18) Operating Revenues

a. Disaggregation of revenue

By geography

	For the year ended December 31, 2019						Total	
	Taiwan	Singapore	China (includes Hong Kong)	Japan	USA	Europe		Others
Revenue from contracts with customers	\$43,554,269	\$6,918,354	\$10,666,851	\$3,936,180	\$47,749,235	\$2,705,710	\$8,091,837	\$123,622,436
The timing of revenue recognition:								
At a point in time	\$43,553,705	\$6,918,354	\$10,666,732	\$3,863,144	\$47,735,503	\$1,944,183	\$8,090,159	\$122,771,780
Over time	564	-	119	73,036	13,732	761,527	1,678	850,656
Total	\$43,554,269	\$6,918,354	\$10,666,851	\$3,936,180	\$47,749,235	\$2,705,710	\$8,091,837	\$123,622,436

ii. Contract liabilities

	As of		
	December 31, 2019	December 31, 2018	January 1, 2018
Sales of goods and services	\$1,029,104	\$447,702	\$3,614,908
Current	\$547,024	\$447,702	\$3,614,908
Noncurrent	482,080	-	-
Total	\$1,029,104	\$447,702	\$3,614,908

The movement of contract liabilities is mainly caused by the timing difference of the satisfaction of a performance of obligation and the consideration received from customers.

The Company recognized NT\$249 million and NT\$3,429 million, respectively, in revenues from the contract liabilities balance at the beginning of the period as performance obligations were satisfied for the years ended December 31, 2019 and 2018.

c. The Company's transaction price allocated to unsatisfied performance obligations amounted to NT\$2,987 million and NT\$3,148 million as of December 31, 2019 and 2018, respectively. The Company will recognize revenue as the Company satisfies its performance obligations over time that aligns with progress toward completion of a contract in the future. As of the report date, the progress cannot be reliably estimated primarily due to the suspension as disclosed in Note 9(5). The estimate of the transaction price does not include any estimated amounts of variable consideration that are constrained.

d. Asset recognized from costs to fulfill a contract with customer

As of December 31, 2019 and 2018, the Company recognized costs to fulfill engineering service contracts eligible for capitalization as other current assets which amounted to NT\$425 million and NT\$464 million, respectively. Subsequently, the Company will expense from costs to fulfill a contract to operating costs when the related obligations are satisfied.

For the year ended December 31, 2018

	China (includes)						Total	
	Taiwan	Singapore	Hong Kong)	Japan	USA	Europe		Others
Revenue from contracts with customers	\$43,787,610	\$5,936,074	\$10,665,969	\$4,218,796	\$57,168,649	\$6,490,550	\$4,566,954	\$132,834,602
The timing of revenue recognition:								
At a point in time	\$43,700,761	\$5,936,074	\$7,389,558	\$4,214,543	\$57,127,024	\$5,513,337	\$4,566,954	\$128,448,251
Over time	86,849	-	3,276,411	4,253	41,625	977,213	-	4,386,351
Total	\$43,787,610	\$5,936,074	\$10,665,969	\$4,218,796	\$57,168,649	\$6,490,550	\$4,566,954	\$132,834,602

The geographic breakdown of the Company's operating revenues was based on the location of the Company's customers.

By Product

	For the years ended December 31	
	2019	2018
Wafer	\$117,890,799	\$123,642,545
Others	5,731,637	9,192,057
Total	\$123,622,436	\$132,834,602

b. Contract balances

i. Contract assets, current

	As of	
	December 31, 2019	January 1, 2018
Sales of goods and services	\$454,323	\$436,638
Less: Loss allowance	(348,033)	(355,451)
Net	\$106,290	\$81,187

The loss allowance was assessed by the Company primarily at an amount equal to lifetime expected credit losses. The loss allowance was mainly resulted from the indictment filed by the United States Department of Justice (DOJ) against the Company related to the joint technology development agreement. Please refer to Note 9(5).

(19) Operating Costs and Expenses

a. The Company's employee benefit, depreciation and amortization expenses are summarized as follows:

	For the years ended December 31,					
	2019		2018			
	Operating costs	Operating expenses	Operating costs	Operating expenses		
Employee benefit expenses				Total		
Salaries	\$13,959,517	\$6,010,762	\$19,970,279	\$6,272,280	\$20,891,150	
Labor and health insurance	813,373	309,732	1,123,105	822,946	311,621	1,134,567
Pension	703,096	248,719	951,815	708,919	243,354	952,273
Remuneration to directors	-	17,339	17,339	-	13,384	13,384
Other employee benefit expenses	227,893	81,520	309,413	219,091	71,371	290,462
Depreciation	30,104,380	1,363,390	31,467,770	34,232,154	2,283,766	36,515,920
Amortization	682,686	1,189,389	1,872,075	699,882	1,194,589	1,894,471

According to the Company's Articles of Incorporation, the employees and directors' compensation shall be distributed in the following order:

The Company shall allocate no less than 5% of profit as employees' compensation and no more than 0.1% of profit as directors' compensation for each profitable fiscal year after offsetting any cumulative losses. The aforementioned employees' compensation will be distributed in shares or cash. The employees of the Company's subsidiaries who fulfill specific requirements stipulated by the Board of Directors may be granted such compensation. Directors may only receive compensation in cash. The Company may, by a resolution adopted by a majority vote at a meeting of the Board of Directors attended by two-thirds of the total number of directors, distribute the aforementioned employees and directors' compensation and report to the stockholders' meeting for such distribution.

The Company recognizes the employees and directors' compensation in the profit or loss during the periods when earned for the years ended December 31, 2019 and 2018. The Board of Directors estimates the amount by taking into consideration the Articles of Incorporation, government regulations and industry averages. If the Board of Directors resolves to distribute employee compensation through stock, the number of stock distributed is calculated based on total employee compensation divided by the closing price of the day before the Board of Directors meeting. If the Board of Directors subsequently modifies the estimates significantly, the Company will recognize the change as an adjustment in the profit or loss in the subsequent period.

The distributions of employees and directors' compensation for 2018 were reported to the stockholders' meeting on June 12, 2019, while the distributions of employees and directors' compensation for 2019 were approved through the Board of Directors meeting on February 26, 2020. The details of distribution are as follows:

	2019	2018
Employees' compensation – Cash	\$1,132,952	\$1,400,835
Directors' compensation	10,259	7,624

The aforementioned employees and directors' compensation for 2018 reported during the stockholders' meeting were consistent with the resolutions of the Board of Directors meeting held on March 6, 2019.

Information relevant to the aforementioned employees and directors' compensation can be obtained from the "Market Observation Post System" on the website of the TWSE.

b. The number of the Company's employees were 14,589 and 15,558, both including 6 non-employee directors as of December 31, 2019 and 2018.

c. The Company's average employee benefit expenses for the years ended December 31, 2019 and 2018 were NT\$2 million and NT\$1 million, respectively. The Company's average salary expenses for the years ended December 31, 2019 and 2018 were both NT\$1 million. The Company's average salary expense adjustment for the year ended December 31, 2019 increased by 2%.

(20) Net Other Operating Income and Expenses

	For the years ended December 31,	
	2019	2018
Net rental loss from property	\$(122,277)	\$(97,953)
Gain on disposal of property, plant and equipment	137,308	168,849
Government grants	77,832	142,732
Others	98,245	(73,078)
Total	\$191,108	\$140,550

(21) Non-Operating Income and Expenses

	For the years ended December 31,	
	2019	2018
a. Other gains and losses		
Gain (loss) on valuation of financial assets and liabilities at fair value through profit or loss	\$964,614	\$(896,806)
Others	52,564	124,702
Total	\$1,017,178	\$(772,104)

b. Finance costs

	For the years ended	
	December 31, 2019	2018
Interest expenses		
Bonds payable	\$672,902	\$710,663
Bank loans	62,435	52,305
Lease liabilities (Note)	82,821	-
Others	155	112
Financial expenses	43,288	61,874
Total	\$861,601	\$824,954

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

(22) Components of Other Comprehensive Income (Loss)

	For the year ended December 31, 2019			
	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss) before tax	Other comprehensive income (loss) net of tax
Items that may be reclassified subsequently to profit or loss:				
Exchange differences on translation of foreign operations	\$ (1,045,504)	\$-	\$ (1,045,504)	\$-
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss	(2,204,824)	-	(2,204,824)	8,252
Total other comprehensive income (loss)	\$3,574,006	\$-	\$3,574,006	\$ (150,008)

	For the year ended December 31, 2018			
	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss) before tax	Other comprehensive income (loss) net of tax
Items that will not be reclassified subsequently to profit or loss:				
Remeasurements of defined benefit pension plans	\$ (55,060)	\$-	\$ (55,060)	\$ (22,413)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	1,458,848	-	1,458,848	44,526
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	(2,572)	-	(2,572)	514
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which will not be reclassified subsequently to profit or loss	(479,969)	-	(479,969)	34,697

Items that will not be reclassified subsequently to profit or loss:

Remeasurements of defined benefit pension plans

Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income

Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which will not be reclassified subsequently to profit or loss

ii. Income tax related to components of other comprehensive income (loss)

(i) Items that will not be reclassified subsequently to profit or loss:

	For the years ended	
	2019	2018
December 31,		
Remeasurements of defined benefit pension plans	\$(21,281)	\$11,012
Unrealized gains or losses from equity instruments measured at fair value through other comprehensive income	(136,979)	31,998
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	-	514
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which will not be reclassified subsequently to profit or loss	-	39,742
Deferred income tax related to changes in tax rates	-	29,118
Income tax related to items that will not be reclassified subsequently to profit or loss	\$(158,260)	\$112,384

(ii) Items that may be reclassified subsequently to profit or loss:

	For the years ended	
	2019	2018
December 31,		
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss	\$8,252	\$(18,555)
Deferred income tax related to changes in tax rates	-	6,560
Income tax related to items that may be reclassified subsequently	\$8,252	\$(11,995)

For the year ended December 31, 2018

	Other		Other comprehensive income (loss), net of tax
	Reclassification adjustments during the period	comprehensive income (loss), before tax effect	
Items that may be reclassified subsequently to profit or loss:			
Exchange differences on translation of foreign operations	\$-	\$1,094,614	\$1,094,614
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss	(1,062,412)	(11,995)	(1,074,407)
Total other comprehensive income (loss)	\$953,449	\$953,449	\$1,053,838

