

# United Microelectronics Corporation 2022 Annual Report

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<https://www.umc.com>

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

*Compound*

3DIC

*eNVM*

ULP/ULL  
Logic

BCD

*eHV*

RFSOI

Annual Report

2022

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NYSE : UMC

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J.P. Morgan Depository Receipts  
383 Madison Avenue, 11th Floor  
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Outside the USA:1 (651) 453 2128  
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Ticker Search Code: UMC

**Euro Exchangeable Bond Exchange  
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EB Search Code: ISIN XS2358241243

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**Corporate Website**

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**EMPOWER THE FUTURE**

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# Letter to Shareholders

After two years of prosperous growth, the semiconductor industry experienced a turn in sentiment starting in the first half of 2022. The cyclical nature of our industry as well as geopolitical developments led to a sharp slowdown consumer end-market demand. Despite the weakened business environment, UMC delivered another year of outstanding results thanks to our employees, partners, and customers. In 2022, our full year revenue increased to NT\$278.7 billion as operating income eclipsed NT\$100 billion. Over the past several years, we focused on enhancing our product mix, technology offering, and cost competitiveness, efforts which have significantly improved profitability. We are confident that UMC will demonstrate our resilience through this period of market volatility. Our commitment to sustainable business practices was once again recognized by the Dow Jones Sustainability Indices (DJSI), which ranked UMC first among semiconductor foundry peers. We strive to be a responsible company that cares about our employees, our communities, and our planet. UMC will also continue to enhance our differentiated specialty technologies, diversify our manufacturing footprint, and strengthen partnerships with key customers in order to maximize sustainable returns for our shareholders.

## 2022 Business Overview

In 2022, UMC shipped a total of 9.9 million 8-inch equivalent wafers, up 0.8% from a year earlier. Overall utilization rate across our fabs exceeded 100%. Full-year revenue increased 30.8% to a record high of NT\$278.7 billion and operating income exceeded NT\$100 billion. Gross margin was lifted to 45.1% while operating margin was 37.4%.

Profit attribute to shareholders of the parent company rose 56.3% to NT\$87.2 billion, with full-year earnings per share of NT\$7.09. Revenue from our 22/28nm portfolio was up 56% compared with 2021, driven by strong demand for OLED display drivers and image signal processors. Our automotive business also delivered impressive growth in 2022, with revenue increasing 82% year-on-year to account for 9% of total sales. Capital expenditure for the year was US\$2.7 billion, most of which was for the expansions of Fab 12A in Tainan, Taiwan and Fab 12i in Singapore. The remainder was used in the optimization of product mix across all fabs.

## Technology Leadership and Development

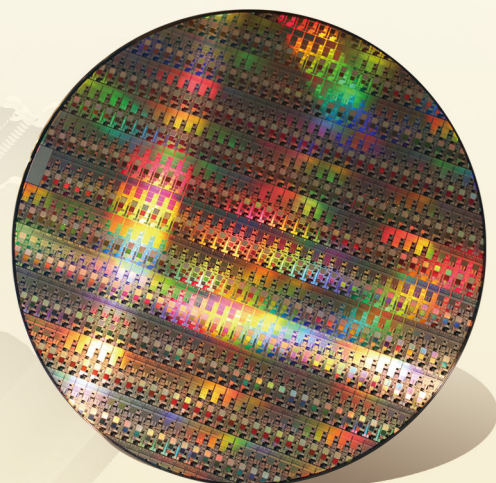
UMC is a leader in logic and specialty process technology, providing foundry solutions for all major segments of the semiconductor industry. In 2022, UMC invested NT\$13 billion in research and development to enhance our technology offering for the 5G, AI, IoT, and automotive markets. In our logic portfolio, our 28nm high performance computing (28HPC+) technology was adopted for image signal processors (ISP) used in a top-end 200-megapixel mobile image sensor, which has successfully entered production. In addition, our 28HPC+ millimeter wave (mmWave) solution has been verified, tailored for 5G mmWave devices. For our 22nm logic platform, the automotive Grade-1 design specification is ready, and has completed reliability verification. We are also developing our 22nm ISP platform, which will offer superior power efficiency and performance compared with the existing 28nm solution in the market. Suitable for a broad range of high-end applications, our

14nm FinFET compact (14FFC) process is available for customers seeking a high-performance and power efficient solution. In 2022, UMC continued to strengthen our leadership in specialty process technologies. Leading the industry in manufacturing 12-inch RFSOI wafers, UMC's share of the RFSOI market increased from 2021 to 18%. To target future high-frequency applications above 40GHz, we have started development of 22nm RFSOI technology. Ranging from 180nm to 22nm, our complete embedded non-volatile memory (eNVM) solutions cater to a wide range of applications, and a customer's magneto-resistive

random-access memory (MRAM) product for aerospace applications has entered trial production. For our industry-leading embedded high voltage (eHV) platform, our 22nm 25V low-temperature polycrystalline oxide (LTPO) OLED display driver has been verified and is expected to enter trial production in 2023. For power management solutions, we have completed the silicon model, design specification, and automotive intellectual property blocks for our 0.11-micron bipolar-CMOS-DMOS (BCD) platform. Lastly, our wafer-to-wafer hybrid bonding solution has been verified by a customer and will enter trial production in 2023.

The Netherlands

China  
Singapore  
Korea  
Taiwan  
Japan



# To unleash the power of technology for a better world.

## Intellectual Property

Intellectual property (IP) is at the core of business growth and corporate competitiveness for the semiconductor industry. As industry players vie for technology leadership, UMC strives to protect and leverage our IP assets by linking our patent and trade secret protection mechanism with the Company's business strategy. In 2022, we added 348 patents to our portfolio, including 199 in the United States, 37 in Taiwan, and 108 in China, bringing the cumulative number of patents to 14,771. As trade secret protection become increasingly critical, UMC has stepped up internal compliance training and established a robust IP management system. In 2022, UMC achieved Taiwan Intellectual Property Management System (TIPS) certification for the second year, with our certification level improving from A to AA, underscoring our unwavering commitment to IP and corporate governance best practices.

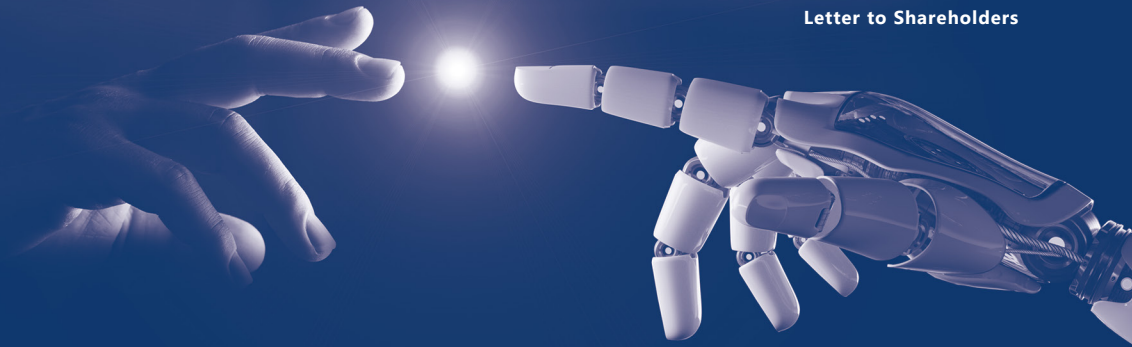
## Corporate Sustainability

Driven by our sustainability vision, UMC strives to balance business needs with the advancement of our environment, social, and governance (ESG) responsibilities. In 2022, our climate targets were verified by the Science Based Targets Initiative, an important milestone in our roadmap to achieve net zero emissions by 2050. We also introduced an initiative during the year to assist suppliers with greenhouse gas emissions inventory and management in order to accelerate reduction of emissions in the supply chain.

## Honors and Awards

In 2022, we were honored with numerous awards and recognitions domestically and internationally for our achievements in sustainable development, information disclosure, corporate governance, environmental protection, and customer service. These include CDP's "A List" for climate change and water security, "A" ESG rating by MSCI, and "top 5%" ranking in the Taiwan Stock Exchange's Corporate Governance Evaluation.





## Outlook

Driven by the megatrends of 5G, Artificial Intelligence of Things (AIoT), and electrification of vehicles, we remain positive on the long-term demand for semiconductor content. In the near term, we expect challenges to persist amid the cyclical industry downturn and geopolitical environment; yet, it is also an opportune time for UMC to look inward and adjust our pace where necessary. We will continue to innovate and differentiate our specialty technology offering to increase UMC's competitiveness as well as enabling our customers to succeed in their markets. Amid the current geopolitical climate, we are increasing the

flexibility of how we allocate capacity while expanding our geographically diverse manufacturing base to fulfill our customers' wafer demand. We are planning ahead to stay ahead, ensuring UMC is well positioned to take advantage of the next industry upturn. Lastly, we will press ahead with our ESG initiatives and demonstrate our commitment to a sustainable future.

In closing, we are deeply grateful to all our shareholders for your ongoing support of UMC. We are excited for what is to come as we strive towards our vision of unleashing the power of technology for a better world.



President: SC Chien

Chairman: Stan Hung

President: Jason Wang

# Corporate Profile

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## Corporate Profile and Date of Establishment

Founded on May 22, 1980 as Taiwan's first semiconductor company, UMC has grown to become 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/Mixed-Signal, embedded High-Voltage, embedded Non-Volatile-Memory, RFSOI and BCD etc., and IATF-16949 automotive manufacturing certification for all its manufacturing facilities. UMC operates 12 fabs that are strategically located throughout Asia with a maximum capacity of approximately 850,000 8-inch equivalent wafers per month. The company has offices in Taiwan, China, Europe, United States, Japan, Korea and Singapore.

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 with approximately 20,000 employees worldwide 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 in Tainan, Taiwan has been in volume production for customer products since 2002 and is currently manufacturing

products down to 14nm. UMC's second 12-inch fab, Fab 12i, is located in Singapore. This facility is the company's specialty technology center that provides highly specialized processes on 12-inch manufacturing to serve a diverse range of product applications. United Semi, located in Xiamen, China, was established as 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 over 40 years of 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

<b>May, 1980</b>	Established
<b>July, 1985</b>	Officially listed on the TWSE
<b>July, 1995</b>	Transformed into a pure-play foundry company
<b>July-September, 1995</b>	Formed joint ventures with 11 IC design houses from North America to establish three foundry companies
<b>September, 1995</b>	8-inch fab started mass production
<b>January, 1996</b>	0.35-micron technology process started production
<b>October, 1997</b>	0.25-micron technology process started production
<b>April, 1998</b>	Acquired Holtek Semiconductor fab (now known as Fab 8E)
<b>December, 1998</b>	Acquired Nippon Steel Semiconductor Corp. fab (renamed UMCJ in 2001)
<b>March, 1999</b>	0.18-micron technology process started production
<b>November, 1999</b>	Official construction began for UMC's 12-inch fab in Tainan Science Park
<b>January, 2000</b>	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)
<b>March, 2000</b>	Manufactured first IC using all-copper interconnects
<b>May, 2000</b>	Manufactured first 0.13-micron process IC
<b>September, 2000</b>	Listed on the New York Stock Exchange
<b>December, 2000</b>	Groundbreaking for the world's most advanced 12-inch fab in Singapore (UMCi)
<b>January, 2003</b>	UMCi announced 12-inch fab equipment move-in
<b>March, 2003</b>	Manufactured the first 90nm process IC
<b>March, 2004</b>	UMCi started mass production
<b>May, 2004</b>	90nm process was fully verified and started mass production
<b>July, 2004</b>	UMC acquired SiS Microelectronics (now known as Fab 8S)
<b>December, 2004</b>	Acquired its subsidiary UMCi and changed its name to Fab 12i
<b>June, 2005</b>	Manufactured the first 65nm customer IC