(23) Income Tax

a. The major components of income tax expense for the years ended December 31, 2019 and 2018 were as follows:

i. Income tax expense (benefit) recorded in profit or loss

	For the years ended	
	2019	2018
December 31,		
Current income tax expense (benefit):		
Current income tax charge	\$163,773	\$158,250
Adjustments in respect of current income tax of prior periods	(824,921)	(1,114,417)
Deferred income tax expense (benefit):		
Deferred income tax related to origination and reversal of temporary differences	463,869	1,397,173
Deferred income tax related to recognition and derecognition of tax losses and unused tax credits	(226,634)	(335,367)
Deferred income tax related to changes in tax rates	-	(831,081)
Adjustment of prior year's deferred income tax	118,384	(1,502)
Deferred income tax arising from write-down or reversal of write-down of deferred tax assets	(268,986)	(137,390)
Income tax benefit recorded in profit or loss	\$(574,515)	\$(864,334)

iii. Deferred income tax charged directly to equity

	For the years ended	
	December 31, 2019	2018
Reversal of temporary difference arising from initial recognition of the equity component of the compound financial instrument	\$(45)	\$-
Gains or losses on hedging instruments which will not be reclassified subsequently to profit or loss	(514)	-
Deferred income tax related to changes in tax rates	-	(56,759)
Total	<u>\$(559)</u>	<u>\$(56,759)</u>

b. A reconciliation between income tax expense and income before tax at the Company's applicable tax rate was as follows:

	For the years ended	
	December 31, 2019	2018
Income before tax	\$9,133,099	\$6,208,656
At statutory income tax rate	1,826,620	1,241,731
Adjustments in respect of current income tax of prior periods	(824,921)	(1,114,417)
Net changes in loss carry-forward and investment tax credits	(300,718)	(335,367)
Adjustment of deferred tax assets/liabilities for write-downs/reversals and different jurisdictional tax rates	(75,647)	(45,183)
Tax effect of non-taxable income and non-deductible expenses:		
Tax exempt income	(1,716,029)	(433,037)
Investment loss	406,047	455,603
Dividend income	(123,825)	(104,500)
Others	129,800	137,056
Deferred income tax related to changes in tax rates	13,254	35,551
Taxes withheld in other jurisdictions	90,904	129,310
Others	\$(574,515)	\$(864,334)
Income tax benefit recorded in profit or loss		

c. Significant components of deferred income tax assets and liabilities were as follows:

	As of December 31,	
	2019	2018
Deferred income tax assets		
Depreciation	\$1,111,077	\$1,396,350
Loss carry-forward	499,539	499,539
Pension	797,432	825,792
Refund liabilities	339,185	232,854
Allowance for inventory valuation losses	570,450	385,289
Investment loss	117,515	243,270
Unrealized profit on intercompany sales	1,568,645	1,703,942
Investment tax credits	475,952	336,869
Others	139,084	70,534
Total deferred income tax assets	<u>5,618,879</u>	<u>5,694,439</u>

Deferred income tax liabilities		
Unrealized exchange gain	(565,175)	(535,595)
Depreciation	(453,176)	(329,584)
Investment gain	(530,190)	(460,767)
Convertible bond option	(69,485)	(139,693)
Others	(11,792)	(7,599)
Total deferred income tax liabilities	<u>(1,629,818)</u>	<u>(1,473,238)</u>
Net deferred income tax assets	<u>\$3,989,061</u>	<u>\$4,221,201</u>

d. Movement of deferred tax

	For the years ended	
	December 31, 2019	2018
Balance as of January 1	\$4,221,201	\$4,277,628
Impact of retroactive applications	93	(2,701)
Adjusted balance as of January 1	4,221,294	4,274,927
Amounts recognized in profit or loss during the period	(86,633)	(91,833)
Amounts recognized in other comprehensive income	(150,008)	100,389
Amounts recognized in equity	(559)	(56,759)
Exchange adjustments	4,967	(5,523)
Balance as of December 31	<u>\$3,989,061</u>	<u>\$4,221,201</u>

b. Earnings per share-diluted

	For the years ended December 31,	
	2019	2018
Net income	\$9,707,614	\$7,072,990
Effect of dilution		
Unsecured convertible bonds	289,121	283,349
Income attributable to the Company's stockholders	\$9,996,735	\$7,356,339
Weighted-average number of common stocks for basic earnings per share (thousand shares)	11,785,108	12,103,880
Effect of dilution		
Employees' compensation	90,047	137,511
Unsecured convertible bonds	1,295,729	1,243,599
Weighted-average number of common stocks after dilution (thousand shares)	13,170,884	13,484,990
Earnings per share- diluted (NTD)	\$0.76	\$0.55

e. The Company is subject to taxation in Taiwan and other foreign jurisdictions. The Company's income tax returns for all the fiscal years up to 2016 have been assessed and approved by the R.O.C. Tax Authority. As of December 31, 2019, income tax returns of Singapore branch has been completed the examination by the tax authorities through 2014. There is an uncertain tax position that the outcome of the income tax returns of the Company may not be accepted by the tax authorities of the respective countries of operations. For the recognition and measurement of deferred income tax and current income tax which involved significant accounting judgments, estimates and assumptions, please refer to Note 5(5).

f. The Company was granted income tax exemption for several periods with respect to income derived from the expansion of operations. The income tax exemption will expire on December 31, 2020.

g. As of December 31, 2019 and 2018, deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$0 and NT\$1,345 million, respectively.

h. As of December 31, 2019 and 2018, the taxable temporary differences of unrecognized deferred tax liabilities associated with investments in subsidiaries amounted to NT\$11,389 million and NT\$11,036 million, respectively.

i. According to the amendments to the R.O.C. Income Tax Act, effective from 2018, the corporate income tax rate is raised from 17% to 20%, and the 10% undistributed earnings tax is lowered to 5%.

(24) Earnings Per Share

a. Earnings per share-basic

	For the years ended December 31,	
	2019	2018
Net income	\$9,707,614	\$7,072,990
Weighted-average number of ordinary shares for basic earnings per share (thousand shares)	11,785,108	12,103,880
Earnings per share-basic (NTD)	\$0.82	\$0.58

(25) Reconciliation of Liabilities Arising from Financing Activities

For the year ended December 31, 2019:

Items	As of		Non-cash changes	
	January 1, 2019	December 31, 2019	Cash Flows	Others (Note A)
Short-term loans	\$1,384,650	\$1,355,850	\$22,860	\$-
Long-term loans (current portion included)	1,000,000	4,400,000	3,580,180	(180,180)
Bonds payable (current portion included)	41,378,182	38,781,416	(2,500,000)	(96,766)
Guarantee deposits (current portion included)	622,033	194,711	190,848	(619,347)
Lease liabilities	3,578,071	3,237,102	(462,642)	4,408
Other financial liabilities-noncurrent	20,410,355	20,093,441	-	(698,127)

(2) Significant Related Party Transactions

a. Operating transactions

	For the years ended	
	December 31,	2018
<u>Operating revenues</u>		
UMC-USA	\$47,736,335	\$57,107,585
Subsidiaries	5,182,626	5,667,271
Associates	830,682	871,594
Others	40,049	27,881
Total	\$53,789,692	\$63,674,331

	As of December 31,	
	2019	2018
<u>Accounts receivable, net</u>		
UMC-USA	\$5,937,706	\$7,312,272
Subsidiaries	654,583	956,850
Associates	93,287	85,878
Others	9,540	4,266
Total	6,695,116	8,359,266
Less: Loss allowance	(11,180)	-
Net	\$6,683,936	\$8,359,266

The sales price to the above related parties was determined through mutual agreement in reference to market conditions. The collection period for domestic sales to related parties were month-end 30-60 days, while the collection period for overseas sales was net 30-60 days.

Refund liabilities (classified under other current liabilities)

	As of December 31,	
	2019	2018
UMC-USA	\$292,483	\$330,771
Subsidiaries	8,168	8,030
Associates	592	1,287
Others	48	71
Total	\$301,291	\$340,159

For the year ended December 31, 2018:

Items	Non-cash changes				
	As of January 1, 2018	Cash Flows	Foreign exchange	Others (Note A)	As of December 31, 2018
Short-term loans	\$7,308,350	\$(5,826,250)	\$(97,450)	\$-	\$1,384,650
Long-term loans (current portion included)	774,356	225,644	-	-	1,000,000
Bonds payable (current portion included)	48,517,631	(7,500,000)	-	360,551	41,378,182
Guarantee deposits (current portion included)	526,068	(42,948)	13,166	125,747	622,033
Other financial liabilities-noncurrent	20,486,119	-	(456,551)	380,787	20,410,355

Note A: Other non-cash changes mainly consisted of discount amortization measured by the effective interest method.

Note B: Please refer to Note 9(4) for more details on other financial liabilities-noncurrent.

7. RELATED PARTY TRANSACTIONS

The following is a summary of transactions between the Company and related parties during the financial reporting periods:

(1) Name and Relationship of Related Parties

Name of related parties	Relationship with the Company
UMC GROUP (USA) (UMC-USA)	Subsidiary
GREEN EARTH LIMITED	Subsidiary
UMC GROUP JAPAN	Subsidiary
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Subsidiary
WAVETEK MICROELECTRONICS CORPORATION	Subsidiary
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Subsidiary
UNITEDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Subsidiary
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary
TRIKNIGHT CAPITAL CORPORATION	Associate
FARADAY TECHNOLOGY CORP. and its Subsidiaries	Associate
SILICON INTEGRATED SYSTEMS CORP.	The Company's director
PHOTRONICS DNP MASK CORPORATION	Other related parties
UNITEDVISION SEMICONDUCTOR CO., LTD.	Other related parties
UPI SEMICONDUCTOR CORP.	Other related parties

b. Significant asset transactions

Disposal of property, plant and equipment

Item	For the year ended December 31, 2019		Disposal/Deferred gain
	Disposal amount		
Subsidiaries	\$287,092		\$45,422
For the year ended December 31, 2018			
Item	Disposal amount		Disposal/Deferred gain
Subsidiaries	\$271,433		\$12,991

Acquisition of intangible assets

Associates	Purchase price	
	For the years ended December 31,	
	2019	2018
	\$339,463	\$200,610

Acquisition of investments accounted for under the equity method

Please refer to Major Accounting Item 10.

c. Others

Mask expenditure

Others	For the years ended December 31,	
	2019	2018
	\$1,755,085	\$1,577,235

Other payables of mask expenditure

Others	As of December 31,	
	2019	2018
	\$448,302	\$492,563

d. Financing provided to others and Endorsement/Guarantee provided to others

Please refer to Attachment 1 and Attachment 2.

e. Key management personnel compensation

	For the years ended December 31,	
	2019	2018
Short-term employee benefits	\$159,990	\$285,617
Post-employment benefits	2,147	3,938
Termination benefits	-	-
Share-based payment	62,135	293,791
Total	\$224,272	\$583,346

8. ASSETS PLEDGED AS COLLATERAL

The following table lists assets of the Company pledged as collateral:

Items	Carrying Amount		Party to which asset(s) was pledged	Purpose of pledge
	2019	2018		
Refundable Deposits (Time deposit)	\$810,035	\$809,000	Customs	Customs duty guarantee
Refundable Deposits (Time deposit)	331,361	220,603	Science Park Administration	Collateral for land lease
Refundable Deposits (Time deposit)	19,510	19,579	Science Park Administration	Collateral for dormitory lease
Refundable Deposits (Time deposit)	41,785	37,084	Liquefied Natural Gas Business Division, CPC Corporation, Taiwan	Energy resources guarantee
Refundable Deposits (Time deposit)	1,000,000	1,000,000	Bank of China	Bank performance guarantee
Total	\$2,202,691	\$2,086,266		

holding that the two defendants must immediately cease to manufacture, sell, and import products that infringe the patent rights of the Company. The lawsuit filed by the Company is still on trial.