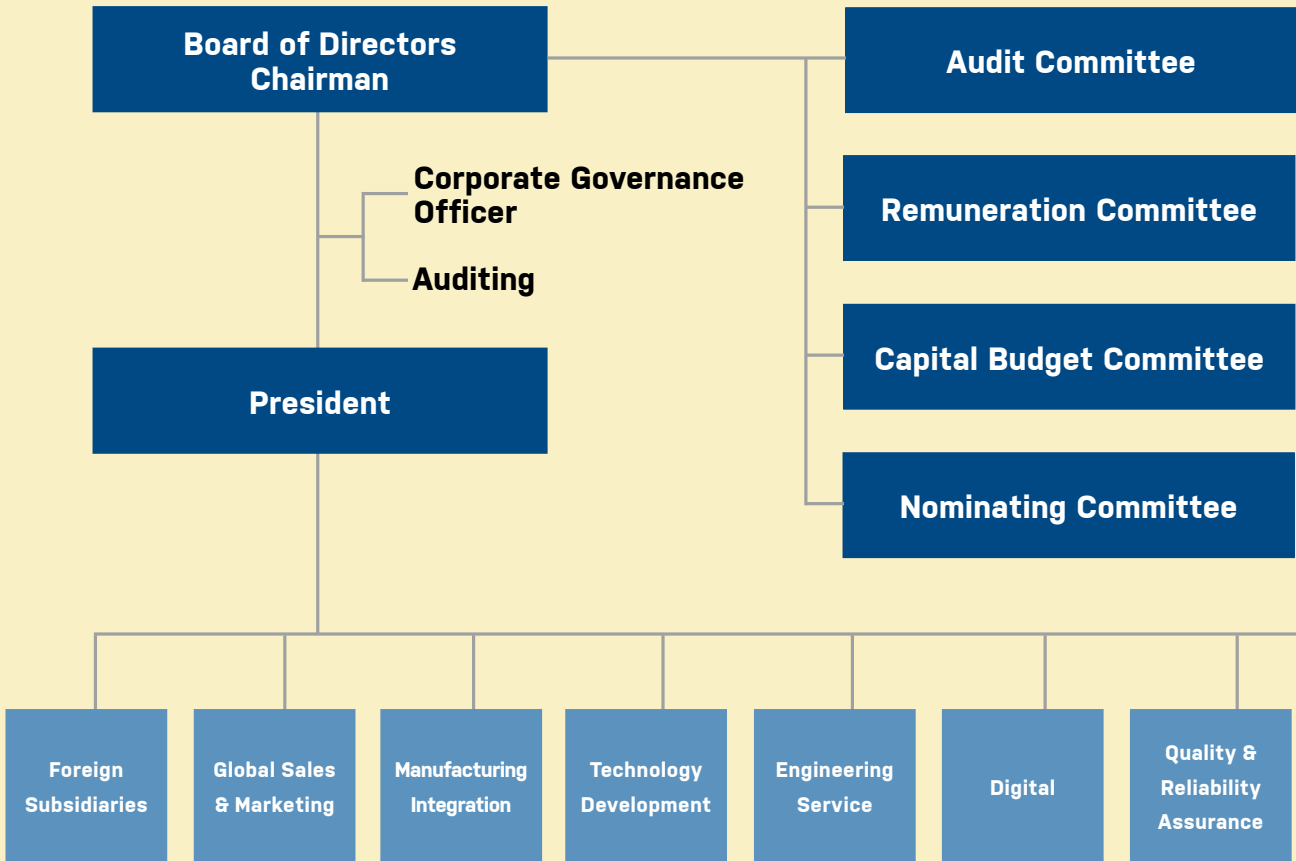
<b>August, 2005</b>	90nm wafer shipments exceeded 100,000
<b>June, 2006</b>	Became the first semiconductor manufacturer in the world to complete QC-080000 IECQ HSPM certification for all company-wide sites
<b>November, 2006</b>	Manufactured the first 45nm IC
<b>January, 2007</b>	Expanded production site and completed a new R&D building in Tainan Science Park
<b>September, 2008</b>	Listed as a constituent stock by Dow Jones Sustainability Indexes
<b>October, 2008</b>	Announced foundry industry's first 28nm SRAMs
<b>April, 2009</b>	Delivered customer ICs produced on its high performance 40nm logic technology
<b>December, 2009</b>	Announced completion of tender offer to UMC Japan
<b>December, 2010</b>	12-inch fab Fab 12A Phase 3 began production
<b>October, 2011</b>	28nm process began pilot production
<b>May, 2012</b>	Groundbreaking ceremony for Fab 12A's new Phase 5 & 6 in Tainan Science Park
<b>March, 2013</b>	Acquired HeJian Fab based in Suzhou, China
<b>May, 2013</b>	Established its Specialty Technology Center of Excellence in Singapore
<b>August, 2014</b>	Joined Fujitsu's new foundry company
<b>March, 2015</b>	Groundbreaking of United Semi (Xiamen) Fab
<b>November, 2016</b>	Held grand opening ceremony for new 12-inch fab in Xiamen, China and the fab started mass production
<b>February, 2017</b>	Entered mass production for 14nm customer ICs
<b>June, 2018</b>	Board approved 100% acquisition of MIFS fab in Japan from Fujitsu
<b>October, 2019</b>	Acquired 100% of MIFS 300mm fab, renamed USJC
<b>May, 2020</b>	Celebrated 40th Anniversary
<b>April, 2021</b>	UMC partnered with customers for capacity expansion at 300mm Fab 12A P6 in Tainan
<b>June, 2021</b>	UMC joined RE100 and pledged net zero emissions by 2050
<b>February, 2022</b>	UMC announced expansion of Fab 12i in Singapore (P3 facility)
<b>December, 2022</b>	UMC selected as a DJSI global component for 15th consecutive year



# Corporate Governance Report

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# 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  
& Operation  
Planning

Manufacturing  
Resource  
Integration

Finance

Corporate  
Development

Legal, IP &  
Compliance

Human  
Resources

Public Affairs  
and Corporate  
Communications

New Business  
Development

#### **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.

#### **Public Affairs and Corporate Communication**

- Responsible for communications with stakeholders and the media, and management of UMC's corporate image.

#### **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 Age	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 62 years old	2021.07.07 <2008.07.16 >	2024.07.06	49,301,452	0.40	52,601,452	0.42
Independent Director	R.O.C.	Wenyi Chu	Female 56 years old	2021.07.07 <2015.06.09>	2024.07.06	0	0	0	0
Independent Director	R.O.C.	Lih J. Chen	Male 76 years old	2021.07.07 <2018.06.12>	2024.07.06	0	0	0	0
Independent Director	R.O.C.	Jyuo-Min Shyu	Male 69 years old	2021.07.07 <2018.06.12>	2024.07.06	0	0	0	0
Independent Director	R.O.C.	Kuang Si Shiu	Male 71 years old	2021.07.07 <2021.07.07>	2024.07.06	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; Chairman, UMC Capital Corp.; Director, Triknight Capital Corporation; Director, United Microelectronics (Europe) B.V.; Executive Director, UnitedDS Semiconductor (Shandong) Co., Ltd.
0	0	Professor, Department of Business Administration, National Taiwan University Deputy Vice President for Academic Affairs, National Taiwan University Ph.D. of London Business School	Independent Director, Winmate Inc.
0	0	Academician, Academia Sinica Distinguished Chair Professor, National Tsing Hua University President, National Tsing Hua University Deputy Minister, National Science Council 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 Dean, College of Electrical Engineering and Computer Science, National Tsing Hua University Professor, Department of Computer Science, National Tsing Hua University Ph.D. in Electrical Engineering and Computer Science, University of California, Berkeley	Independent Director, Qisda Corporation; Independent Director, Far EasTone Telecommunications Co., Ltd.; Director, Iridium Medical Technology Co., Ltd.; Director, GeoThings, Inc.; Director, Alpha Ring Asia Inc.
0	0	Chairman & President, Mega Financial Holding Co., Ltd. Chairman & President, Mega International Commercial Bank Co., Ltd. Chairman, Hua Nan Financial Holdings Co., Ltd. Chairman, Hua Nan Commercial Bank Ltd. Chairman, Land Bank of Taiwan Co., Ltd. Executive Vice President, Chiao Tung Bank Co., Ltd. Master in Business Administration, Indiana University	Independent Director, Yuanta Financial Holdings Co., Ltd.; Independent Director, Yuanta Commercial Bank Co., Ltd.

**Directors' Information (Continue)**

Title	Nationality /Place of Incorporation	Name	Gender Age	Date Elected (Date Assumed) <Date First Elected>	Term Expires	Shareholding When Elected		Present Shareholding	
						Common Shares	%	Common Shares	%
Independent Director	R.O.C.	Wen-Hsin Hsu	Female 46 years old	2021.07.07 <2021.07.07>	2024.07.06	0	0	0	0
Director	R.O.C.	Ting-Yu Lin	Male 61 years old	2021.07.07 <2009.06.10>	2024.07.06	12,547,222	0.10	12,547,222	0.10
Director	R.O.C.	Hsun Chieh Investment Co., Ltd.	N/A	2021.07.07 <1995.06.21>	2024.07.06	441,371,000	3.55	441,371,000	3.53
	R.O.C.	Representative: SC Chien	Male 65 years old	2021.07.07 <2016.03.01>	2024.07.06	9,294,648	0.07	12,594,648	0.10
Director	R.O.C.	Silicon Integrated Systems Corp.	N/A	2021.07.07 <2005.06.13>	2024.07.06	285,380,424	2.30	266,580,424	2.13
	U.S.A.	Representative: Jason Wang	Male 60 years old	2021.07.07 <2015.06.09>	2024.07.06	18,715,000	0.15	22,015,000	0.18

Note 1: Present shareholding figures are actual number of shares held on January 31, 2023.

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.

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

Note 5: Presidents and Chairman are not the same person, spouses or relatives within the first degree of kinship.



Spouse & Minor Shareholding		Experience (Education)	Selected Current Position at UMC and Other Companies
Common Shares	%		
0	0	Professor, Department of Accounting, National Taiwan University Associate Dean, International affairs, College of Management School, National Taiwan University Director, Global MBA, National Taiwan University Director, Case Center, National Taiwan University Secretary General, Taiwan Accounting Association Ph.D. in Accounting & Finance, Lancaster University	Independent Director, Unitech Printed Circuit Board Corp.; Independent Director, ANT Precision Industry Co., Ltd.; Director, Universal Venture Capital Investment Corporation; Director, Taiwan Insurance Guaranty Fund
0	0	Director, UMC Master in International Finance, Meiji University	Director, Unimicron Technology Corp.; Chairman, Sunrox International, Inc.; Chairman, Sunrox Industries, Inc.
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, Unimicron Technology Corp.; 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, UMC Group (USA); Director, United Microelectronics (Europe) B.V.; Director, UMC Capital Corp.; Director, United Microtechnology Corporation (California); Director, eJoule International Limited

## Major Shareholders of UMC's Institutional Shareholders

Name of Institutional Shareholders	Major Shareholders (Holding Percentage)
Hsun Chieh Investment Co., Ltd.	Shieh Yong Investment Co., Ltd. (63.51%); UMC (36.49%)
Silicon Integrated Systems Corp.	UMC (19.02%); Hsun Chieh Investment Co., Ltd. (4.80%); Hsing-Sen Liu (1.38%); Lung-Hsiung Yeh (1.28%); Vanguard Emerging Markets Stock Index Fund, a series of Vanguard International Equity Index Funds (1.19%); JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds (1.16%); Standard Chartered Bank Limited as custodian of Credit Suisse International (0.55%); Cong-Ming Zhuang (0.49%); Vanguard Fiduciary Trust Company Institutional Stock Market Index Trust II (0.47%); Kao-Huang Lin (0.37%)

## Major Shareholders of UMC's Major Institutional Shareholders

Name of Institutional Shareholders	Major Shareholders (Holding Percentage)
Shieh Yong Investment Co., Ltd.	Unimicron Technology Corp. (16.67%); Silicon Integrated Systems Corp. (16.67%); Novatek Microelectronics Corp. (15.15%); Yann Yuan Investment Co., Ltd. (12.20%); Faraday Technology Corporation (12.12%); King Yuan Electronics Co., Ltd. (7.58%)

## Directors' Professional Qualification & Independent Directors' Independence Information:

Name	Criteria Professional Qualification & Experience (Note 1)	Independence Status	Number of Companies also Serves as Independent Director for
Stan Hung	<ul style="list-style-type: none"> <li>Financial accounting and strategic management</li> <li>Electronics-related industrial experience</li> </ul>		0
Wenyi Chu	<ul style="list-style-type: none"> <li>Financial accounting and strategic management</li> <li>Electronics-related industrial experience</li> </ul>	Meet the independence criteria (Note 2)	1
Lih J. Chen	<ul style="list-style-type: none"> <li>Engineering technology and organizational leadership</li> <li>Electronics-related industrial experience</li> </ul>	Meet the independence criteria (Note 2)	0
Jyuo-Min Shyu	<ul style="list-style-type: none"> <li>Engineering technology and organizational leadership</li> <li>Electronics-related industrial experience</li> </ul>	Meet the independence criteria (Note 2)	2
Kuang Si Shiu	<ul style="list-style-type: none"> <li>Financial accounting and organizational leadership</li> <li>Banking Finance and business policy-making</li> </ul>	Meet the independence criteria (Note 2)	2
Wen-Hsin Hsu	<ul style="list-style-type: none"> <li>Financial accounting and corporate sustainability</li> <li>Electronics-related industrial experience</li> </ul>	Meet the independence criteria (Note 2)	2
Ting-Yu Lin	<ul style="list-style-type: none"> <li>Financial accounting and strategic management</li> <li>Electronics-related industrial experience</li> </ul>		0
SC Chien	<ul style="list-style-type: none"> <li>Engineering technology and organizational leadership</li> <li>Electronics-related industrial experience</li> </ul>		0
Jason Wang	<ul style="list-style-type: none"> <li>Financial accounting and organizational leadership</li> <li>Electronics-related industrial experience</li> </ul>		0

The Diversity & Independence of the Board of Directors:

(1) The Diversity of the Board of Directors:

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 also established criteria to ensure the diversity of the Board members. There are currently two seats reserved for female directors. Based on our policy of gender equality, UMC will increase the female director seats progressively. The tenures of independent directors are also diversified; there is one director who has served for seven years, two directors for four years and two directors who were newly elected on July 7, 2021. The board of UMC is composed of members with diversified backgrounds of industry, government and academia. The experiences of Board members include the president of a national university, a fellow of Academia Sinica, the Minister of Science and Technology, the president of ITRI, financial experts in finance, accounting and strategy management fields, and professionals from the semiconductor industry and ICT business administration. The directors satisfy basic criteria and professionalism requirements, and through activities of the sub-committees, can also contribute their experiences to supervise and govern issues related to corporate governance, environmental sustainability, corporate social responsibility, legal compliance and human rights protection. 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: [https://www.umc.com/en/IR\\_Director/directors\\_information](https://www.umc.com/en/IR_Director/directors_information).

(2) The Independence of the Board of Directors:

The UMC Board of Directors comprises of nine members, including five seats for independent directors and one for a non-executive director; three serve as administrative directors. More than one half of the director seats are independent directors.

(3) There are two seats reserved for female directors, and more than one half of the director seats are independent directors for the Board. UMC will enhance diversity and independence of the Board continuously based on the status quo.

Note 1: The Company's Financial Experts of the Audit Committee are independent directors Wenyi Chu, Kuang Si Shiu and Wen-Hsin Hsu. All directors are not under any condition pursuant to Article 30 of the Company Act. Please refer to Page 16-19 of the Annual Report & the Company's website: [https://www.umc.com/en/IR\\_Director/directors\\_information](https://www.umc.com/en/IR_Director/directors_information) for Directors' relevant industrial experience.

Note 2: The Company's independent directors, their spouses and relatives within the second degree of kinship are not directors, supervisors or employees of the Company or its affiliates; the Company's independent directors, their spouses and relatives within the second degree of kinship (or in the name of other persons) do not own the Company's outstanding shares, nor are directors, supervisors or employees of companies which have specific relationship with the Company; the Company's independent directors, their spouses and relatives within the second degree of kinship do not provide the Company and its affiliates with services of business, legal affairs, finance and accounting in the past two years to get payment.

## 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	52,601,452	0.42	1,269,435	0.01
President	R.O.C.	SC Chien	Male	2004.11.23	12,594,648	0.10	0	0
President	U.S.A.	Jason Wang	Male	2014.12.24	22,015,000	0.18	0	0
Executive Vice President	R.O.C.	Ming Hsu	Male	2015.06.08	4,618,000	0.04	0	0
Senior Vice President	R.O.C.	Oliver Chang	Male	2020.02.26	2,740,589	0.02	0	0
Senior Vice President & Chief Financial Officer	R.O.C.	Chitung Liu	Male	2005.10.20	3,850,217	0.03	150,000	0.00
Senior Vice President & General Counsel	R.O.C.	Lucas S Chang	Male	2018.01.01	1,500,000	0.01	0	0
Vice President	R.O.C.	TS Wu	Male	2013.01.01	2,449,809	0.02	304	0.00
Vice President	R.O.C.	C C Hsu	Male	2013.01.01	3,141,068	0.03	0	0
Vice President	R.O.C.	M C Lai	Male	2015.03.30	3,215,863	0.03	0	0
Vice President	R.O.C.	S F Tzou	Male	2013.01.01	1,374,108	0.01	0	0
Vice President	R.O.C.	Osbert Cheng	Male	2014.08.01	1,349,000	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; Chairman, UMC Capital Corp.; Director, Triknight Capital Corporation; Director, United Microelectronics (Europe) B.V.; Executive 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, Unimicron Technology Corp.; Director, UMC Capital Corp.
President, UMC Business Administration, San Jose State University	Director, Fortune Venture Capital Corp.; Director, TLC Capital Co., Ltd.; Director, UMC Group (USA); Director, United Microelectronics (Europe) B.V.; Director, UMC Capital Corp.; Director, United Microtechnology Corporation (California); Director, eJoule International Limited
Executive Vice President, UMC Master in Science Electrical Engineering, University of Southern California	None
Senior Vice President, UMC Bachelor in Physics, Chinese Culture University	Director, Chipbond Technology Corporation
Senior Vice President & Chief Financial Officer, UMC EMBA in Business Administration, National Taiwan University	Chairman, HeJian Technology (Suzhou) Co., Ltd.; Chairman, United Semiconductor (Xiamen) Co., Ltd.; Director, Fortune Venture Capital Corp.; Director, TLC Capital Co., Ltd.; Director, Unimicron Technology Corp.; Director, Novatek Microelectronics Corp.; Director, Yann Yuan Investment Co., Ltd.; Director, UMC Group (USA); Director, Green Earth Limited; Director, ECP Vita Pte. Ltd.; Director, UMC Capital Corp.; Director, United Microchip Corporation
Senior Vice President & General Counsel, UMC J.D. in Law, University of Santa Clara	Independent 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	Chairman, Wavetek Microelectronics Corporation; Director, Wavetek Microelectronics Investment (Samoa) Limited; Director, HeJian Technology (Suzhou) Co., Ltd.
Vice President, UMC Master in Materials Science & Engineering, National Tsing Hua University	Chairman, United Semiconductor Japan Co., Ltd.
Vice President, UMC Ph.D. in Electrical Engineering, National Chiao Tung University	None

**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.	G C Hung	Male	2015.01.28	1,029,791	0.01	0	0
Vice President	R.O.C.	Steven Hsu	Male	2016.03.16	1,104,000	0.01	2,889	0.00
Vice President	R.O.C.	Wenchi Ting	Male	2017.01.03	490,000	0.00	0	0
Vice President	R.O.C.	Jerry CJ Hu	Male	2013.04.02	2,334,000	0.02	0	0
Vice President	R.O.C.	Y S Shen	Male	2014.01.13	2,039,000	0.02	0	0
Vice President	R.O.C.	Steven S Liu	Male	2017.04.24	2,790,000	0.02	0	0
Vice President	R.O.C.	SR Sheu	Male	2008.07.16	2,507,892	0.02	786,017	0.01
Vice President	R.O.C.	M L Liao	Male	2008.07.16	4,081,809	0.03	152,138	0.00
Vice President	R.O.C.	S S Hong	Male	2013.01.01	1,355,406	0.01	0	0
Vice President	R.O.C.	Francia Hsu	Female	2016.03.16	1,966,000	0.02	7,000	0.00
Vice President	R.O.C.	Mindy Lin	Female	2018.05.14	2,074,925	0.02	781,408	0.01
Vice President	R.O.C.	Linwu Kuo	Male	2021.06.15	0	0	0	0
Vice President & Chief Human Resources Officer	R.O.C.	Eric Chen	Male	2011.02.14	2,029,000	0.02	0	0

Note 1: Those who currently serve in their respective positions on the publication date of the Annual Report.

Note 2: Present shareholding figures are actual number of shares held on January 31, 2023.

Note 3: Shares under Trust with Discretion Reserved are not included in present shareholding figures of Chitung Liu and G C Hung.

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

Note 5: Managers are not spouses or relatives within the second degree of kinship of other managers.

Note 6: Managers' election date is the same date they assumed their positions.

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
Vice President, UMC Master in Chemical Engineering, National Taiwan University	Director, Wavetek Microelectronics Corporation
Vice President, UMC Master in Electronic Engineering, National Chiao Tung University	None
Vice President, UMC Ph.D. in Computer Information Science, University of Texas at Austin	None
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 Material Science & Engineering, National Tsing Hua University	None
Vice President, UMC Master in Industrial Engineering, National Chiao Tung University	Director, United Semiconductor Japan Co., Ltd.
Vice President, UMC Master in Business Administration, University of Leicester	None
Vice President, UMC Master in European Studies, University of Katholieke Universiteit Leuven	Independent Director, Shine Trend International Multimedia Technology Co., Ltd; Supervisor, Master Transportation Bus Manufacturing Ltd.
Vice President & Chief Human Resources Officer, UMC EMBA in Finance, National Taiwan University	Director, Best Elite International Limited

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

### Directors' Remuneration (Including Independent Directors')(Note 1)

Title	Name	Director's Remuneration								Total Remuneration and (A+B+C+D) as a % of 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										
Director	Ting-Yu Lin										
Director	Hsun Chieh Investment Co., Ltd.	0	0	0	0	20,000	20,000	480	780	20,480	20,780
	Representative: SC Chien									0.02%	0.02%
Director	Silicon Integrated Systems Corp.										
	Representative: Jason Wang										
Independent Director	Wenyi Chu										
Independent Director	Lih J. Chen										
Independent Director	Jyuo-Min Shyu	0	0	0	0	25,000	25,000	6,850	6,850	31,850	31,850
										0.04%	0.04%
Independent Director	Kuang Si Shiu										
Independent Director	Wen-Hsin Hsu										

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.

Note 1: All directors' remuneration (including independent directors) is authorized to the board of directors according to their participation in the company's operations, contribution, and in consideration of general payment in the same industry.

Note 2: Including various bonuses, incentives and equity rewards (such as restricted stock award for employees), recognized salary expenses, etc.



In Thousand NT\$

Compensation Earned by a Director Who Is an Employee of UMC or UMC's Consolidated Entities									Total Compensation and (A+B+C+D+E+F+G) as a % of Net Income (%)	Compensation from Other Non-Consolidated Entities Invested by the Company
Base Compensation Bonuses and Special Expenses etc. (E)(Note 2)		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		The Company	Companies in the Consolidated Financial Statements	
				Cash	Stock	Cash	Stock			
443,675	529,077	314	314	276,446	0	325,230	0	740,915 0.85%	875,401 1.00%	16,360
0	0	0	0	0	0	0	0	31,850 0.04%	31,850 0.04%	None

**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	All Consolidated Entities and Non-consolidated Affiliates
Lower than NT\$1,000,000	SC Chien, Jason Wang	SC Chien, Jason Wang		
NT\$1,000,000 (inclusive)~ NT\$2,000,000 (exclusive)				
NT\$2,000,000 (inclusive)~ NT\$3,500,000 (exclusive)				
NT\$3,500,000 (inclusive)~ NT\$5,000,000 (exclusive)				
NT\$5,000,000 (inclusive)~ NT\$10,000,000 (exclusive)	Stan Hung, Ting-Yu Lin, Hsun Chieh Investment Co., Ltd., Silicon Integrated Systems Corp., Wenyi Chu, Lih J. Chen, Jyuo-Min Shyu, Kuang Si Shiu, Wen-Hsin Hsu	Stan Hung, Ting-Yu Lin, Hsun Chieh Investment Co., Ltd., Silicon Integrated Systems Corp., Wenyi Chu, Lih J. Chen, Jyuo-Min Shyu, Kuang Si Shiu, Wen-Hsin Hsu	Ting-Yu Lin, Hsun Chieh Investment Co., Ltd., Silicon Integrated Systems Corp., Wenyi Chu, Lih J. Chen, Jyuo-Min Shyu, Kuang Si Shiu, Wen-Hsin Hsu	Ting-Yu Lin, Hsun Chieh Investment Co., Ltd., Silicon Integrated Systems Corp., Wenyi Chu, Lih J. Chen, Jyuo-Min Shyu, Kuang Si Shiu, Wen-Hsin Hsu
NT\$10,000,000 (inclusive)~ NT\$15,000,000 (exclusive)				
NT\$15,000,000 (inclusive)~ NT\$30,000,000 (exclusive)				
NT\$30,000,000 (inclusive)~ NT\$50,000,000 (exclusive)				
NT\$50,000,000 (inclusive)~ NT\$100,000,000 (exclusive)				
NT\$100,000,000 or More			Stan Hung, SC Chien, Jason Wang	Stan Hung, SC Chien, Jason Wang
Total	11	11	11	11



**Remuneration Paid to Directors (Including Independent Directors), Presidents and Vice Presidents (Continue)****Compensation Paid to Presidents and Vice Presidents(Note 1)**

Title	Name	Salary(A)		Severance Pay and Pensions(B)		Bonuses and Special Expenses etc. (C)(Note 2)	
		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						
Vice President	TS Wu						
Vice President	C C Hsu						
Vice President	M C Lai						
Vice President	S F Tzou						
Vice President	Osbert Cheng	103,124	121,897	2,782	2,782	1,313,931	1,433,809
Vice President	G C Hung						
Vice President	Steven Hsu						
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	Mindy Lin						
Vice President	Linwu Kuo						
Vice President & Chief Human Resources Officer	Eric Chen						

Note 1: All executive officers' remuneration is calculated by referencing the Company's operation results, future risks, corporate strategies, industry trends, and also individual contribution, and will be reviewed and approved by 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 interest of stakeholders.