On November 1, 2018, the Department of Justice of the United States (“DOJ”) unsealed an indictment against the Company, FUJIAN JINHUA INTEGRATED CIRCUIT CO., LTD. (“JINHUA”), and three individuals, including one current employee and two former employees of the Company, alleging that the Company and others conspired to steal trade secrets of MICRON, and used that information to develop technology that was subsequently transferred to JINHUA. On the same day, the DOJ filed a civil complaint enjoining the aforementioned defendants from exporting to the United States any products containing DRAM manufactured by the Company or JINHUA and preventing the defendants from transferring the trade secrets to anyone else. The indictment and civil complaint are still on trial. The Company has appointed counsel to prepare answers against these charges. Besides, the Company has suspended the joint technology development activities with JINHUA. Given these litigations are still in the preliminary stages, the Company cannot assess the legal proceeding and probable outcome or impact.

(6) On March 14, 2019, a putative class action styled Meyer v. United Microelectronics Corporation and several executives, was filed under Securities Exchange Act of 1934 and Rule 10b-5 in the United States District Court for the Southern District of New York. The court appointed a lead plaintiff and approved lead plaintiff counsel on May 23, 2019. On September 27, 2019, the Company received the service of plaintiffs’ amended complaint and appointed counsel to prepare the relevant procedures. Given this litigation is still in the preliminary stages, the Company cannot assess the legal proceeding and probable outcome or impact.

(7) On July 1, 2016, INTERNATIONAL BUSINESS MACHINES CORPORATION (IBM) filed a complaint in the United States District Court for the Southern District of New York alleging that the Company failed to pay the technology license fees in accordance with the technology license agreement and claimed US\$10 million with interest of 12% per annum. The Company appealed a judgment issued on September 15, 2017 by the United States District Court of Southern District of New York for the subject matter. The United States Court of Appeals for the Second Circuit made a summary order on March 11, 2019, vacated part of the district court’s judgment and remanded the case. On March 27, 2019, the Company reached a USD 3.8 million settlement with IBM and mutually withdrew the litigation.

10. SIGNIFICANT DISASTER LOSS

None.

11. SIGNIFICANT SUBSEQUENT EVENTS

On February 11, 2020, the Board of Directors of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. resolved to participate in the capital injection of UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. in stages at a total investment amount of RMB 3.5 billion.

9. SIGNIFICANT CONTINGENCIES AND UNRECOGNIZED CONTRACT COMMITMENTS

(1) As of December 31, 2019, the Company entrusted financial institutes to open performance guarantee, mainly related to the litigations and customs tax guarantee, amounting to NT\$1.1 billion.

(2) The Company entered into several patent license agreements and development contracts of intellectual property for a total contract amount of approximately NT\$10.7 billion. As of December 31, 2019, the portion of royalties and development fees not yet recognized was NT\$1.3 billion.

(3) The Company entered into several construction contracts for the expansion of its operations. As of December 31, 2019, these construction contracts amounted to approximately NT\$1.2 billion and the portion of the contracts not yet recognized was approximately NT\$0.2 billion.

(4) The Board of Directors of the Company resolved in October 2014 to participate in a 3-way agreement with Xiamen Municipal People’s Government and FUJIAN ELECTRONIC & INFORMATION GROUP to form a company which will focus on 12” wafer foundry services. As of December 31, 2019, the Company and subsidiaries obtained R.O.C. government authority’s approval for the investment and invested RMB 8.3 billion in USXXM, representing ownership interest of 65.22%. Furthermore, based on the agreement, the Company recognized a financial liability in other noncurrent liabilities-others for the purchase from the other investors of their investments in USXXM at their original investment cost plus interest totally amounting to RMB 4.9 billion, beginning from the seventh year (2022) following the last installment payment made by the other investors.

(5) On August 31, 2017, the Taichung District Prosecutors Office indicted the Company based on the Trade Secret Act of R.O.C., alleging that employees of the Company misappropriated the trade secrets of MICRON TECHNOLOGY, INC. (“MICRON”). On December 5, 2017, MICRON filed a civil action with similar cause against the Company with the United States District Court, Northern District of California. MICRON claimed entitlement to the actual damages, treble damages and relevant fees and requested the court to issue an order that enjoins the Company from using its trade secrets in question. The case is currently in progress and the Company has appointed counsels to prepare answers against these charges.

On January 12, 2018, the Company filed three patent infringement actions with the Fuzhou Intermediate People’s Court against, among others, MICRON (XI’AN) CO., LTD. and MICRON (SHANGHAI) TRADING CO., LTD., requesting the court to order the defendants to stop manufacturing, processing, importing, selling, and committing to sell the products deploying the infringing patents in questions, and also to destroy all inventories and related molds and tools. On July 3, 2018, the Fuzhou Intermediate People’s Court granted preliminary injunction against the aforementioned two defendants,

12. OTHERS

 (1) Categories of financial instruments

	As of December 31,	
	2019	2018
Financial Assets		
Financial assets at fair value through profit or loss	\$5,114,228	\$4,301,066
Financial assets at fair value through other comprehensive income	14,388,597	11,131,667
Financial assets measured at amortized cost		
Cash and cash equivalents (excludes cash on hand)	66,530,103	59,337,436
Receivables	21,311,152	22,486,029
Refundable deposits	2,532,392	2,553,055
Other financial assets	804,933	1,708,786
Total	\$110,681,405	\$101,518,039
Financial Liabilities		
Financial liabilities measured at amortized cost		
Short-term loans	\$1,355,850	\$1,384,650
Payables	18,637,282	19,306,055
Guarantee deposits (current portion included)	194,711	622,033
Bonds payable (current portion included)	38,781,416	41,378,182
Long-term loans (current portion included)	4,400,000	1,000,000
Lease liabilities (Note)	3,237,102	-
Other financial liabilities	20,093,441	20,523,099
Total	\$86,699,802	\$84,214,019

Note: The Company adopted IFRS 16 on January 1, 2019. The Company elected not to restate prior periods in accordance with the transition provision in IFRS 16.

 (2) Financial risk management objectives and policies

The Company's risk management objectives are to manage the market risk, credit risk and liquidity risk related to its operating activities. The Company identifies, measures and manages the aforementioned risks based on policy and risk preference.

The Company has established appropriate policies, procedures and internal controls for financial risk management. Before entering into significant financial activities, approval process by the Board of Directors and Audit Committee must be carried out based on related protocols and internal control procedures. The Company complies with its financial risk management policies at all times.

 (3) Market risk

Market risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risks comprise currency risk, interest rate risk and other price risk (such as equity price risk).

Foreign currency risk

The Company's exposure to the risk of changes in foreign exchange rates relates primarily to the Company's operating activities (when revenue or expense is denominated in a different currency from the Company's functional currency) and the Company's net investments in foreign subsidiaries.

The Company applies natural hedges on the foreign currency risk arising from purchases or sales, and utilizes spot or forward exchange contracts to manage foreign currency risk and the net effect of the risks related to monetary financial assets and liabilities is minor. The notional amounts of the foreign currency contracts are the same as the amount of the hedged items. In principle, the Company does not carry out any forward exchange contracts for uncertain commitments. The Company designates certain forward currency contracts as cash flow hedges to hedge its exposure to foreign currency exchange risk associated with certain highly probable forecast transactions. On the basis of assessment, the Company expects that the value of forward currency exchange contracts and the value of the hedged transactions will change systematically in opposite directions for given changes in foreign exchange rates. Hedge ineffectiveness in these hedging relationships mainly arises from the counterparties' credit risk, impacting the fair value movements of the hedging instruments and hedged items. No other sources of ineffectiveness emerged from these hedging relationships. Furthermore, as net investments in foreign subsidiaries are for strategic purposes, they are not hedged by the Company.

Certain forward exchange contracts designated by the Company to hedge foreign currency exchange rate risks associated with the purchase of additional shares of USJC in JPY, amounting to JPY 23 billion, expired prior to December 31, 2018. The cash flow hedge reserve in other components of equity, amounting to NT\$(3) million, was recognized as consideration for the ownership interest of 84.1% in USJC on October 1, 2019. Please refer to Note 6(6).

The foreign currency sensitivity analysis of the possible change in foreign exchange rates on the Company's profit is performed on significant monetary items denominated in foreign currencies as of the end of the reporting period. When NTD strengthens/weakens against USD by 10%, the profit for the years ended December 31, 2019 and 2018 decreases/increases by NT\$1,009 million and NT\$1,367 million, respectively.

Interest rate risk

The Company is exposed to interest rate risk arising from borrowing at floating interest rates. All of the Company's bonds have fixed interest rates and are measured at amortized cost. As such, changes in interest rates would not affect the future cash flows. On the other hand, as the interest rates of the Company's short-term and long-term bank loans are floating, changes in interest rates would affect the future cash flows but not the fair value. Please refer to Note 6(10), 6(11) and 6(12) for the range of interest rates of the Company's bonds and bank loans.

At the reporting dates, a change of 10 basis points of interest rate in a reporting period could cause the profit for the years ended December 31, 2019 and 2018 to decrease/increase by NT\$6 million and NT\$2 million, respectively.

Equity price risk

The Company's listed and unlisted equity securities are susceptible to market price risk arising from uncertainties about future performance of equity markets. The Company's equity investments are classified as financial assets at fair value through profit or loss and financial assets at fair value through other comprehensive income.

The sensitivity analysis for the equity instruments is based on the change in fair value as of the reporting date. A change of 5% in the price of the aforementioned financial assets at fair value through profit or loss of listed companies could increase/decrease the Company's profit for the years ended December 31, 2019 and 2018 by NT\$174 million and NT\$141 million, respectively. A change of 5% in the price of the aforementioned financial assets at fair value through other comprehensive income of listed companies could increase/decrease the Company's other comprehensive income for the years ended December 31, 2019 and 2018 by NT\$671 million and NT\$408 million, respectively.

(4) Credit risk management

The Company only trades with approved and creditworthy third parties. Where the Company trades with third parties which have less credit, it will request collateral from them. It is the Company's policy that all customers who wish to trade on credit terms are subject to credit verification procedures. In addition, notes and accounts receivable balances are monitored on an ongoing basis to decrease the Company's exposure to credit risk.

The Company mitigates the credit risks from financial institutions by limiting its counter parties to only reputable domestic or international financial institutions with good credit standing and spreading its holdings among various financial institutions. The Company's exposure to credit risk arising from the default of counter-parties is limited to the carrying amount of these instruments.

As of December 31, 2019 and 2018, accounts receivable from the top ten customers represent 84% and 83% of the total accounts receivable of the Company, respectively. The credit concentration risk of other accounts receivable is insignificant.

(5) Liquidity risk management

The Company's objectives are to maintain a balance between continuity of funding and flexibility through the use of cash and cash equivalents, bank loans, bonds and lease.

The table below summarizes the maturity profile of the Company's financial liabilities based on the contractual undiscounted payments and contractual maturity:

	As of December 31, 2019				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Short-term loans	\$1,389,620	\$-	\$-	\$-	\$1,389,620
Payables	18,464,191	-	-	-	18,464,191
Guarantee deposits	98,824	95,887	-	-	194,711
Bonds payable	20,659,607	10,590,265	8,689,971	-	39,939,843
Long-term loans	539,584	3,969,030	-	-	4,508,614
Lease liabilities	325,059	625,393	584,285	2,250,847	3,785,584
Other financial liabilities	-	12,668,287	8,445,826	-	21,114,113
Total	\$41,476,885	\$27,948,862	\$17,720,082	\$2,250,847	\$89,396,676
	As of December 31, 2018				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Short-term loans	\$1,412,955	\$-	\$-	\$-	\$1,412,955
Payables	19,110,049	-	-	-	19,110,049
Guarantee deposits	52,665	153,973	15,385	400,010	622,033
Bonds payable	3,000,855	23,187,913	8,484,393	8,563,021	43,236,182
Long-term loans	345,373	682,306	-	-	1,027,679
Other financial liabilities	112,744	-	17,477,984	4,369,730	21,960,458
Total	\$24,034,641	\$24,024,192	\$25,977,762	\$13,332,761	\$87,369,356

(6) Foreign currency risk management

The Company entered into forward exchange contracts for hedging the exchange rate risk arising from the net monetary assets or liabilities denominated in foreign currency. The details of forward exchange contracts entered into by the Company are summarized as follows:

As of December 31, 2019

None.

As of December 31, 2018

Type	Notional Amount	Contract Period
Forward exchange contracts	Sell USD 28 million	December 10, 2018~ January 7, 2019

(7) Fair value of financial instruments

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value measurement is based on the presumption that the transaction to sell the asset or transfer the liability takes place either in the principal market for the asset or liability, or in the absence of a principal market, in the most advantageous market for the asset or liability.

The principal or the most advantageous market must be accessible by the Company.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest.

A fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use.

The Company uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities for which fair value is measured or disclosed in the financial statements are categorized within the fair value hierarchy, described as follows, based on the lowest level input that is significant to the fair value measurement as a whole:

- Level 1 — Quoted (unadjusted) market prices in active markets for identical assets or liabilities;
- Level 2 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is directly or indirectly observable;
- Level 3 — Valuation techniques for which the lowest level input that is significant to the fair value measurement is unobservable.

For assets and liabilities that are recognized in the financial statements on a recurring basis, the Company determines whether transfers have occurred between levels in the hierarchy by re-assessing categorization (based on the lowest level input that is significant to the fair value measurement as a whole) at the end of each reporting period.

a. Assets and liabilities measured and recorded at fair value on a recurring basis:

	As of December 31, 2019			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Financial assets at fair value through profit or loss, current	\$668,476	\$-	\$-	\$668,476
Financial assets at fair value through profit or loss, noncurrent	2,816,636	20,125	1,608,991	4,445,752
Financial assets at fair value through other comprehensive income, noncurrent	13,417,308	-	971,289	14,388,597
As of December 31, 2018				
Financial assets:				
Financial assets at fair value through profit or loss, current	\$493,481	\$3,561	\$-	\$497,042
Financial assets at fair value through profit or loss, noncurrent	2,333,055	26,700	1,444,269	3,804,024
Financial assets at fair value through other comprehensive income, noncurrent	8,166,277	-	2,965,390	11,131,667

Fair values of financial assets at fair value through profit or loss and financial assets at fair value through other comprehensive income that are categorized into level 1 are based on the quoted market prices in active markets. If there is no active market, the Company estimates the fair value by using the valuation techniques (income approach and market approach) in consideration of cash flow forecast, recent fund raising activities, valuation of similar companies, individual company's development, market conditions and other economic indicators. If there are restrictions on the sale or transfer of a financial asset, which are a characteristic of the asset, the fair value of the asset will be determined based on similar but unrestricted financial assets' quoted market price with appropriate discounts for the restrictions. To measure fair values, if the lowest level input that is significant to the fair value measurement is directly or indirectly observable, then the financial assets are classified as Level 2 of the fair value hierarchy, otherwise as Level 3.

During the years ended December 31, 2019 and 2018, there were no significant transfers between Level 1 and Level 2 fair value measurements.

Reconciliations for fair value measurement in Level 3 fair value hierarchy were as follows:

	Financial assets at fair value through profit or loss			Financial assets at fair value through other comprehensive income		
	Option	Common stock	Total	Common stock	Preferred stock	Total
As of January 1, 2019	\$-	\$1,444,269	\$1,444,269	\$2,781,364	\$184,026	\$2,965,390
Recognized in profit	-	164,722	164,722	-	-	-
Recognized in other comprehensive income (loss)	-	-	-	318,419	(8,532)	309,887
Disposal	-	-	-	(2,303,988)	-	(2,303,988)
As of December 31, 2019	\$-	\$1,608,991	\$1,608,991	\$795,795	\$175,494	\$971,289
	Financial assets at fair value through profit or loss			Financial assets at fair value through other comprehensive income		
	Option	Common stock	Total	Common stock	Preferred stock	Total
As of January 1, 2018	\$31,605	\$1,655,421	\$1,687,026	\$2,892,054	\$233,326	\$3,125,380
Recognized in profit	(31,605)	(93,082)	(124,687)	-	-	-
Recognized in other comprehensive income	-	-	-	(110,690)	(49,300)	(159,990)
Transfer out of Level 3	-	(118,070)	(118,070)	-	-	-
As of December 31, 2018	\$-	\$1,444,269	\$1,444,269	\$2,781,364	\$184,026	\$2,965,390

Recognized as part of profit (loss) above, the profit (loss) from financial assets still held by the Company as of December 31, 2019 and 2018 were NT\$165 million and NT\$(90) million, respectively.

The Company's policy to recognize the transfer into and out of fair value hierarchy levels is based on the event or changes in circumstances that caused the transfer.

Significant unobservable inputs of fair value measurement in Level 3 fair value hierarchy were as follow:

As of December 31, 2019				
Category of equity securities	Valuation technique	Significant unobservable inputs	Interrelationship between inputs and fair value	Sensitivity analysis of interrelationship between inputs and fair value
Unlisted stock	Market Approach	Discount for lack of marketability	The greater degree of lack of marketability, the lower the estimated fair value is determined.	A change of 5% in the discount for lack of marketability of the aforementioned fair values of unlisted stocks could decrease/increase the Company's profit (loss) and other comprehensive income (loss) for the year ended December 31, 2019 by NT\$85 million and NT\$53 million, respectively.

As of December 31, 2018				
Category of equity securities	Valuation technique	Significant unobservable inputs	Interrelationship between inputs and fair value	Sensitivity analysis of interrelationship between inputs and fair value
Unlisted stock	Market Approach	Discount for lack of marketability	The greater degree of lack of marketability, the lower the estimated fair value is determined.	A change of 5% in the discount for lack of marketability of the aforementioned fair values of unlisted stocks could decrease/increase the Company's profit (loss) and other comprehensive income (loss) for the year ended December 31, 2018 by NT\$80 million and NT\$196 million, respectively.

b. Assets and liabilities not recorded at fair value but for which fair value is disclosed:

The fair value of bonds payable is estimated by the market price or using a valuation model. The model uses market-based observable inputs including share price, volatility, credit spread and risk-free interest rates. The fair value of long-term loans is determined using discounted cash flow model, based on the Company's current incremental borrowing rates of similar loans.

The fair values of the Company's short-term financial instruments including cash and cash equivalents, receivables, refundable deposits, other financial assets-current, short-term loans, payables and guarantee deposits approximate their carrying amount due to their maturities within one year.

As of December 31, 2019

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$39,571,920	\$21,347,047	\$18,224,873	\$-	\$38,781,416
Long-term loans (current portion included)	4,400,000	-	4,400,000	-	4,400,000

As of December 31, 2018

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$41,714,368	\$23,929,019	\$17,785,349	\$-	\$41,378,182
Long-term loans (current portion included)	1,000,000	-	1,000,000	-	1,000,000

(8) Significant financial assets and liabilities denominated in foreign currencies

	As of December 31,					
	2019		2018			
	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)
<u>Financial Assets</u>						
<u>Monetary items</u>						
USD	\$1,579,412	30.03	\$47,429,752	\$1,380,337	30.67	\$42,334,947
JPY	1,574,700	0.2751	433,201	16,172,571	0.2764	4,470,099
EUR	2,162	33.54	72,498	2,113	35.01	73,972
SGD	66,197	22.28	1,474,870	34,325	22.41	769,217
RMB	-	-	-	333	4.45	1,482

	As of December 31,					
	2019		2018			
	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)
<u>Non-Monetary items</u>						
USD	\$37,542	30.03	\$1,127,372	\$26,063	30.67	\$799,338
JPY	-	-	-	8,032,210	0.2764	2,220,103
SGD	7,877	22.28	175,494	8,212	22.41	184,025
<u>Financial Liabilities</u>						
<u>Monetary items</u>						
USD	304,503	30.13	9,174,678	317,636	30.77	9,773,670
JPY	1,941,812	0.2792	542,154	3,132,121	0.2805	878,560
EUR	4,717	33.94	160,109	13,659	35.41	483,682
SGD	82,303	22.46	1,848,507	39,650	22.59	895,677
RMB	4,623,788	4.35	20,094,983	4,538,975	4.50	20,411,772
<u>The exchange gain or loss from monetary financial assets and liabilities</u>						
USD				(327,044)		642,288
JPY				532,668		56,973
EUR				7,855		8,154
SGD				(22,530)		4,473
RMB				282		420
Other				1,802		58

(9) Capital management

The primary objective of the Company's capital management is to ensure that it maintains a strong credit rating and healthy capital ratios to support its business and maximize the stockholders' value. The Company also ensures its ability to operate continuously to provide returns to stockholders and the interests of other related parties, while maintaining the optimal capital structure to reduce costs of capital.

To maintain or adjust the capital structure, the Company may adjust the dividend payment to stockholders, return capital to stockholders, issue new shares or dispose assets to redeem liabilities.

Similar to its peers, the Company monitors its capital based on debt to capital ratio. The ratio is calculated as the Company's net debt divided by its total capital. The net debt is derived by taking the total liabilities on the balance sheets minus cash and cash equivalents. The total capital consists of total equity (including capital, additional paid-in capital, retained earnings and other components of equity) plus net debt.