Note 2: Including various bonuses, incentives and equity rewards (such as restricted stock award for employees), recognized salary expenses, etc.

In Thousand NT\$

The Company		Companies in the Consolidated Financial Statements		Total Compensation and (A+B+C+D) as a % of Net Income (%)	Compensation from Other Non-Consolidated Entities Invested by the Company
Cash	Stock	Cash	Stock		
936,900	0	1,045,310	0	2,356,737 2.70%	2,603,798 2.99%
					18,190

**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	All Consolidated Entities and Non-consolidated Affiliates
Lower than NT\$1,000,000		
NT\$1,000,000 (inclusive)~ NT\$2,000,000 (exclusive)		
NT\$2,000,000 (inclusive)~ NT\$3,500,000 (exclusive)		
NT\$3,500,000 (inclusive)~ NT\$5,000,000 (exclusive)		
NT\$5,000,000 (inclusive)~ NT\$10,000,000 (exclusive)		
NT\$10,000,000 (inclusive)~ NT\$15,000,000 (exclusive)		
NT\$15,000,000 (inclusive)~ NT\$30,000,000 (exclusive)		
NT\$30,000,000 (inclusive)~ NT\$50,000,000 (exclusive)	Lucas S Chang, Linwu Kuo	Linwu Kuo
NT\$50,000,000 (inclusive)~ NT\$100,000,000 (exclusive)	Ming Hsu, TS Wu, C C Hsu, M C Lai, S F Tzou, Osbert Cheng, G C Hung, Steven Hsu, Wenchi Ting, Jerry CJ Hu, Y S Shen, Steven S Liu, SR Sheu, M L Liao, S S Hong, Francia Hsu, Mindy Lin, Eric Chen	Lucas S Chang, TS Wu, C C Hsu, M C Lai, S F Tzou, Osbert Cheng, G C Hung, Steven Hsu, Wenchi Ting, Jerry CJ Hu, Y S Shen, Steven S Liu, SR Sheu, M L Liao, S S Hong, Francia Hsu, Mindy Lin, Eric Chen
NT\$100,000,000 or More	Stan Hung, SC Chien, Jason Wang, Oliver Chang, Chitung Liu	Stan Hung, SC Chien, Jason Wang, Ming Hsu, Oliver Chang, Chitung Liu
Total	25	25

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

## Employees' Profit Sharing Bonus Paid to Management Team

In Thousand NT\$

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	S F Tzou				
Vice President	Osbert Cheng				
Vice President	G C Hung	0	936,900	936,900	1.07
Vice President	Steven Hsu				
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	Mindy Lin				
Vice President	Linwu Kuo				
Vice President & Chief Human Resources Officer	Eric Chen				

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

	2022		2021	
	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 NT\$)	87,198,291	87,198,291	55,780,255	55,780,255
The Percentage of Directors' Remuneration to Net Income (%)	0.06	0.06	0.06	0.06
The Percentage of Executive Officers' Compensation to Net Income (%)	2.70	2.99	2.28	2.45

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

The Company's compensation for Directors and Executive officers 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 0.2% 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. The Company instituted the Rules for Performance Evaluation of the Board of Directors and annually executive self-evaluation of the Board and the performance self-assessment of each director. In addition to self-assessments, the performance of the Board is assessed by an external independent professional institution or a panel of external experts and scholars at least once every three years. Both performance appraisal and compensation rationality shall be reviewed by Remuneration Committee and Board of Directors.

#### Policy for Management Team's Compensation

The Company annually evaluates its salary level with similar industries to ensure the Company's competitiveness. 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. Fixed compensation is determined based on job duties and relative importance of the position

and other factors, and variable compensation is based on the execution and achievement status of the operating strategy and objectives that the manager is responsible for. Evaluation index of variable compensation shall include financial performance index, which are return on equity (ROE) % and operating margin (OM) %, and sustainability index, including increasing revenue proportion and market share of sustainable products, integrate UMC's core capabilities, minimize environmental footprint, and create social value. UMC is committed to the advancement of the three aspects of ESG (environmental, social, governance), therefore, in addition to the Company's competitiveness in the industry, performance on ESG targets is added to key performance metrics in order to align the interests of executives with that of the Company, making corporate sustainability a common goal.

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 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 interest of stakeholders.



# Corporate Governance Practices

## Information of Board Meeting Operation

Board Meetings were held 6 times in 2022; all independent directors attended each meeting in person; the attendance rate of all directors was 100.00%; 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	Wenyi Chu	6	0	100.00	
Independent Director	Lih J. Chen	6	0	100.00	
Independent Director	Jyuo-Min Shyu	6	0	100.00	
Independent Director	Kuang Si Shiu	6	0	100.00	
Independent Director	Wen-Hsin Hsu	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	

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

### Other Matters to Be Recorded:

- 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 37-39 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:

Date of Board Meeting	Name of Director	Contents of Motion	Cause for Avoidance	Participation in Voting
February 24, 2022	Stan Hung, Chairman SC Chien, Director	Approved UMC's donation to UMC Science and Culture Foundation.	Concurrently serve as the director of UMC Science and Culture Foundation.	Did not participate in discussion and voting.
	All the directors	Approved the amount and ratio of the 2021 distributable compensation for directors.	the amount and ratio of distributable compensation for directors are related to directors' interest.	Each director did not participate in discussion and voting for the amount and ratio of distributable compensation for him/her.
	Stan Hung, Chairman SC Chien, Director Jason Wang, Director	Approved the compensation proposal for managers.	Concurrently serve as a manager of the Company.	Did not participate in discussion and voting.
June 1, 2022	Stan Hung, Chairman SC Chien, Director Jason Wang, Director	Approved the compensation proposal for managers.	Concurrently serve as a manager of the Company.	Did not participate in discussion and voting.
July 27, 2022	Stan Hung, Chairman SC Chien, Director Jason Wang, Director	Approved the compensation proposal for managers.	Concurrently serve as a manager of the Company.	Did not participate in discussion and voting.
December 14, 2022	Stan Hung, Chairman SC Chien, Director Jason Wang, Director	Approved the compensation proposal for managers.	Concurrently serve as a manager of the Company.	Did not participate in discussion and voting.

- 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 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 to account for corporate governance matters and assist in supervision of the Board, and the "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. In addition to conducting a board performance evaluation every year, the Company also engaged with TAIWAN CORPORATE GOVERNANCE ASSOCIATION to implement performance evaluation of the Board of Directors in 2020; please refer to the Company's website for the evaluation report: [https://www.umc.com/en/IR\\_Director/directors\\_information](https://www.umc.com/en/IR_Director/directors_information).

The UMC Board of Directors comprises of 9 members, including 5 seats for independent directors and 1 for a non-executive director; 3 serve as administrative directors. More than one half of the director seats are independent directors. There are 2 seats currently reserved for a female director. Based on our policy of gender equality, UMC will increase the female director seats progressively.

## Execution Status of the Board Evaluation

Evaluation Cycle	Evaluation Period	Evaluation Scope	Evaluation Method	Evaluation Content
Annually	2022/1/1~2022/12/31	The Company's board self-evaluation scope covers the evaluation of the board, functional committees (including the Audit Committee, Remuneration Committee, Capital Budget Committee and Nominating Committee) 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> <ol style="list-style-type: none"> <li>(1) Participation in the operation of the company;</li> <li>(2) Improvement of the quality of the board of directors' decision making;</li> <li>(3) Composition and structure of the board of directors;</li> <li>(4) Election and continuing education of the directors; and</li> <li>(5) Internal control.</li> </ol> <p>2. The self-evaluation of the functional committees includes the following aspects:</p> <ol style="list-style-type: none"> <li>(1) Participation in the operation of the company;</li> <li>(2) Awareness of the duties of the functional committee;</li> <li>(3) Improvement of quality of decisions made by the functional committee;</li> <li>(4) Composition of the functional committee and election of its members; and</li> <li>(5) Internal control.</li> </ol> <p>3. The self-evaluation of board members includes the following aspects:</p> <ol style="list-style-type: none"> <li>(1) Familiarity with the goals and missions of the company;</li> <li>(2) Awareness of the duties of a director;</li> <li>(3) Participation in the operation of the company;</li> <li>(4) Management of internal relationships and communication;</li> <li>(5) The director's professionalism and continuing education; and</li> <li>(6) Internal control.</li> </ol> <p>4. Evaluation Result: The Nominating Committee conducted the self-evaluation for 2022 of the Board of Directors, functional committees (include Audit Committee, Remuneration Committee, Capital Budget Committee and Nominating Committee) and individual board members and reported the result to the Nominating Committee and Board of Directors on February 22, 2023. The performance result was "Excellent". The Chief Corporate Governance Officer will persist in improving communication with directors to enhance the quality of the Board of Directors' meetings.</p>

## 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 3 financial experts, all members' professionalism requirements and experience, please refer to page 16-19 on Directors' Information and page 21 on Directors' Professional Qualification & Independent Directors' Independence Information of this annual report. It's operating according to the Audit Committee Charter (please refer to the Company's website at [https://www.umc.com/upload/media/08\\_Investors/Corporate\\_Governance/Audit\\_Committee/Audit\\_Committee\\_Charter\\_Eng.pdf](https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Audit_Committee/Audit_Committee_Charter_Eng.pdf)). According to the relevant regulations, the Audit Committee shall convene at least four regular meetings per year. In 2022 a total of five meetings were convened; it shall also maintain good communication channels with the Company's management, Chief of Corporate Governance Officer, internal auditors and independent auditors.