The Company's strategy, which is unchanged for the reporting periods, is to maintain a reasonable ratio in order to raise capital with reasonable cost. The debt to capital ratios as of December 31, 2019 and 2018 were as follows:

	As of December 31,	
	2019	2018
Total liabilities	\$95,946,607	\$93,117,497
Less: Cash and cash equivalents	(66,534,836)	(59,342,170)
Net debt	29,411,771	33,775,327
Total equity	206,804,357	206,069,723
Total capital	\$236,216,128	\$239,845,050
Debt to capital ratios	12.45%	14.08%

13. ADDITIONAL DISCLOSURES

(1) The following are additional disclosures for the Company and its affiliates as required by the R.O.C. Securities and Futures Bureau:

a. Financing provided to others for the year ended December 31, 2019: Please refer to Attachment 1.

b. Endorsement/Guarantee provided to others for the year ended December 31, 2019: Please refer to Attachment 2.

c. Securities held as of December 31, 2019 (excluding subsidiaries, associates and joint venture): Please refer to Attachment 3.

d. Individual securities acquired or disposed of with accumulated amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 4.

e. Acquisition of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 5.

f. Disposal of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 6.

g. Related party transactions for purchases and sales amounts exceeding the lower of NT\$100 million or 20 percent of the capital stock for the year ended December 31, 2019: Please refer to Attachment 7.

h. Receivables from related parties with amounts exceeding the lower of NT\$100 million or 20 percent of capital stock as of December 31, 2019: Please refer to Attachment 8.

i. Names, locations and related information of investees as of December 31, 2019 (excluding investment in Mainland China): Please refer to Attachment 9.

j. Financial instruments and derivative transactions: Please refer to Note 12.

(2) Investment in Mainland China

a. Investee company name, main businesses and products, total amount of capital, method of investment, accumulated inflow and outflow of investments from Taiwan, net income (loss) of investee company, percentage of ownership, investment income (loss), carrying amount of investments, cumulated inward remittance of earnings and limits on investment in Mainland China: Please refer to Attachment 10.

b. Directly or indirectly significant transactions through third regions with the investees in Mainland China, including price, payment terms, unrealized gain or loss, and other events with significant effects on the operating results and financial condition: Please refer to Attachment 1, Attachment 2, Attachment 7 and Attachment 8.

14. OPERATING SEGMENT INFORMATION

In accordance with Article 22 of the Regulations, the Company is not required to prepare operating segment information for the parent company only financial statements. Please refer to the consolidated financial statements of United Microelectronics Corporation and subsidiaries for operating segment information.

318 ATTACHMENT 1 (Financing provided to others for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

No. (Note 1)	Lender	Counter-party	Financial statement account	Related Party	Maximum balance for the period	Ending balance	Actual amount provided	Interest rate	Nature of financing	Amount of sales to counter-party	Reason for financing	Loss allowance	Collateral		Limit of total financing amount (Note2)	
													Item	Value		
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Other receivables - related parties	Yes	\$7,507,500	\$7,507,500	\$1,201,200	2.56%-3.06%	The need for short-term financing	\$-	Business turnover	\$-	None	\$-	\$20,680,436	\$82,721,743
TERA ENERGY DEVELOPMENT CO., LTD.																
1	TERA ENERGY DEVELOPMENT CO., LTD.	TIPPING POINT ENERGY COC PPA SPE-1,LLC	Other receivables	No	\$2,349	\$2,349	\$2,349	9.00%	Needs for operation	\$2,349	-	\$2,349	None	\$-	\$2,349	\$24,495

Note 1: The parent company and its subsidiaries are coded as follows:

(i) The parent company is coded "0".

(ii) The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: Limit of financing amount for individual counter-party shall not exceed 10% of the lender's net assets value as of the period.

Limit of total financing amount shall not exceed 40% of the Company's net asset value.

Note 3: Limit of financing amount for individual counter-party shall not exceed 10% of the lender's net assets value as of the period or the needed amount for operation, which is lower.

Limit of total financing amount shall not exceed 40% of latest financial statements of lender.

ATTACHMENT 2 (Endorsement/Guarantee provided to others for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

No. (Note 1)	Endorsor/Guarantor	Receiving party Company name	Relationship (Note 2)	Limit of guarantee/endorsement amount for receiving party (Note 3)	Maximum balance for the period	Ending balance (Note 5)	Actual amount provided (Note 5)	Amount of collateral guarantee/endorsement	Percentage of accumulated guarantee amount to net assets value from the latest financial statement	Limit of total guarantee/endorsement amount (Note 4)
0	UNITED MICROELECTRONICS CORPORATION	NEXPOWER TECHNOLOGY CORP.	2	\$93,061,961	\$2,448,000	\$748,000	\$747,900	\$-	0.36%	\$93,061,961
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	2	93,061,961	15,105,090	13,933,920	13,696,378	-	6.74%	93,061,961

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

No. (Note 1)	Endorsor/Guarantor	Receiving party Company name	Relationship (Note 2)	Limit of guarantee/endorsement amount for receiving party (Note 7)	Maximum balance for the period	Ending balance	Actual amount provided	Amount of collateral guarantee/endorsement	Percentage of accumulated guarantee amount to net assets value from the latest financial statement	Limit of total guarantee/endorsement amount (Note 7)
1	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	6	\$10,248,216	\$8,832,353	\$8,832,353	\$3,913,609	\$-	38.78%	\$10,248,216

Note 1: The parent company and its subsidiaries are coded as follows:

1. The parent company is coded "0".

2. The subsidiaries are coded consecutively beginning from "1" in the order presented in the table above.

Note 2: According to the "Guidelines Governing the Preparation of Financial Reports by Securities Issuers" issued by the R.O.C. Securities and Futures Bureau, receiving parties should be disclosed as one of the following:

- A company with which it does business.
- A company in which the public company directly and indirectly holds more than 50% of the voting shares.
- A company that directly and indirectly holds more than 50% of the voting shares in the public company.
- A company in which the public company holds, directly or indirectly, 90% or more of the voting shares.
- A company that fulfills its contractual obligations by providing mutual endorsements/guarantees for another company in the same industry or for joint builders for purposes of undertaking a construction project.
- A company that all capital contributing shareholders make endorsements/ guarantees for their jointly invested company in proportion to their shareholding percentages.
- Companies in the same industry provide among themselves joint and several security for a performance guarantee of a sales contract for pre-construction homes pursuant to the Consumer Protection Act for each other.

Note 3: The amount of endorsements/guarantees shall not exceed 45% of the net worth of endorser/guarantor; and the ceilings on the amount of endorsements/guarantees for any single entity are as follows:

- The amount of endorsements/guarantees for any single entity shall not exceed 45% of net worth of endorser/guarantor.
- The amount of endorsements/guarantees for a company which endorser/guarantor does business with, except the ceiling rules abovementioned shall not exceed the needed amounts arising from business dealings which is the higher amount of total sales or purchase transactions between endorser/guarantor and the receiving party.

The aggregate amount of endorsements/guarantees that the Company as a whole is permitted to make shall not exceed 45% of the Company's net worth, and the aggregate amount of endorsements/guarantees for any single entity shall not exceed 45% of the Company's net worth.

Note 4: Limit of total guarantee/endorsement amount shall not exceed 45% of UMC's net assets value as of December 31, 2019.

Note 5: On December 24, 2014, the board of directors resolved to increase the endorsement to NEXPOWER TECHNOLOGY CORP.'s syndicated loan from banks including Bank of Taiwan for the amount up to NTS\$1,700 million, it has been fully repaid in January 2019.

Note 6: On February 22, 2017, the board of directors resolved to guarantee UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.'s syndicated loan from banks including China Development Bank in the amount up to USD 310 million.

On March 7, 2018, the board of directors resolved to increase the endorsement amount to USD 152 million, on October 24, 2018, the board of directors resolved to increase the endorsement amount to USD 41 million.

On July 24, 2019, the board of directors resolved to decrease the endorsement amount to USD 26 million, on December 18, 2019, the board of directors resolved to decrease the endorsement amount to USD 464 million. Total endorsement amount is up to USD 464 million.

As of December 31, 2019, actual amount provided was NTS\$3,696 million.

Note 7: Limit of total endorsed/guaranteed amount shall not exceed 45% of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2019.

The amount of endorsements/guarantees for any single entity shall not exceed 45% of net worth of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2019.

The aggregate amount of endorsements/guarantees that the Company as a whole is permitted to make shall not exceed 45% of the Company's net worth, and the aggregate amount of

endorsements/guarantees for any single entity shall not exceed 45% of the Company's net worth.

ATTACHMENT 3 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Type of securities	Name of securities	Relationship	December 31, 2019			Shares as collateral (thousand)	
			Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)		Fair value/ Net assets value
Stock	ACTION ELECTRONICS CO., LTD.	-	18,182	\$146,730	6.56	\$146,730	None
Fund	MILLERFUL NO.1 REAL ESTATE INVESTMENT TRUST	-	18,000	184,500	1.70	184,500	None
Stock	PIXART IMAGING, INC.	-	1,600	236,800	1.16	236,800	None
Stock	KING YUAN ELECTRONICS CO., LTD.	-	2,675	100,446	0.22	100,446	None
Stock	PIXTech, INC.	-	9,883	-	17.63	-	None
Stock	UNITED FU SHEN CHEN TECHNOLOGY CORP.	-	17,511	-	15.75	-	None
Stock	HOLTEK SEMICONDUCTOR INC.	-	22,144	1,521,311	9.79	1,521,311	None
Stock	OCTTASIA INVESTMENT HOLDING INC.	-	6,692	331,577	9.29	331,577	None
Stock	UNITED INDUSTRIAL GASES CO., LTD.	-	16,680	1,277,414	7.66	1,277,414	None
Stock	AMIC TECHNOLOGY CORP.	-	5,627	-	4.71	-	None
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	12,521	152,878	4.35	152,878	None
Stock	KING YUAN ELECTRONICS CO., LTD.	-	20,483	769,125	1.68	769,125	None
Stock	EPISTAR CORP.	-	10,715	346,630	0.98	346,630	None
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	1,184	26,692	0.83	26,692	None
Stock	PROMOS TECHNOLOGIES INC.	-	324	-	0.72	-	None
Stock-Preferred stock	TONBU, INC.	-	938	-	-	-	None
Stock-Preferred stock	AETAS TECHNOLOGY INC.	-	1,166	-	-	-	None
Stock-Preferred stock	TA SHEE GOLF & COUNTRY CLUB	-	0	20,125	-	20,125	None
Stock	SILICON INTEGRATED SYSTEMS CORP.	The Company's director	105,356	961,898	19.73	961,898	None
Stock	UNIMICRON HOLDING LIMITED	-	20,000	795,795	17.00	795,795	None
Stock	UNIMICRON TECHNOLOGY CORP.	-	196,136	8,237,712	13.03	8,237,712	None
Stock	ITE TECH, INC.	-	13,960	616,333	8.67	616,333	None
Stock	NOVATEK MICROELECTRONICS CORP.	-	16,445	3,601,365	2.70	3,601,365	None
Stock-Preferred stock	MTIC HOLDINGS PTE. LTD.	-	12,000	175,494	-	175,494	None