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 assessing 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 2022, and the attendance status is shown in the following table:

Title	Name	Attendance	Proxy Attendance	Actual Attendance Rate (%)	Note
Independent Director	Lih J. Chen	5	0	100.00	Audit Committee convener
Independent Director	Wenyi Chu	5	0	100.00	
Independent Director	Jyuo-Min Shyu	5	0	100.00	
Independent Director	Kuang Si Shiu	5	0	100.00	
Independent Director	Wen-Hsin Hsu	5	0	100.00	

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

**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 Audit Committee meeting, the content of motion, the independent directors' opinions expressing objections, reservations or major suggestions, 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:

<b>Date/Session of Audit Committee</b>	<b>Content of Motion</b>	<b>Content of the Independent Directors' Opinions Expressing Objections, Reservations or Major Suggestions</b>	<b>Resolution of the Audit Committee</b>	<b>Company's Response to the Opinion of the Audit Committee</b>
February 24, 2022, the 6th meeting of the 5th session	1.Approved the 2021 Consolidated Financial Statements (including Parent Company only Financial Statements). 2.Approved the 2021 Business Report. 3.Approved the 2021 Earnings Distribution Chart. 4.Approved the cash distribution from capital surplus. 5.Approved the 2021 Statement of Internal Control System. 6.Approved the content of appointed service and fee for the independent auditor appointed in 2022. 7.Approved the issuance of Restricted Stock Awards. 8.Approved amendment of the UMC Acquisition or Disposal of Assets Procedure. 9.Approved the Company's donation to UMC Science and Culture Foundation.	None.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
April 27, 2022, the 7th meeting of the 5th session	1.Approved the Q1, 2022 Consolidated Financial Statements. 2.Approved to decrease the endorsement and guarantee of the loan for United Semiconductor (Xiamen) Co., Ltd. 3.Approved the acquisition of United Semiconductor (Xiamen) Co., Ltd.	None.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
July 27, 2022, the 8th meeting of the 5th session	1.Approved the Q2, 2022 Consolidated Financial Statements.	None.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
October 26, 2022, the 9th meeting of the 5th session	1.Approved the Q3, 2022 Consolidated Financial Statements. 2.Approved to adjust the endorsement and guarantee of the loan for United Semiconductor (Xiamen) Co., Ltd.	None.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
December 14, 2022, the 10th meeting of the 5th 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 loan for United Semiconductor (Xiamen) Co., Ltd.	None.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
February 22, 2023, the 11th meeting of the 5th session	1.Approved the 2022 Consolidated Financial Statements (including Parent Company only Financial Statements). 2.Approved the 2022 Business Report. 3.Approved the 2022 Earnings Distribution Chart. 4.Approved the 2022 Statement of Internal Control System. 5.Approved to change Certified Public Accountant due to the internal reorganization of the CPA firm. 6.Approved the content of appointed service and fee for the independent auditor appointed in 2023. 7.Approved the Company's donation to UMC Science and Culture Foundation. 8.Approved the change of Chief Internal Auditor.	None.	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)**

- (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 2022.
2. Implementation of avoidance of independent director with respect to motion of stake: there was no such situation in the Audit Committee in 2022.
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 each month. 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 and semi-annually separate meeting.
  - (2) 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 during the Audit Committee's quarterly meetings and separate meeting at least once a year. 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, and 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.
  - (4) For the communication between independent directors, internal audit head, and independent auditors, please refer to the Company's website: [https://www.umc.com/en/IR\\_Audit/audit\\_committee](https://www.umc.com/en/IR_Audit/audit_committee).

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

Evaluation Item	Yes	No
	1. Has the Company established and does it disclose the Corporate Governance Best-Practice Principles based on “Corporate Governance Practice Principles for TWSE/TPEX Listed Companies?”	✓
2. Shareholding Structure & Shareholders' Rights		
(1) Has the Company established an internal operating procedure to deal with shareholders' suggestions, doubts, disputes and litigations, and implement it 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) Has the Company established and does it execute the risk management and firewall system within its conglomerate structure?	✓	
(4) Has the Company established 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) Has the Company voluntarily established 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 in the Corporate Governance section of UMC's website for stakeholders to download. Please refer to: <a href="https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/UMC_Corporate_Governance_Practice_Principles_eng.pdf">https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/UMC_Corporate_Governance_Practice_Principles_eng.pdf</a> .	None
UMC has established an internal operating procedure for personnel of Finance Department, Legal Affairs Department and Compliance Department to deal with shareholders' suggestions, doubts, disputes and litigations, and designated a specific contact window (ir@umc.com) and included an Investor Relations section on the Company's website to deal with shareholders' suggestions, doubts, disputes and litigations. Please refer to the Company's website for stakeholders' contact: <a href="https://www.umc.com/en/Html/stakeholder_contacts">https://www.umc.com/en/Html/stakeholder_contacts</a> .	None
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
Please refer to the "Board of Directors Information" on page 16, and the "Disclosure of Directors' Professional Qualifications and Independent Directors' Independence Information" on page 21 of this annual report for information on the diversified composition policy and its implementation by the board members.	None
To meet the needs of industry characteristics and operations, UMC has established the Capital Budget Committee. The Committee currently comprises five independent 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 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 UMC's website at <a href="https://www.umc.com/en/Html/capital_budget_committee">https://www.umc.com/en/Html/capital_budget_committee</a> and <a href="https://www.umc.com/en/Html/nominating_committee">https://www.umc.com/en/Html/nominating_committee</a> .	None

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

Evaluation Item		
	Yes	No
(3) Has the Company established a standard to measure the performance of the Board, and has it been implemented annually? Are the implemented results reported to the Board, and used as a reference for individual directors' compensation and nomination renewal?	✓	
(4) Does the Company regularly evaluate the independence of CPAs?	✓	
4. Does the Company have an adequate number of corporate governance personnel with appropriate qualifications, and has a Chief Corporate Governance Officer been appointed 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)?	✓	



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 Board of Directors, its functional committees (including the Audit Committee, Remuneration Committee, Capital Budget Committee and Nominating Committee) and individual board members' performance. The Nominating Committee conducted the self-evaluation for 2022 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 22, 2023. The performance result was 'Excellent'. The Chief Corporate Governance Officer will persist in improving communication with directors to enhance the quality of the Board of Directors' meetings.</p> <p>B. The performance of the Board is also assessed by an external independent professional institution or a panel of external experts and scholars at least once every three years. After the first performance evaluation conducted by an external assessment institution in 2018, the Company re-engaged with an external assessment institution, Taiwan Corporate Governance Association, to implement performance evaluation of the Board of Directors in 2020. The Rules for Performance Evaluation of the Board of Directors and the Results of the Performance Assessment of the Board of Directors, please refer to the Company's website: <a href="https://www.umc.com/en/IR_Director/directors_information">https://www.umc.com/en/IR_Director/directors_information</a>. The Company's Directors' Compensation is regulated in the Company's Articles of Incorporation. The Company shall allocate no more than 0.2% of profit as directors' compensation for each profitable fiscal year, and 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 competence and independence of independent auditors. And the result is then submitted to the Board of Directors. The evaluation results of the most recent two years were completed on February 24, 2022 and February 22, 2023. The evaluation items are as follows:</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 competence and independence of the independent auditor annually by reference to Audit Quality Indicators (AQIs). Evaluation items include the size and reputation of the accounting firm; independent auditors' education and experience; quality of audit services (e.g. CPAs' workload and timing of audit execution); ratio of non-audit fees; periodical communication and interaction between independent auditors, management, and internal the Audit Committee; whether UMC's independent directors and relevant senior executives are independent from the independent auditor; whether an auditor from the accounting firm has worked at the Company as a senior financial supervisor or a role with significant authority; and whether there are no major audit violations and legal proceedings, etc.</p>	None
<p>Upon nomination by the Nominating Committee of UMC, the Board of Directors appointed Mr. Chitung Liu, the Senior Vice President and CFO of UMC, as the Chief Corporate Governance Officer on March 6, 2019. The position is accountable for corporate governance matters, including preparation and execution of agenda and matters relating to the Shareholders' Meeting, the Board, Audit Committee, Compensation Committee, Capital Budget Committee and Nominating Committee, assistance in fulfilling requests by directors to perform duties and provide information, and is also responsible for ensuring legal compliance of the Board, promoting communication and dialogue between the management team and the directors, and among the board members, and communicating with the independent directors on corporate governance-related affairs on a regular basis every year. The Chief Corporate Governance Officer has been in a managerial position for at least three years in a public company in handling financial and stock affairs, and completed professional training in accordance with laws and regulations. For continuing education/training of Corporate Governance Officer, please refer to pages 48 of this annual report.</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
5. Has the Company established a communication channel and built a designated section on its website for stakeholders (including but not limited to shareholders, employees, customers, and suppliers), responded appropriately to stakeholders on corporate social responsibility issues?	✓	
6. Has the Company appointed 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
Abstract Explanation	
<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 sustainability issues and contingency plans to determine appropriate responses and publicly discloses relevant stakeholder communication information through the Sustainability Report and UMC's website, and at the same time reports key stakeholder concerns and countermeasures at Board meetings.</p>	None
<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 situation and the status of corporate governance at all times for investors' reference. Please refer to the Company's website for related information: <a href="https://www.umc.com/en/IR/ir_overview">https://www.umc.com/en/IR/ir_overview</a>.</p>	None
<p>The Company has built Chinese and English websites, and has 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 (<a href="mailto:ir@umc.com">ir@umc.com</a>) to deal with shareholders' suggestions as per regulation. Please refer to the Company's website for related information: <a href="https://www.umc.com">https://www.umc.com</a>.</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 2022 annual financial report was completed on February 22, 2023.</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 Directors, please refer to pages 46-47 of this annual report.</p> <p>(2) Board meeting attendance: Please refer to Page 35-39 on Board of Directors Operations and Audit Committee Operations, and Page 50-51 on Remuneration Committee Operations in this annual report.</p> <p>(3) Risk management policies and risk measurement standards implementation: Please refer to Page 131 on Risk Management and Evaluation in this annual report.</p> <p>(4) Customer policy implementation: Please refer to Page 116 on Market, Production and Sales Overview in this annual report.</p> <p>(5) Employee Rights, Employment Care, Investor Relations, Supplier Relationships and Stakeholders Rights Implementation: Please refer to Page 54-67 on Promotion of Sustainable Development and Deviations from "Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies, Page 144-156 on Corporate Sustainable Development in this annual report, and UMC Sustainability Report.</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 2022 and was reported during the last Board Meeting.</p> <p>(7) UMC website for corporate governance policies and implementation: <a href="https://www.umc.com/en/Html/ir_corporate_governance">https://www.umc.com/en/Html/ir_corporate_governance</a>.</p>	None
<p>UMC was ranked in the top 5% of companies in "Corporate Governance Evaluation" every year since 2015. The UMC Board of Directors comprises nine members, including five seats for independent directors and one for a non-executive director; three serve as administrative directors. More than one half of the director seats are independent directors. There are two seats currently reserved for female directors. Based on our policy of gender equality, UMC will increase the female director seats progressively. Also, in line with improvement measure of Corporate Governance Evaluation Index, UMC held the 2022 Annual General Meeting before the end of May, 2022 to improve Corporate Governance continuously.</p>	

**Continuing Education/Training of Directors in 2022:**

Title	Name	Study Period		Sponsoring Organization	Course	Training Hours	Compliance with Regulations (Note)
		From	To				
Chairman	Stan Hung	2022.07.26	2022.07.26	INDEPENDENT DIRECTOR ASSOCIATION TAIWAN	ESG Sustainability Committee's Carbon Footprint Verification, Carbon Footprint Certification, and Regulation & Practical Operation of Carbon Reduction Measures	3	Yes
		2022.10.25	2022.10.25	INDEPENDENT DIRECTOR ASSOCIATION TAIWAN	Ten Golden Years Vs. Perfect Storm: the Opportunity and Challenge of Semi & ICT Industry in Taiwan	3	Yes
Independent Director	Wenyi Chu	2022.05.12	2022.05.12	TAIWAN STOCK EXCHANGE CORPORATION	International Twin Summit	2	Yes
		2022.09.22	2022.09.22	TAIWAN SECURITIES ASSOCIATION	Corporate Sustainability and the Development Trend of ESG	3	Yes
		2022.10.19	2022.10.19	SECURITIES & FUTURES INSTITUTE	Insider Equity Trading Regulations Advocacy Meeting in 2022	3	Yes
Independent Director	Lih J. Chen	2022.10.13	2022.10.13	GREATER CHINA FINANCIAL AND ECONOMIC DEVELOPMENT ASSOCIATION	Innovative Thinking of Digital Transformation	3	Yes
		2022.11.30	2022.11.30	GREATER CHINA FINANCIAL AND ECONOMIC DEVELOPMENT ASSOCIATION	AI Thinking and Digital Transformation	3	Yes
Independent Director	Jyuo-Min Shyu	2022.04.20	2022.04.20	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	The Legal Liability of Enterprise Director from the Perspective of Intellectual Property Management	3	Yes
		2022.05.12	2022.05.12	TAIWAN STOCK EXCHANGE CORPORATION	International Twin Summit	2	Yes
		2022.11.18	2022.11.18	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	Risk and Opportunities of Sustainability	3	Yes
		2022.12.06	2022.12.06	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	Strengthen the Digital Toughness and Construct Information Security Governance Strengthening Strategy	3	Yes

## Continuing Education/Training of Directors in 2022:

Title	Name	Study Period		Sponsoring Organization	Course	Training Hours	Compliance with Regulations (Note)
		From	To				
Independent Director	Kuang Si Shiu	2022.02.17	2022.02.17	TAIWAN SECURITIES ASSOCIATION	How to Avoid Landmine Stocks - the Application of Corporate Governance Risk	3	Yes
		2022.03.02	2022.03.02	YUANTA FINANCIAL HOLDING CO., LTD.	The Analysis of effect of Anti-Tax Avoidance Rules and Global Anti-Base Erosion Rules in Taiwan	1.5	Yes
		2022.07.14	2022.07.14	TAIWAN SECURITIES ASSOCIATION	The Latest Trend of Anti-Money Laundering and Countering the Financing of Terrorism (Insider Trading Prevention Advocacy included)	3	Yes
		2022.08.11	2022.08.11	TAIWAN SECURITIES ASSOCIATION	Strengthen the Information Security Toughness of Financial Industry and the Trend & Practice of Risk Management in Financial Industry	3	Yes
		2022.11.11	2022.11.11	SECURITIES & FUTURES INSTITUTE	Listed Companies-the Trading Strategy of Derivatives and Market Outlook Seminar	3	Yes
Independent Director	Wen-Hsin Hsu	2022.10.11	2022.10.11	TAIWAN STOCK EXCHANGE CORPORATION	Release Conference 2022: Reference guide for Independent Director & Audit Committee	3	Yes
		2022.10.19	2022.10.19	SECURITIES & FUTURES INSTITUTE	Insider Equity Trading Regulations Advocacy Meeting in 2022	3	Yes
		2022.11.11	2022.11.11	SECURITIES & FUTURES INSTITUTE	Listed Companies-the Trading Strategy of Derivatives and Market Outlook Seminar	3	Yes
Director	Ting-Yu Lin	2022.05.04	2022.05.04	TAIWAN STOCK EXCHANGE CORPORATION	International Twin Summit	2	Yes
		2022.09.22	2022.09.22	TAIWAN SECURITIES ASSOCIATION	Corporate Sustainability and the Development Trend of ESG	3	Yes
		2022.11.03	2022.11.03	TAIWAN CORPORATE GOVERNANCE ASSOCIATION	Fubon Insurance's the Trend of ESG and Risk Management Seminar	3	Yes
Representative of Juristic-Person Director	SC Chien	2022.09.22	2022.09.22	TAIWAN SECURITIES ASSOCIATION	Corporate Sustainability and the Development Trend of ESG	3	Yes
		2022.12.19	2022.12.19	SECURITIES & FUTURES INSTITUTE	The Global Trend and Business Opportunity of Low-Carbon Economy and Low-Carbon Innovation in 2022	3	Yes
Representative of Juristic-Person Director	Jason Wang	2022.07.26	2022.07.26	INDEPENDENT DIRECTOR ASSOCIATION TAIWAN	ESG Sustainability Committee's Carbon Footprint Verification, Carbon Footprint Certification, and Regulation & Practical Operation of Carbon Reduction Measures	3	Yes
		2022.10.25	2022.10.25	INDEPENDENT DIRECTOR ASSOCIATION TAIWAN	Ten Golden Years Vs. Perfect Storm: the opportunity and challenge of Semi & ICT Industry in Taiwan	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 Corporate Governance Officer in 2022:**

Title	Name	Course Date	Organizer	Course Title	Course Hours
Senior Vice President & Chief Financial Officer	Chitung Liu	2022.02.17	ACCOUNTING RESEARCH AND DEVELOPMENT FOUNDATION	ESG Sustainable Finance Trend Wave and Coping Strategies	3
		2022.03.08	ACCOUNTING RESEARCH AND DEVELOPMENT FOUNDATION	Use ESG to Enhance Corporate Strategic Capabilities	3
		2022.04.18	ACCOUNTING RESEARCH AND DEVELOPMENT FOUNDATION	Directors, Supervisors and Senior Executives Supervise the Company's Implementation of ESG	3
		2022.05.03	ACCOUNTING RESEARCH AND DEVELOPMENT FOUNDATION	Analysis of the Latest Corporate Governance Policies and Corporate Governance Evaluation Practices	3
		2022.05.04	TAIWAN STOCK EXCHANGE CORPORATION	International Double Summit Online Forum	2

**Continuing Education/Training of Managers in 2022:**

Title	Name	Course Date	Organizer	Course Title	Course Hours
President	SC Chien	2022.07.08	UNITED MICROELECTRONICS CORP.	Enterprise Low-carbon Transformation Strategy Under the Trend of Net Zero	1
Senior Vice President	Oliver Chang				
Vice President	M C Lai				
Vice President	S F Tzou				
Vice President	Osbert Cheng				
Vice President	G C Hung				
Vice President	Jerry CJ Hu				
Vice President	M L Liao				
Vice President	S S Hong				
Vice President	Linwu Kuo				
Vice President & Chief Human Resources Officer	Eric Chen	2022.08.26	UNITED MICROELECTRONICS CORP.	Talking About the Application of Work Emotions in Human Resource Management	1.5
President	SC Chien	2022.10.11 2022.10.18	UNITED MICROELECTRONICS CORP.	[ Executive Program ] Basic Thinking and Structure of Strategic Management	4
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	M C Lai				
Vice President	S F Tzou				
Vice President	Osbert Cheng				
Vice President	G C Hung				
Vice President	Steven Hsu				
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	Mindy Lin				
Vice President	Linwu Kuo				
Vice President & Chief Human Resources Officer	Eric Chen				

## Continuing Education/Training of Managers in 2022:

Title	Name	Course Date	Organizer	Course Title	Course Hours
President	SC Chien				
President	Jason Wang				
Executive Vice President	Ming Hsu				
Senior Vice President	Oliver Chang				
Vice President	TS Wu				
Vice President	M C Lai				
Vice President	G C Hung				
Vice President	Jerry CJ Hu	2022.11.29	UNITED MICROELECTRONICS CORP.	[ 2022 Master Forum ] Industry 3.5 and the Blue Lake Strategy	2
Vice President	Y S Shen				
Vice President	SR Sheu				
Vice President	M L Liao				
Vice President	Francia Hsu				
Vice President	Mindy Lin				
Vice President	Linwu Kuo				
Vice President & Chief Human Resources Officer	Eric Chen				
Senior Vice President	Oliver Chang				
Senior Vice President & Chief Financial Officer	Chitung Liu				
Vice President	TS Wu				
Vice President	M C Lai				
Vice President	S F Tzou				
Vice President	Osbert Cheng				
Vice President	G C Hung	2022.12.08	UNITED MICROELECTRONICS CORP.	[ Legal Course ] 2022 Introduction of Trade Secrets Act	2
Vice President	Jerry CJ Hu				
Vice President	Y S Shen				
Vice President	SR Sheu				
Vice President	Francia Hsu				
Vice President	Mindy Lin				
Vice President	Linwu Kuo				
Vice President & Chief Human Resources Officer	Eric Chen				

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 2022. The senior executive courses are as follows:

[ 2022 Master Forum ] A total of one sessions were held, with a total of 84 supervisors participating, and a course satisfaction rating of 94%.

[ Executive Program ] A total of two sessions were held, with a total of 60 supervisors participating, and a course satisfaction rating of 98%.

## Information on the Members of the Remuneration Committee

The goal of Remuneration Committee's operation is to strengthen corporate governance and risk control, and to periodically evaluate and monitor the Company's remuneration system for its directors and managers while considering the provision of incentives to facilitate talent retention. The committee shall be composed of all the Company's independent directors, and convene meetings accordance with the laws.

Title	Name	Professional Qualifications and Experience	Meets Criteria of Independence	Number of Other Public Companies Where the Member Concurrently Serves as a Member in the Remuneration Committee
Independent Director (Convener)	Wenyi Chu	Members of the remuneration committee are composed of all independent directors. For further information of their professional qualification, please refer to this report on page 21.		1
Independent Director	Lih J. Chen			0
Independent Director	Jyuo-Min Shyu			1
Independent Director	Kuang Si Shiu			2
Independent Director	Wen-Hsin Hsu			2



### Information of the Remuneration Committee Operation

1. The Company has a Remuneration Committee composed of five members.
2. Term of the current Committee: From July 7, 2021 to July 6, 2024.

The Company convened six Remuneration Committee meetings in 2022 with the following attendance:

Title	Name	Number of Actual Attendance	Number of Proxy Attendance	Rate of Actual Attendance (%)	Note
Convener	Wenyi Chu	6	0	100.00	
Committee Member	Lih J. Chen	6	0	100.00	
Committee Member	Jyuo-Min Shyu	6	0	100.00	
Committee Member	Kuang Si Shiu	6	0	100.00	
Committee Member	Wen-Hsin Hsu	6	0	100.00	

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

#### Other Matters to 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 2022:

Date/Meeting	Proposal	Resolution	The Company's Handling of the Opinions of the Remuneration Committee
February 24, 2022, The 2nd meeting of the 5th session	1. Directors' 2021 remuneration. 2. Executive officers' compensation structure and performance evaluation system review and executive officers' compensation and internal audit supervisor's compensation proposals.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
April 27, 2022, The 3rd meeting of the 5th session	1. Directors' remuneration, and attendance fees adjustment.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
June 1, 2022, The 4th meeting of the 5th session	1. Executive officers' salary increase in 2022. 2. Proposal of executive officers' compensation.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
July 27, 2022, The 5th meeting of the 5th session	1. Proposal of executive officers' compensation.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
October 26, 2022, The 6th meeting of the 5th session	1. Issuance of restricted share award.	Approved by all members present in the meeting.	Approved by directors participating in the discussion and voting in the board meeting.
December 14, 2022, The 7th meeting of the 5th session	1. Proposal of executive officers' compensation.	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 include: 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 corporate sustainability strategies, corporate governance system and practices in order to protect the interests of stakeholders. Please refer to the Company's website for related information: [https://www.umc.com/en/Html/nominating\\_committee](https://www.umc.com/en/Html/nominating_committee)

### Information of Nominating Committee Operation

- There are five members in the Nominating Committee.
- The term for elected committee members is three years, starting from July 7, 2021 to July 6, 2024. A total of two Nominating Committee meetings were held in 2022. The attendance of the committee members was as follows:

Title	Name	Professional Qualification & Experience	Attendance in Person	By Proxy	Attendance Rate (%)	Remarks
Convener	Jyuo-Min Shyu	Members of the nominating committee are composed of all independent directors. For further information of their professional qualification, please refer to this report on page 21.	2	0	100.00	
Committee Member	Wenyi Chu		2	0	100.00	
Committee Member	Lih J. Chen		2	0	100.00	
Committee Member	Kuang Si Shiu		2	0	100.00	
Committee Member	Wen-Hsin Hsu		2	0	100.00	

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

#### Other Matters to Be Recorded:

- Major resolutions of Nominating Committee in 2022:

Meeting on February 24, 2022, the 2nd meeting of the 3rd term:

- Amended the Company's Sustainable Development Best Practice Principles.

Meeting on October 26, 2022, the 3rd meeting of the 3rd term:

- Approved the ESG KPI Achievement linked with Employees' Compensation.
- Amended the Company's Corporate Governance Practice Principles.
- Amended the Company's Policy for Nomination and Election of Directors.

- Content of the committee member's opinions expressing objections, reservations or major suggestions: None.

- Company's response to the opinion of the Nominating Committee: Approved.

## Capital Budget Committee

The Capital Budget Committee comprises independent directors to assist in the Company's long-term development strategy, financial planning, and business performance. The committee discusses plan implementations, modifies and follows up on the Company's capital expenditure budget by auditing its cost-effectiveness and tracking its performance.

### Information of Capital Budget Committee Operation

1. There are five members in the Capital Budget Committee.
2. The term for elected committee members is three years, starting from July 7, 2021 to July 6, 2024. A total of five Capital Budget Committee meetings were held in 2022. The attendance of the committee members was as follows:

Title	Name	Professional Qualification & Experience	Attendance in Person	By Proxy	Attendance Rate (%)	Remarks
Convener	Kuang Si Shiu	Members of the capital committee are composed of all independent directors. For further information of their professional qualification, please refer to this report on page 21.	5	0	100.00	
Committee Member	Wenyi Chu		5	0	100.00	
Committee Member	Lih J. Chen		5	0	100.00	
Committee Member	Jyuo-Min Shyu		5	0	100.00	
Committee Member	Wen-Hsin Hsu		5	0	100.00	

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

#### Other Matters to Be Recorded:

1. Major resolutions of Capital Budget Committee in 2022:  
Approved capital budget expenses of NT\$128,475 million in 2022.
2. Content of the committee member's opinions expressing objections, reservations or major suggestions: None.
3. Company's response to the opinion of the Capital Budget Committee: Approved.