ATTACHMENT 3 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	DARCHUN VENTURE CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,514	\$2,923	19.65	\$2,923
Stock	SOLARGATE TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	957	-	15.94	-
Fund	TRENDFORCE CAPITAL FUND SPC-TRENDFORCE CAPITAL FUND I SP	-	Financial assets at fair value through profit or loss, noncurrent	15	46,896	15.12	46,896
Stock	TRONC-E CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,800	-	14.49	-
Stock	CENTERA PHOTONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,750	124,875	13.76	124,875
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,500	17,125	10.23	17,125
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	10,719	52,522	9.12	52,522
Stock	MONTJADE ENGINEERING CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,800	18,504	8.18	18,504
Stock	NEW SMART TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	900	12,087	7.29	12,087
Stock	WIN WIN PRECISION TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,150	48,101	6.93	48,101
Stock	RISELINK VENTURE CAPITAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	526	6,574	6.67	6,574
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3	62,376	5.35	62,376
Stock	LICO TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	6,609	-	5.32	-
Stock	ACTI CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,968	10,232	5.31	10,232
Stock	ACT GENOMICS HOLDINGS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,600	34,535	5.12	34,535
Stock	MERIDIGEN BIOTECH CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,838	26,903	4.21	26,903
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,374	166,996	3.72	166,996
Stock	SOLID STATE SYSTEM CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,000	53,850	3.71	53,850
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	10,059	122,818	3.49	122,818
Stock	TAIWAN AULISA MEDICAL DEVICES TECHNOLOGIES, INC.	-	Financial assets at fair value through profit or loss, noncurrent	800	7,280	3.21	7,280
Stock	ANIMATION TECHNOLOGIES INC.	-	Financial assets at fair value through profit or loss, noncurrent	265	-	3.16	-
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,416	99,584	3.11	99,584
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	69,053	2.96	69,053
Stock	BRIGHT SHELAND INTERNATIONAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	41,160	2.88	41,160
Stock	TAIWAN SEMICONDUCTOR CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,741	320,130	2.70	320,130

ATTACHMENT 3 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Type of securities	Name of securities	Relationship	December 31, 2019				Shares as collateral (thousand)
			Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock	WALTOP INTERNATIONAL CORP.	-	327	\$1,432	2.23	\$1,432	None
Stock	CHITEC TECHNOLOGY CORP., LTD.	-	600	24,060	2.15	24,060	None
Fund	VERTEX V (C.I.) FUND LP.	-	-	46,186	2.07	46,186	None
Stock	MOBILE DEVICES INC.	-	261	-	1.96	-	None
Stock	WISON TECHNOLOGIES CO., LTD.	-	1,141	4,564	1.71	4,564	None
Stock	SOLAR APPLIED MATERIALS TECHNOLOGY CORP.	-	8,000	179,600	1.61	179,600	None
Stock	CRYSTALWISE TECHNOLOGY INC.	-	2,114	25,045	1.02	25,045	None
Stock	NORATECH PHARMACEUTICALS, INC.	-	1,000	9,540	0.95	9,540	None
Stock	TAIWANI PHARMACEUTICALS CO., LTD.	-	582	6,769	0.84	6,769	None
Stock	POWERTEC ELECTROCHEMICAL CORP.	-	9,930	-	0.75	-	None
Stock	TIGERAIR TAIWAN CO., LTD.	-	1,300	65,260	0.65	65,260	None
Stock	FUSHENG PRECISION CO., LTD.	-	700	125,650	0.53	125,650	None
Stock	LINTES TECHNOLOGY CO., LTD.	-	265	24,088	0.46	24,088	None
Stock	QUASER MACHINE TOOLS, INC.	-	200	9,370	0.44	9,370	None
Stock	FORTEMEDIA, INC.	-	21	3	0.02	3	None
Stock-Preferred Stock	EOULE INTERNATIONAL LIMITED	-	23,909	176,019	-	176,019	None
Stock-Preferred Stock	FLOADIA CORP.	-	2	121,408	-	121,408	None
Stock-Preferred Stock	CEREBREX, INC.	-	1	-	-	-	None
Stock-Preferred Stock	FORTEMEDIA, INC.	-	311	1,027	-	1,027	None
Stock-Preferred Stock	ACEPEDIA, INC.	-	1,449	30,030	-	30,030	None
Stock-Preferred Stock	BRAVOTEK CORP.	-	2,250	59,459	-	59,459	None
Stock-Preferred Stock	GEAR RADIO LTD.	-	1,900	37,087	-	37,087	None
Convertible bonds	EPISIL-PRECISION INC.	-	125	13,900	-	13,900	None
Stock	SHIN-ETSU HANDOTAI TAIWAN CO., LTD.	-	10,500	334,635	7.00	334,635	None
Stock	UNITED MICROELECTRONICS CORP.	Parent company	16,079	264,495	0.14	264,495	None
Stock	EMPASS TECHNOLOGY INC.	-	200	10,000	-	N/A	None
Stock	VALUE VALVES CO., LTD.	-	40	3,987	-	N/A	None

ATTACHMENT 3 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

TLC CAPITAL CO., LTD.

		December 31, 2019						Shares as collateral
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	(thousand)
Convertible bonds	Cloud Moment (Cayman) Inc.	-	Financial assets at fair value through profit or loss, current	-	\$-	-	\$-	None
Fund	EVERYI CAPITAL ASIA FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	111,766	18.18	111,766	None
Stock	WINKING ENTERTAINMENT LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,433	41,853	15.35	41,853	None
Stock	BEAUTY ESSENTIALS INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	150,500	84,364	13.99	84,364	None
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	9	243,278	9.00	243,278	None
Stock	ACTI CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2,252	11,708	6.08	11,708	None
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,529	223,462	4.98	223,462	None
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	8,220	4.91	8,220	None
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	5,435	26,630	4.62	26,630	None
Stock	ALL-STARS XMI LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2	53,465	4.58	53,465	None
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	181,831	4.24	181,831	None
Stock	SUNDIA MEDITECH GROUP	-	Financial assets at fair value through profit or loss, noncurrent	779	20,192	3.20	20,192	None
Stock	WIESON TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,829	7,314	2.74	7,314	None
Fund	H&QAP GREATER CHINA GROWTH FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	7,452	2.67	7,452	None
Stock	ENTEREX INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,127	19,328	1.02	19,328	None
Stock	HANDA PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	30,090	0.87	30,090	None
Stock	MATERIALS ANALYSIS TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	500	40,750	0.80	40,750	None
Stock	SIMPLO TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,422	431,012	0.77	431,012	None
Stock	TXC CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,978	93,559	0.64	93,559	None
Stock	LINTES TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	365	33,179	0.64	33,179	None
Stock	POWTEC ELECTROCHEMICAL CORP (formerly POWERTEC ENERGY CORP)	-	Financial assets at fair value through profit or loss, noncurrent	6,470	-	0.49	-	None
Stock	EVERGREEN STEEL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	35,000	0.25	35,000	None
Convertible bonds	SIGURD MICROELECTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	50	5,658	-	5,658	None
Convertible bonds	EPISIL-PRECISION INC.	-	Financial assets at fair value through profit or loss, noncurrent	100	11,120	-	11,120	None
Convertible bonds	TECHCENTRAL INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	100	10,060	-	10,060	None

ATTACHMENT 3 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

TLC CAPITAL CO., LTD.

		December 31, 2019					Shares as collateral (thousand)
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value
Stock-Preferred stock	YOUJIA GROUP LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,685	\$6,192	-	\$6,192
Stock-Preferred stock	ALO7 LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,377	194,971	-	194,971
Stock-Preferred stock	ADWO MEDIA HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	5,332	-	-	-
Stock-Preferred stock	IMO, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,519	-	-	-
Stock-Preferred stock	HIGHLANDER FINANCIAL GROUP CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	26,499	169,778	-	169,778
Stock-Preferred stock	X2 POWER TECHNOLOGIES LTD.	-	Financial assets at fair value through profit or loss, noncurrent	21,703	128,396	-	128,396
Stock-Preferred stock	GAME VIDEO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	279	178,037	-	178,037
Stock-Preferred stock	CLOUD MOMENT (CAYMAN) INC.	-	Financial assets at fair value through profit or loss, noncurrent	359	-	-	-
Stock-Preferred stock	PLAYNITRIDE INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,739	179,734	-	179,734
Stock-Preferred stock	EJOULE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	35,863	264,029	-	264,029
Stock-Preferred stock	TURNING POINT LASERS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,000	67,880	-	67,880
Stock-Preferred stock	ARTERY TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	770	104,054	-	104,054
Stock	VALUE VALVES CO., LTD.	-	Prepayments for investments	40	3,987	-	N/A

UMC CAPITAL CORP.

		December 31, 2019					Shares as collateral (thousand)
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value
Convertible bonds	SWIFTSTACK, INC.	-	Financial assets at fair value through profit or loss, current	-	USD 916	-	USD 916
Convertible bonds	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, current	-	USD 190	-	USD 190
Convertible bonds	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, current	-	USD 703	-	USD 703
Capital	TRANSLINK MANAGEMENT III, L.L.C.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 959	14.33	USD 959
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 16,371	11.47	USD 16,371
Stock	OCTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	7,035	USD 11,608	9.76	USD 11,608
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 6,898	8.87	USD 6,898
Stock	ALL-STARS XM LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3	USD 2,077	5.35	USD 2,077
Stock	ALL-STARS SP IV LTD.	-	Financial assets at fair value through profit or loss, noncurrent	7	USD 7,123	5.03	USD 7,123

ATTACHMENT 3 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

UMC CAPITAL CORP.

		December 31, 2019					Shares as collateral (thousand)
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value
Fund	TRANSILINK CAPITAL PARTNERS II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 1,630	4.53	USD 1,630
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	4	USD 3,601	4.00	USD 3,601
Fund	GROVE VENTURES II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 240	3.33	USD 240
Fund	SIERRA VENTURES XI, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 2,695	1.76	USD 2,695
Fund	STORM VENTURES FUND V, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 2,989	1.69	USD 2,989
Stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	80	USD 56	0.46	USD 56
Convertible bonds	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD 1,678	-	USD 1,678
Stock-Preferred stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,644	USD 6,631	-	USD 6,631
Stock-Preferred stock	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,052	USD 3,433	-	USD 3,433
Stock-Preferred stock	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,349	USD 2,092	-	USD 2,092
Stock-Preferred stock	ATSCALE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,520	USD 9,112	-	USD 9,112
Stock-Preferred stock	SENSIFREE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	614	USD 1,307	-	USD 1,307
Stock-Preferred stock	APIPER HOLDINGS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	64	USD 3,237	-	USD 3,237
Stock-Preferred stock	DCARD HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	27,819	USD 4,789	-	USD 4,789
Stock-Preferred stock	NEXTINPUT, INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,866	USD 1,386	-	USD 1,386
Stock-Preferred stock	SHOCARD, INC.	-	Financial assets at fair value through profit or loss, noncurrent	517	USD 133	-	USD 133
Stock-Preferred stock	GCT SEMICONDUCTOR, INC.	-	Financial assets at fair value through profit or loss, noncurrent	175	USD 51	-	USD 51
Stock-Preferred stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	12,241	USD 4,968	-	USD 4,968
Stock-Preferred stock	SIFOTONICS TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,500	USD 6,592	-	USD 6,592
Stock-Preferred stock	NEYO ENERGY, INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,980	-	-	-
Stock-Preferred stock	SWIFTSTACK, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,855	USD 1,165	-	USD 1,165
Stock-Preferred stock	NEXENTA SYSTEMS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,555	-	-	-
Stock-Preferred stock	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	9,461	USD 4,526	-	USD 4,526
Stock-Preferred stock	EAST VISION TECHNOLOGY LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,770	-	-	-
Stock-Preferred stock	RENIAC, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,287	USD 2,266	-	USD 2,266
Stock-Preferred stock	BLUESPACE.AI, INC.	-	Financial assets at fair value through profit or loss, noncurrent	174	USD 300	-	USD 300

ATTACHMENT 3 (Securities held as of December 31, 2019) (Excluding subsidiaries, associates and joint ventures)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

TERA ENERGY DEVELOPMENT CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	TIAN TAI PHOTOELECTRICITY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	375	\$5,561	1.18	\$5,561

NEXPOWER TECHNOLOGY CORP.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	PACIFIC-GREEN INTEGRATED TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	54	\$-	18.00	\$-

SINO PARAGON LIMITED

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Fund	SPARKLABS GLOBAL VENTURES FUND I, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	\$85,482	11.13	\$85,482
Fund	SPARKLABS KOREA FUND II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	33,499	5.00	33,499

UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2019			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Fund	LANHOR FUND	-	Financial assets at fair value through profit or loss, noncurrent	-	RMB 38,533	9.71	RMB 38,533

ATTACHMENT 4 (Individual securities acquired or disposed of with accumulated amount exceeding the lower of NT\$30 million or 20 percent of the capital stock for the year ended December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Type of securities	Name of the securities	Financial statement account	Counter-party	Relationship	Beginning balance		Addition		Disposal		Ending balance	
					Units (thousand)/ bonds/ shares (thousand)	Amount (Note 1)	Units (thousand)/ bonds/ shares (thousand)	Amount	Units (thousand)/ bonds/ shares (thousand)	Amount	Units (thousand)/ bonds/ shares (thousand)	Gain (Loss) from disposal
Stock	TRIKNIGHT CAPITAL CORPORATION	Investments accounted for under the equity method	Purchase of newly issued shares	Associate	168,000	\$1,520,575	72,000	\$720,000	-	\$-	-	\$2,281,631 (Note 2)
Stock	UNITED SEMICONDUCTOR JAPAN CO., LTD.	Investments accounted for under the equity method	FUJITSU SEMICONDUCTOR LIMITED	-	18,447	2,220,103	97,800	15,711,370	-	-	116,247	17,515,233 (Note 3)

Note 1 : The amounts of beginning and ending balances of financial assets at fair value through other comprehensive income, noncurrent are recorded at the prevailing market prices. The amounts of beginning and ending balances of investments accounted for under the equity method include adjustments under the equity method.

Note 2 : The ending balance includes share of profit of associates and joint ventures of \$71,056 thousand and capital reduction of \$(30,000) thousand.

Note 3 : The previously held ownership interest of 15.9% in UNITED SEMICONDUCTOR JAPAN CO., LTD. (Before the name was changed to MIE FUJITSU SEMICONDUCTOR LIMITED) was treated as disposal and requisition upon completion of the acquisition of remaining ownership interest of 84.1% on October 1, 2019, which was reclassified changes in fair value \$84 thousand from financial assets at fair value through other comprehensive, noncurrent to investments accounted for under equity method. The ending balance includes bargain purchase gain of \$171,585 thousand resulted from the acquisition, gains or losses on hedging instruments of \$2,572 thousand, share of profit of associates and joint ventures of \$270,787 thousand and exchange differences on translation of foreign operations adjustment under equity method of \$(945,069) thousand.

ATTACHMENT 5 (Acquisition of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

Name of properties	Transaction date	Transaction amount	Payment status	Counter-party	Where counter-party is a related party, details of prior transactions				Date of acquisition and status of utilization	Other commitments
					Former holder of property	Relationship between former holder and acquirer of property	Date of transaction	Transaction amount		

None

ATTACHMENT 6 (Disposal of individual real estate with amount exceeding the lower of NT\$300 million or 20 percent of the capital stock for the year ended December 31, 2019)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

Names of properties	Transaction date	Date of original acquisition	Carrying amount	Transaction amount	Status of proceeds collection	Gain (Loss) from disposal	Counter-party	Relationship	Reason of disposal	Price reference	Other commitments
---------------------	------------------	------------------------------	-----------------	--------------------	-------------------------------	---------------------------	---------------	--------------	--------------------	-----------------	-------------------

None

ATTACHMENT 7 (Related party transactions for purchases and sales amounts exceeding the lower of NT\$100 million or 20 percent of capital stock for the year ended December 31, 2019)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Counter-party	Relationship	Transactions			Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Subsidiary	Sales	\$47,736,335	39 %	Net 60 days	N/A	\$5,937,706	29 %	
UMC GROUP JAPAN	Subsidiary	Sales	3,933,964	3 %	Net 60 days	N/A	608,622	3 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary	Sales	1,209,310	1 %	Net 30 days	N/A	31,334	0 %	
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	805,385	1 %	Month-end 60 days	N/A	85,373	0 %	

UMC GROUP (USA)

Counter-party	Relationship	Transactions			Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Balance	Percentage of total receivables (payable)	Note
UNITED MICROELECTRONICS CORPORATION	Parent company	Purchases	1,504,518	98 %	Net 60 days	N/A	197,973	99 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Associate	Purchases	23,335	2 %	Net 60 days	N/A	1,109	1 %	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	4,937	0 %	Net 60 days	N/A	705	0 %	

UMC GROUP JAPAN

Counter-party	Relationship	Transactions			Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Balance	Percentage of total receivables (payable)	Note
UNITED MICROELECTRONICS CORPORATION	Parent company	Purchases	12,877,097	94 %	Net 60 days	N/A	2,310,603	93 %	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	849,777	6 %	Net 60 days	N/A	186,971	7 %	

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

Counter-party	Relationship	Transactions			Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Balance	Percentage of total receivables (payable)	Note
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	121,132	5 %	Net 45 days	N/A	31,635	8 %	
UMC GROUP JAPAN	Associate	Sales	56,029	2 %	Net 60 days	N/A	11,906	3 %	
UMC GROUP (USA)	Associate	Sales	33,968	1 %	Net 60 days	N/A	4,920	1 %	

UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.

Counter-party	Relationship	Transactions			Details of non-arm's length transaction				
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	166,527	9 %	Net 60 days	N/A	7,738	2 %	

ATTACHMENT 8 (Receivables from related parties with amounts exceeding the lower of NT\$100 million or 20 percent of capital stock as of December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Counter-party	Relationship	Ending balance			Turnover rate (times)	Overdue receivables			
		Notes receivable	Accounts receivable	Other receivables		Amount	Collection status	Amount received in subsequent period	Loss allowance
UMC GROUP (USA)	Subsidiary	\$-	\$5,937,706	\$7,469	7.21	\$-		\$5,945,175	\$-
UMC GROUP JAPAN	Subsidiary	-	608,622	13,671	5.20	40,320	Collection in subsequent period	305,829	11,180

HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.

Counter-party	Relationship	Ending balance			Turnover rate (times)	Overdue receivables			
		Notes receivable	Accounts receivable	Other receivables		Amount	Collection status	Amount received in subsequent period	Loss allowance
FARADAY TECHNOLOGY CORP.	Associate	\$-	RMB 31,635	\$-	5.94	RMB 3,525	Collection in subsequent period	RMB 31,635	\$-

ATTACHMENT 9 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

UNITED MICROELECTRONICS CORPORATION

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2019				Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
UMC GROUP (USA)	USA	IC Sales	16,438	16,438	16,438	100.00			\$77,135	
UNITED MICROELECTRONICS (EUROPE) B.V.	The Netherlands	Marketing support activities	5,421	5,421	9	100.00	142,378	2,803	2,803	
UMC CAPITAL CORP.	Cayman Islands	Investment holding	81,500	81,500	71,663	100.00	3,756,049	342,966	342,966	
GREEN EARTH LIMITED	Samoa	Investment holding	977,000	977,000	977,000	100.00	11,643,953	(5,124,276)	(5,124,276)	
TLC CAPITAL CO., LTD.	Taipei City, Taiwan	Venture capital	4,610,000	4,610,000	397,956	100.00	4,273,912	24,565	24,565	
UMC INVESTMENT (SAMOA) LIMITED	Samoa	Investment holding	1,520	1,520	1,520	100.00	42,022	(886)	(886)	
FORTUNE VENTURE CAPITAL CORP.	Taipei City, Taiwan	Consulting and planning for venture capital	3,440,053	4,160,053	401,734	100.00	4,398,331	(119,265)	(128,750)	
UMC GROUP JAPAN	Japan	IC Sales	60,000	60,000	1	100.00	95,116	47,467	47,467	
UMC KOREA CO., LTD.	Korea	Marketing support activities	550,000	550,000	110	100.00	20,499	979	979	
OMNI GLOBAL LIMITED	Samoa	Investment holding	4,300	4,300	4,300	100.00	590,702	31,312	31,312	
SINO PARAGON LIMITED	Samoa	Investment holding	2,600	2,600	2,600	100.00	121,840	940	940	
BEST ELITE INTERNATIONAL LIMITED	British Virgin Islands	Investment holding	309,102	309,102	664,966	100.00	23,183,005	870,821	870,821	
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Japan	Sales and manufacturing of integrated circuits	64,421,068	9,999,974	116,247	100.00	17,515,233	270,787	270,787	Note
WAVETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	1,894,660	1,707,482	144,948	79.83	260,035	(279,115)	(221,978)	
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	5,956,791	5,956,791	33,998	47.75	(140,850)	(420,302)	(200,700)	
MTIC HOLDINGS PTE. LTD.	Singapore	Investment holding	12,000	12,000	12,000	45.44	18,157	13,131	(24,195)	
UNITECH CAPITAL INC.	British Virgin Islands	Investment holding	21,000	21,000	21,000	42.00	642,660	212,066	89,068	
TRIKNIGHT CAPITAL CORPORATION	Taipei City, Taiwan	Investment holding	2,370,000	1,680,000	237,000	40.00	2,281,631	177,640	71,056	
HSUN CHIEH INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding	336,241	336,241	277,280	36.49	4,378,193	2,643,852	962,222	
YANN YUAN INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding	2,300,000	2,300,000	46,000	30.87	3,829,934	166,098	51,278	
FARADAY TECHNOLOGY CORPORATION	Hsinchu City, Taiwan	Design of application-specific integrated circuit	38,918	38,918	34,240	13.78	1,470,499	(107,860)	(14,859)	

Note : The UNITED SEMICONDUCTOR JAPAN CO., LTD. became consolidated entity on October 1, 2019.