## Promotion of Sustainable Development and Deviations from "Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies"

Evaluation Item		
	Yes	No
1. Does the Company have a governance framework to promote sustainable development in place, with a division authorized by the Board to exclusively or concurrently promote sustainable development policies and responsible for reporting back to the Board?	✓	
2. Does the Company follow materiality principle to conduct risk assessment for environmental, social and corporate governance topics related to company operation, and establish risk management related policy or strategy?	✓	
3. Environmental Issues		
(1) Does the Company have environmental management systems appropriate for its industry in place?	✓	

Implementation Status	Deviations from "The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies" and Reasons
Abstract Explanation	
<p>UMC's sustainable governance structure includes the Board of Directors (including the Nominating Committee), the ESG Steering Committee, the Corporate Sustainability Committee, and the Enterprise Risk Management Committee.</p> <p>In 2020, UMC reorganized its sustainable governance structure and established the ESG Steering Committee, consisting of our core operating executives, and appointed the Co-Presidents as the Chairmen. The ESG Steering Committee meets every quarter to determine UMC's sustainable governance strategy and goals, and also reports to the Nomination Committee and the Board of Directors annually on the sustainable performance and plans, as well as key issues and countermeasures that stakeholders are concerned about. The Board of Directors plays a supervisory and coaching role, assessing the strategy's viability, regularly reviewing the progress of the strategy, and urging the management team to make adjustments when needed. The main points of the proposal reported to the Board of Directors in 2022 include: (1) ESG activities and achievements; (2) stakeholder communication; and (3) future focus. The achievement of employee's remuneration linked to ESG KPI was also approved by Nomination Committee and the Board of Directors in this meeting. UMC has achieved the ESG targets and the allocation of employee profit sharing percentage would be increased accordingly. Other annual resolutions of the Board of Directors related to sustainability include issuing Restricted Stock Awards (RSA) which set MSCI ESG ratings achieved A or above as one of the performance indicators, "Donation to the UMC Science and Culture Foundation" and the green investment in the "Capital Budget Execution."</p> <p>The Corporate Sustainability Committee was established in 2008 and is responsible for stipulating the direction and goals of sustainability. The Committee reviews the performance and target achievements of eight functional groups, which include Corporate Governance, Customer Relationship Management, Responsible Supply Chain Management, Sustainable Innovation, Environmental Planning and Management, Green Operation, Human Rights and Employee Development/Welfare, and Social Participation. The representative of the Corporate Sustainability Committee reports the quarterly promotion results and plans to the ESG Steering Committee. The scope of the report includes the management and review of material issues in the areas of economics/governance, environment and society.</p>	None
<p>Through the Corporate Sustainability Committee, the Company keeps itself current on the development of domestic and international sustainable development standards and changes in the corporate environment, reviews and improves the sustainable development system of UMC, and follow materiality principle to conduct impacts identification and significance assessment for environmental, social and corporate governance issues related to the Company's operations. 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, identifies possible opportunities, comprehensively implements them in daily operations, shapes and deepens the risk culture, and establishes complete and transparent risk communication with all stakeholders to maintain steady operations. In order to address significant risk issues, the Enterprise Risk Management Committee develops response strategies for major risk issues. It reports to the ESG Steering Committee to ensure alignment with the company's sustainability strategy and reports to the Board of Directors at least once a year to ensure alignment with the risk management policies, and implementation and effectiveness of risk management measures.</p> <p>For the details, please refer to the section "Corporate Sustainable Development-Description of Sustainable Management" and "Risk Management and Evaluation" of this annual report.</p>	None
<p>All UMC fabs established environmental management systems in accordance with ISO 14001 and continue to obtain third-party verification. 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 protected through equipment safety, chemical safety and operational safety management.</p> <p>For carbon emission management, UMC established its greenhouse gas (GHG) inventory standard mechanism in accordance with inventory guidelines defined by domestic and international organizations, including the ISO14064-1 and World Resource Institute "Greenhouse Gas Protocol." The Company inventories the GHG emissions of all its fabs annually to fully determine the status of its GHG and verify the effectiveness of their reduction.</p> <p>To achieve sustainable operations, UMC adopts a clean production and zero-incident approach to environmental protection and safety, and sets environmental health and safety management system goals every year. By promoting programs that reduce environmental impact and strengthen safety, UMC continuously improves its performance in environmental protection and safety management.</p>	None

**Promotion of Sustainable Development and Deviations from "Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies" (Continue)**

Evaluation Item	Yes	No
	(2) Does the Company endeavor to utilize all resources more efficiently and use renewable materials which have low impact on the environment?	✓
(3) Does the Company evaluate the potential risks and opportunities of climate change on its operations and take actions?	✓	

Implementation Status	Deviations from "The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies" and Reasons
Abstract Explanation	
<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 "Corporate Sustainable Development-Environmental Protection, Safety and Health Management" chapter 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 Sustainability Report, which is summarized below:</p> <ul style="list-style-type: none"> <li>• 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.</li> <li>• 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 material with harmful environmental impact.</li> <li>• Green Process: The semiconductor process uses a wide variety of raw materials of high purity and high quality. Through improving process design and technology, UMC reduces raw material consumption, which not only reduces emissions at the source, but also reduces operating costs. UMC has established a comprehensive information database to manage the importing 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.</li> <li>• 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.</li> <li>• Green Products: Although UMC does not produce its own branded products, 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 requirements 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.</li> <li>• Shipping 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). Suppliers provide the third-party qualified inspection report for related packaging materials.</li> <li>• 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 on numerous recycling projects, and makes on-site improvements (such as changing liquid waste pipelines and segregated collection) to increase the types of recyclable waste.</li> </ul>	None
<p>The Company formulated the UMC Climate Change Policy in 2010 as the Company's highest guiding principle in response to climate change. UMC has also formulated the UMC Low Carbon Commitment as a guide for future carbon reduction projects. Echoing the Paris Climate Agreement, UMC announced its pledge in 2021 to reach net-zero emissions by 2050. In the meantime, UMC has obtained admission into RE100, becoming the second semiconductor wafer foundry in this initiative, and committed to use 100% renewable energy by 2050 by setting progressive goals of 25% by 2025 and 50% by 2030.</p> <ul style="list-style-type: none"> <li>• Climate Change Policy <ol style="list-style-type: none"> <li>1. Expectations to reach carbon neutral</li> <li>2. To be the low carbon solutions provider</li> <li>3. To promote the development of a low carbon economy</li> </ol> </li> <li>• Low Carbon Commitment <ol style="list-style-type: none"> <li>1. Low-carbon design process</li> <li>2. Energy efficiency optimization</li> <li>3. Installing high efficiency FCs abatement in new tools</li> <li>4. Adopting green building standard for new buildings</li> <li>5. Carbon partnerships with customers and suppliers</li> <li>6. Complete carbon footprint inventory for all fabs</li> <li>7. Investing in the green technology industry</li> </ol> </li> <li>• 2025 Greenhouse gas emission reduction related targets <ol style="list-style-type: none"> <li>1. Reduce fluorinated greenhouse gas emissions per unit product by 65%. Note: With 2010 as the base year.</li> <li>2. Reduce electricity consumption per unit product by 25%. Note: With 2015 as base year.</li> </ol> </li> </ul> <p>UMC has constructed the UMC Climate Change Risk and Opportunity Assessment tool based on multiple data points: TCFD (Task Forced on Climate-related Financial Disclosures), ISO 14090 Adaptation to Climate Change, and the assessment procedure in the UK Climate Impact Programme (UKCIP). The Climate Change Risk and Opportunity Assessment Team conducts assessments every year. The assessment is based on the aspects such as policies, regulations, changes in the market and technologies, reputation, and physical risk. The assessment result and related countermeasures are submitted to the Corporate Sustainability Committee for approval. Since 2021, UMC met the TCFD performance assessment at management level of "Pioneer" for second consecutive year, which was verified by SGS Taiwan Ltd., an endorsement of the credibility and transparency of the Company's climate change risk assessment system and disclosure. For details of greenhouse gas emissions, potential risks and opportunities of climate change, and related management and responding measures, please refer to the UMC Sustainability Report. Also, UMC disclosed relevant information through involvement in international CDP organization initiatives.</p>	None

**Promotion of Sustainable Development and Deviations from “Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies” (Continue)**

Evaluation Item	Yes	No
(4) Has the Company compiled data on its greenhouse gas emissions, water consumption, and total weight of waste over last two years, and has the Company established strategies for greenhouse gas reduction, water conservation, and waste management?	✓	
4. Social Issues		
(1) Does the Company have appropriate management policies and procedures in place according to relevant regulations and the International Bill of Human Rights?	✓	



Implementation Status	Deviations from "The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies" and Reasons
<p><b>Abstract Explanation</b></p> <p>The environmental information of UMC, such as greenhouse gas emissions, water consumption, and total weight of waste, is disclosed in the "UMC Sustainability Report" every year, which is verified by a third party. UMC has also formulated an 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. For the policy, implement measures and data of the past two years, please refer to the section "Corporate Sustainable Development-Environmental Protection, Safety and Health Management" of this annual report.</p>	None
<p>UMC Code of Conduct follows Responsible Business Alliance Code of Conduct, RBA, UN Global Compact, International Labor Office Tripartite Declaration of Principles, the OECD Guidelines for Multinational Enterprises, UN Universal Declaration of Human Rights, the UN Human Rights Norms for Business, the UN Guiding Principles on Business and Human Rights and related international standards and complies with the requirement of local laws and regulations. For scope of application and related information, please refer to the UMC Code of Conduct website at <a href="https://www.umc.com/en/Html/UMC_code_of_conduct">https://www.umc.com/en/Html/UMC_code_of_conduct</a> and UMC Human Rights Policy Declaration website at <a href="https://www.umc.com/en/Html/labor_and_human_rights#umc_human_rights_policy_declaration">https://www.umc.com/en/Html/labor_and_human_rights#umc_human_rights_policy_declaration</a>.</p> <p>Human Rights Promotion Practices:</p> <ol style="list-style-type: none"> <li>1. Conduct regular human rights risk assessments: Every year, risk identification is conducted in accordance with the "Human Rights Risk Identification Process", and surveys on corporate social responsibility related issues are sent to stakeholders including employees, communities, and government agencies through online and paper questionnaires. By collecting and analyzing the results of the surveys, issues that are concerned by the stakeholders can be better understood, which will benefit the identification of key indicators, serving as the reference for subsequent risk management.</li> <li>2. According to the results of human rights risk assessment, UMC establishes mitigation and remedial measures, identifies the human rights issues related to each department, notes management and improvement measures, and tracks the results of implementation. In 2022, there were no high-risk items to improve, and no human rights violations occurred, so no remedial measures were implemented.</li> <li>3. The total number of training hours on human rights in 2022 is 18,066.35 hours, and the completion rate of the training is 100%. In addition, to protect the basic rights and interests of workers, when major changes in operations occur, UMC will follow the relevant provisions of the Labor Standards Act in Taiwan, the Employment Act in Singapore, and the Labor Contract Law in China. To protect the human rights of workers, UMC has formulated the "Workplace Sexual Harassment Prevention Measures, Complaints and Disciplinary Regulations" and provides clear grievance procedure to protect the rights and interests of employees.</li> <li>4. Management system: UMC established the "EICC Committee (renamed RBA Committee in 2018)" in 2013 to manage human rights related issues, including labor, health and safety, environment, ethics, etc., and formulate relevant policies as well as performance targets, and regularly track and review the results of the implementation plan.</li> <li>5. The RBA Committee annually reviews whether the internal system of UMC complies with the latest RBA standards in order to fully implement the RBA Code of Conduct. The risks of each plant are assessed through the RBA-Online platform to prevent potential risks from occurring. In 2022, the RBA SAQ scores of all plants are higher than 90 points, indicating that the risk is low.</li> </ol> <p>For more details, please refer to UMC Sustainability Report 4-1 Respect Human Right section: <a href="https://www.umc.com/en/Download/corporate_sustainability_reports">https://www.umc.com/en/Download/corporate_sustainability_reports</a>.</p>	None