ATTACHMENT 9 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

FORTUNE VENTURE CAPITAL CORP.

Investee company	Address	Main businesses and products	Investment as of December 31, 2019				Investment income (loss) recognized	Note		
			Initial Investment	Ending balance	Beginning balance	Number of shares (thousand)			Percentage of ownership (%)	Carrying amount
TERA ENERGY DEVELOPMENT CO., LTD.	Hsinchu City, Taiwan	Energy Technical Services	\$100,752	\$100,752	\$100,752	18,655	100.00	\$61,238	\$(22,063)	
PURUMFL INC.	Hsinchu City, Taiwan	Chemicals and filtration products & Microcontamination control service	10,000	-	-	1,000	44.45	7,164	(6,380)	(2,835)
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	1,688,630	1,688,630	1,688,630	23,827	33.46	(98,710)	\$(420,302)	(140,654)
WINAICO IMMOBILIEN GMBH	Germany	Solar project	5,900 EUR	5,900 EUR	5,900 EUR	5,900	32.78	-	-	-
UNITED LED CORPORATION HONG KONG LIMITED	Hongkong	Investment holding	22,500 USD	22,500 USD	22,500 USD	22,500	25.14	121,973	(165,087)	(41,502)
CLIENTRON CORP.	Xinbei City, Taiwan	Thin client	277,508	283,439	283,439	13,932	21.90	276,866	249,901	47,315
WAVETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	8,856	8,856	8,856	1,194	0.66	3,424	(279,115)	(1,875)

TILC CAPITAL CO., LTD.

Investee company	Address	Main businesses and products	Investment as of December 31, 2019				Investment income (loss) recognized	Note		
			Initial Investment	Ending balance	Beginning balance	Number of shares (thousand)			Percentage of ownership (%)	Carrying amount
SOARING CAPITAL CORP.	Samoa	Investment holding	900 USD	900 USD	900 USD	900	100.00	\$10,264	\$(3,560)	
HSUN CHIEF CAPITAL CORP.	Samoa	Investment holding	6,000 USD	6,000 USD	6,000 USD	6,000	30.00	122,060	(133,431)	(37,044)
VSENSE CO., LTD.	Taipei City, Taiwan	Medical devices, measuring equipment, reagents and consumables	95,916	95,916	95,916	4,251	25.90	592	(34,224)	(9,110)
NEXPOWER TECHNOLOGY CORP.	Taichung City, Taiwan	Sales and manufacturing of solar power batteries	888,019	888,019	888,019	8,645	12.14	(35,816)	(420,302)	(51,035)
YUNG LI INVESTMENTS, INC.	Taipei City, Taiwan	Investment holding	-	22,581	22,581	-	-	-	(1)	(0)

UMC CAPITAL CORP.

Investee company	Address	Main businesses and products	Investment as of December 31, 2019				Investment income (loss) recognized	Note		
			Initial Investment	Ending balance	Beginning balance	Number of shares (thousand)			Percentage of ownership (%)	Carrying amount
UMC CAPITAL (USA)	USA	Investment holding	200 USD	200 USD	200 USD	200	100.00	552 USD	6 USD	6 USD
TRANSLINK CAPITAL PARTNERS I, L.P.	Cayman Islands	Investment holding	4,036 USD	4,036 USD	4,036 USD	-	10.38	5,742 USD	21,843 USD	1,815 USD

TERA ENERGY DEVELOPMENT CO., LTD.

Investee company	Address	Main businesses and products	Investment as of December 31, 2019				Investment income (loss) recognized	Note		
			Initial Investment	Ending balance	Beginning balance	Number of shares (thousand)			Percentage of ownership (%)	Carrying amount
EVERRICH ENERGY INVESTMENT (HK) LIMITED	Hongkong	Investment holding	750 USD	750 USD	750 USD	750	100.00	\$38,469	\$(7,443)	\$(7,443)
WINAICO IMMOBILIEN GMBH	Germany	Solar project	2,160 EUR	2,160 EUR	2,160 EUR	2,160	12.00	-	-	-
WINAICO SOLAR PROJEKT 1 GMBH	Germany	Solar project	- EUR	1,120 EUR	1,120 EUR	-	-	-	-	-

ATTACHMENT 9 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

WAVETEK MICROELECTRONICS CORPORATION

Investee company	Address	Initial Investment			Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
		Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company			
WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED	Samoa	USD 1,500	USD 1,500	1,500	100.00	\$2,124	\$(6,920)	\$(6,920)		

WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED

Investee company	Address	Initial Investment			Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
		Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company			
WAVETEK MICROELECTRONICS CORPORATION (USA)	USA	USD 60	USD 60	60	100.00	\$2,777	\$237	\$237		

NEXPOWER TECHNOLOGY CORP.

Investee company	Address	Initial Investment			Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
		Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company			
SOCIALNEX ITALIA I S.R.L.	Italy	-	EUR 3,637	-	-	\$-	\$(89,915)	\$(89,915)		

Note : SOCIALNEX ITALIA I S.R.L. was disposed in November 2019.

BEST ELITE INTERNATIONAL LIMITED

Investee company	Address	Initial Investment			Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
		Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company			
INFOSHINE TECHNOLOGY LIMITED	British Virgin Islands	USD 354,000	USD 354,000	-	100.00	\$23,113,468	\$877,676	\$877,676		

INFOSHINE TECHNOLOGY LIMITED

Investee company	Address	Initial Investment			Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
		Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company			
OAKWOOD ASSOCIATES LIMITED	British Virgin Islands	USD 354,000	USD 354,000	-	100.00	\$23,113,468	\$877,676	\$877,676		

OMNI GLOBAL LIMITED

Investee company	Address	Initial Investment			Investment as of December 31, 2019			Net income (loss) of investee company	Investment income (loss) recognized	Note
		Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company			
UNITED MICROTECHNOLOGY CORPORATION (NEW YORK)	USA	USD 950	USD 950	0	100.00	\$30,256	\$20	\$20		
UNITED MICROTECHNOLOGY CORPORATION (CALIFORNIA)	USA	USD 1,000	USD 1,000	0	100.00	35,164	1,583	1,583		
ECP VITA PTE. LTD.	Singapore	USD 9,000	USD 9,000	9,000	100.00	536,647	29,580	29,580		
UMC TECHNOLOGY JAPAN CO., LTD.	Japan	JPY 35,000	JPY 35,000	4	100.00	8,908	(169)	(169)		

ATTACHMENT 9 (Names, locations and related information of investee companies as of December 31, 2019) (Not including investment in Mainland China)
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

GREEN EARTH LIMITED

Investee company	Address	Main businesses and products	Investment as of December 31, 2019				Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)			
UNITED MICROCHIP CORPORATION	Cayman	Investment holding	USD 974,050	USD 974,050	974,050	100.00	\$11,617,342	\$(5,124,809)	

ATTACHMENT 10 (Investment in Mainland China as of December 31, 2019)
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

Investee company	Main businesses and products	Total amount of paid-in capital	Method of investment	Investment flows		Accumulated outflow of investment from Taiwan as of December 31, 2019	Net income (loss) of investee company	Percentage of ownership	Investment income (loss) recognized (Note 2)	Carrying amount as of December 31, 2019	Accumulated inward remittance of earnings as of December 31, 2019
				Outflow	Inflow						
UNITRUTH ADVISOR (SHANGHAI) CO., LTD.	Investment Holding and advisory	\$24,024 (USD 800)	(i) SOARING CAPITAL CORP.	\$-	\$-	(USD 800)	\$(3,529)	100.00%	\$(3,529) (iii)	\$10,058	\$-
EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	22,523 (USD 750)	(ii) EVERRICH ENERGY INVESTMENT (HK) LIMITED	-	-	(USD 750)	7,505	100.00%	7,505 (iii)	37,979	131,892 (USD 4,392)
UNITED LED CORPORATION	Research, manufacturing and sales in LED epitaxial wafers	2,522,520 (USD 84,000)	(i) UNITED LED CORPORATION HONG KONG LIMITED	-	-	(USD 20,250)	(159,094) (37,033)	25.14%	(39,996) (9,310) (RMB) (ii)	106,657 (RMB 24,827)	-
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Sales and manufacturing of integrated circuits	13,768,740 (RMB 3,205,014)	(ii) OAKWOOD ASSOCIATES LIMITED	-	-	(USD 309,102)	872,462 (RMB 203,087)	98.14% (Note 4)	856,193 (RMB 199,300) (ii)	22,349,119 (RMB 5,202,309)	-
UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Design support of integrated circuits	128,880 (RMB 30,000)	(iii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	-	-	-	(RMB 35,412) (RMB 8,243)	98.14%	(RMB 34,750) (RMB 8,089) (iii)	219,139 (RMB 51,010)	-
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Sales and manufacturing of integrated circuits	54,549,723 (RMB 12,697,794)	(i) UNITED MICROCHIP CORPORATION and (iii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	-	-	(USD 28,977,929)	(9,694,611) (2,256,660)	64.95%	(6,296,372) (RMB 1,465,656) (ii)	14,947,752 (RMB 3,479,458)	-
Accumulated investment in Mainland China as of December 31, 2019				\$38,914,917 (USD 1,295,868)	\$-	\$24,024 (USD 800)	\$48,880,582 (USD 1,627,725)			\$124,082,614	

Note 1: The methods for engaging in investment in Mainland China include the following:

- (i) Direct investment in Mainland China.
- (ii) Indirectly investment in Mainland China through companies registered in a third region (Please specify the name of the company in third region).
- (iii) Other methods.

Note 2: The investment income (loss) recognized in current period, the investment income (loss) were determined based on the following basis:

- (i) The financial report was audited by an international certified public accounting firm in cooperation with an R.O.C. accounting firm.
- (ii) The financial statements were audited by the auditors of the parent company.
- (iii) Others.

Note 3: Initial investment amounts denominated in foreign currencies are translated into New Taiwan Dollars using the spot rates at the financial report date.

Note 4: The Company indirectly invested in HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. via investment in BEST ELITE INTERNATIONAL LIMITED, an equity investee. The investment has been approved by the Investment Commission, MOEA in the total amount of USD 383,569 thousand. As of December 31, 2019, the amount of investment has been all remitted.

Note 5: The investment to UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. (USCXM) from HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. and indirectly invested in USCXM via investment in GREEN EARTH LIMITED. The consent to invest in USCXM's investment has been approved by the Investment Commission, MOEA in the total amount of USD 1,222,356 thousand. As of December 31, 2019, the amount of investment has been all remitted.

The Company and Its Affiliated Enterprises Have Not Experienced Any Financial Difficulties During the Most Recent Year up to the Publication Date.

United Microelectronics Corporation



Representative: Stan Hung



Stan Hung

UMC