**Promotion of Sustainable Development and Deviations from "Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies" (Continue)**

Evaluation Item	Yes	No
(2) Does the Company declare reasonable employee welfare measures (including salary remuneration policy, regulations for leaves and others) and integrate the Company's performance with employees' reward?	✓	

Implementation Status	Deviations from "The Corporate Governance Best-Practice Principles for TWSE/TPEx Listed Companies" and Reasons
Abstract Explanation	None
<p>● Compensation and Benefits</p> <p>UMC conducts and implements reasonable employee compensation and welfare system. UMC's employee compensation is based on educational level, performance and market value, regardless of gender, race, religion, political position and marital status. The compensation is in lined with all applicable local laws and regulations in terms of minimum wage, retirement pension, leaves and other mandatory benefits to safeguard the rights of our employees. UMC is committed to providing workplace with work-life balance and offers various welfare benefits beyond what is required by statutory regulations including holidays, insurance, financial assistance for emergencies, subsidies for marriage/childbirth/funerals, discounts in designated shops and employee assistance service.</p> <ul style="list-style-type: none"> <li>■ Paid leave that is superior to local regulations <ul style="list-style-type: none"> <li>• Additional 7 days of supplemental holidays are given for colleagues to use flexibly.</li> <li>• To provide better care to newly hired female employees, UMC provides fully paid maternity leave even if the employee's period of service is less than 6 months.</li> <li>• Provide maternity leave (up from statutory 448 hours to 480 hours) and paternity leave (up from statutory 56 hours to 80 hours)</li> <li>• As a way of providing support, if the great-grandparents of an employee's spouse pass away, the employee is entitled to a funeral leave of 24 hours at full pay, which exceeds the requirements of the Labor Standards Act.</li> </ul> </li> <li>■ Health care and emergency assistance <ul style="list-style-type: none"> <li>• Regularly conduct employee health checks, plan health promotion activities, set up a health care system, and actively track and care for employee health.</li> <li>• Equipped with employee assistance programs (EAP), injury and illness treatment and care to take care of employees' health comprehensively.</li> <li>• Provide company group insurance, cancer insurance, medical insurance, accident insurance, hospitalization condolences, emergency relief funds to assist colleagues in emergency situations.</li> </ul> </li> <li>■ Diverse activities and discounts in shops <ul style="list-style-type: none"> <li>• Welfare committee holds diverse activities such as year-end party, Secretary's Day, the Company's anniversary day, Engineering's Day, one-day trip, family day, and art festival, etc.</li> <li>• Employee social club evaluations and subsidies for club activities.</li> <li>• Corporate agreements with stores all over Taiwan, provide APP for colleagues so that colleagues can enjoy discounts for food, clothing, housing and travel.</li> </ul> </li> <li>■ Parenting measures and breastfeeding environment <ul style="list-style-type: none"> <li>• To encourage employees to have more children, UMC provides measures ranging from wedding subsidy, care and nursing consultation during pregnancy, maternity leave, maternity inspection leave, exclusive parking space, priority meal pickup, maternity subsidy, unpaid parental leave, certified breastfeeding room, night shift transfer and other measures.</li> <li>• To provide comprehensive assistance, UMC signed contracts with neighboring kindergartens to take care of the day-care needs of employees' children, and assists in the registration work of the primary and secondary schools in the Science Park.</li> <li>• In cooperation with the Science Park Administration, a non-profit kindergarten will be set up to give employees more comprehensive support for family care.</li> </ul> </li> <li>■ Friendly working environment <ul style="list-style-type: none"> <li>• Staff restaurant, free shuttle bus, activity center, telecommunications/banking/insurance on-site services, convenience stores/coffee shops/bakeries, and other stores are available in offices and fabs.</li> <li>• Provide flexible working shifts and hours.</li> </ul> </li> </ul> <p>For more information on benefits, please refer to employee benefits on page 122 of this annual report.</p> <p>● UMC Diversity and Inclusion Practices</p> <p>In 2022, the Co-President &amp; CS Committee Chairman signed the Diversity and Inclusion Statement, and announced it on UMC official website. UMC encourages a diverse and inclusive culture, and respects differences of every individual. The Company makes hiring decisions based on the required professional skills, offering equal opportunities to all qualified candidates. Applicants are not treated differently for factors including their race, color, nationality, ethnicity, gender, religion, marital status, age, disability, family status, sexual orientation, or political beliefs. The Human Rights and Employee Development/Welfare Group of CS Committee is responsible for promoting and reporting on the performance and promotion of diverse workplace implementation. The methods include diversity and inclusion education and training, as well as hosting exemplary women's leadership and management sharing seminars to increase female colleagues' willingness to take on managerial positions, and gradually increase the proportion of female workers in the Company.</p> <p>In 2022, the target for the proportion of female executives was set at 10%, and the actual achievement was 11%, exceeding the original target. Targets were established for the percentage of female supervisors, with 22% targeted for 2023, 23% for 2025, and 24% for 2030.</p> <p>Diversity and Inclusion statement and related practices please refer to UMC official website: <a href="https://www.umc.com/en/Html/labor_and_human_rights#Diversity_and_Inclusion_Statement">https://www.umc.com/en/Html/labor_and_human_rights#Diversity_and_Inclusion_Statement</a>.</p> <p>● Performance-oriented Compensation System</p> <p>UMC offers salary adjustment, differentiated bonus/employee compensation and stock remuneration (employee stock option certificates, treasury shares and restricted stock award) based on individual performance, job, responsibilities and future development potential to attract, retain and motivate outstanding employees. UMC also actively joins the remuneration surveys of well-known worldwide enterprises to ensure that the overall remuneration offered by UMC is competitive in the market. The Company shall allocate no less than 5% of profit as employees' compensation for each profitable fiscal year after offsetting any cumulative losses. (Please refer to Employees' and Directors' Compensation in the section Capital and Operations Overview in this report).</p> <p>Moreover, in order to internalize the concept of ESG into the core of operation and enhance employees' sense of responsibilities for corporate sustainability and risk management, ESG targets are set and associated with employees' variable compensation. Through the alignment of interests of employees and the Company, corporate sustainability can become a common goal. In 2022, UMC has achieved the ESG targets and the allocation of employee profit sharing percentage would be increased accordingly, so that all employees can enjoy the benefit of ESG achievement.</p>	

**Promotion of Sustainable Development and Deviations from "Sustainable Development 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	None
<p>UMC has three categories of safety and health education based on job characteristics:</p> <ul style="list-style-type: none"> <li>• Company-wide general education and training in safety and health.</li> <li>• Plant safety and health education organized by each fab.</li> <li>• Safety and health related training formulated by each division according to divisional characteristics.</li> </ul> <p>"Safety First. Prioritize Safety Over Production" is UMC's commitment to employees. The Company plans implements necessary safety and health education and training for work and prevention of disasters. Training is divided into company-wide general education courses, factory-run courses, and department-specific courses, so that employees can develop safety awareness and knowledge, with the aim of reducing accidents caused by unsafe behavior. In addition to regular courses, safety-related training courses for specific events or major cases are also introduced occasionally. In 2022, UMC fabs in Taiwan and Singapore have offered 2,287 classes, attracting a total of 47,451 person-times 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>UMC's headquarters and fabs have ISO 14001 and ISO 45001 certification, and the headquarters and Taiwan fabs have passed Taiwan's occupational safety and health management system (TOSHMS) certification. ISO 14001, ISO 45001 and TOSHMS certification are valid to November 15, 2025.</p> <p>In 2022, Taiwan and Singapore fabs had a total of 13 employee occupational incidents, accounting for 0.08% of the total number of employees.</p> <p>For any occupational incident, the accident department must fill in the UMC Incident Report System to analyze and explain the root cause of the incident, propose prevention actions for the root cause, and track the improvement measures through the system to prevent similar incidents from happening again.</p> <p>UMC actively promotes healthy workplace related management and promotion and charity activities. In 2022, UMC promoted a healthy workplace lifestyle themed "Health and safe year of 2022" to create a healthy living workplace. To comply with COVID-19 restrictions and minimize the gathering of individuals, on-site health promotion activities were modified accordingly. The results in 2022 are as follows:</p> <ol style="list-style-type: none"> <li>1. The themed health promotion activities drew the interest of 13,700 individuals, but the actual number of participants was 3,993. The overall satisfaction rate for all events was 97%.       <ol style="list-style-type: none"> <li>A1, "Let's Relieve Pressure Together"           <ul style="list-style-type: none"> <li>• To combat the spread of COVID-19, the health center has been promoting health education on the Company's homepage and electronic bulletin board, providing updated knowledge to strengthen epidemic prevention and correct hygiene concepts. A total of more than 54 articles on epidemic prevention concepts and hygiene habits were posted in 2022.</li> </ul> </li> <li>A2, "Let's Protect Employees' Health Together"           <ul style="list-style-type: none"> <li>• Daily reporting of body temperature was mandatory for employees, and any abnormal readings were monitored by the health center. The completion rate of regular track and care is 100%.</li> <li>• Through the COVID-19 case notification system for collection and control, the health center provides regular follow-up care, education, and hospital referrals when needed.</li> </ul> </li> <li>A3, "Let's Get Health Examination Together"           <ul style="list-style-type: none"> <li>• The "Stay Healthy, Stay Powerful! - Step Count Challenge" was organized, and 1,556 individuals from Hsinchu and Tainan sites completed the health questionnaire. The results showed that most of the employees did not have regular exercise habits (63% exercised occasionally, 26% exercised more than three days a week, and 11% exercised daily). A total of 117 people reached the standard, and the total number of registered steps reached 90,936,439, with an average of 10,906 steps per day.</li> <li>• Annual health examination: a total of 11,969 people participated in health examinations in Hsinchu and Tainan sites; the satisfaction score was 94% in Hsinchu headquarters, 92% in other fabs in Hsinchu, and 92% in Tainan.</li> <li>• A total of 366 qualified middle-aged and elderly employees completed advanced health examinations and received additional subsidies.</li> </ul> </li> <li>A4, "Let's Care and Improve Our Health Together"           <ul style="list-style-type: none"> <li>• All abnormal items were reviewed and monitored to eliminate any potential risk to life, and the completion rate reached 100%.</li> </ul> </li> </ol> </li> <li>2. 5,072 person-times employees consulted with in-house physicians.</li> <li>3. 496 person-times employees donated blood, totaling 759 bags of blood.</li> <li>4. 631 female employees received women 3-in-1 health exam, and the satisfaction rate was 96% in Hsinchu and 95% in Tainan.</li> <li>5. 772 received abdominal ultrasound examination, and the satisfaction rate was 96.4% in Hsinchu and 97% in Tainan.</li> <li>6. 571 received flu vaccination, and the satisfaction rate was 97.7% in Hsinchu and 98% in Tainan.</li> <li>7. Emergency personnel had a total of 411 health management consultations, achieving a 100% consultation rate.</li> <li>8. There were 1,621 cases of nursing care and requests for first aid assistance.</li> <li>9. There were 1,950 new employee health examinations.</li> <li>10. Respiratory protection was provided to 964 employees.</li> <li>11. 17 individuals underwent interviews and assessments to evaluate potential human hazards. All assessment interviews were fully conducted, and it was determined that the incidents were not work-related. As a result, all 17 cases were closed.</li> <li>12. All middle-aged and elderly workers have completed health consultations and received guidance recommendations.</li> </ol>	

**Promotion of Sustainable Development and Deviations from “Sustainable Development 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><b>Abstract Explanation</b></p> <ul style="list-style-type: none"> <li>Employee health care The Company provides new employees with physical examinations and annual health check-ups, and subsequently conducts health management based on the results of these examinations, and the special operation inspection personnel are classified for case-by-case management. Besides, the Company cooperates with medical institutions to hire on-site doctors to provide health consultation services to employees. Effective health risk management and case management are implemented for all employees with abnormal test results. They are also included in the information system for monitoring and are integrated in the "health care system," thereby achieving 100% care rate.               <ol style="list-style-type: none"> <li>In 2022, a total of 11,969 employees in the Company received physical check-up, and the satisfaction score was 94% in Hsinchu headquarters, 92% in other fabs in Hsinchu, and 92% in Tainan.</li> <li>Health examination reports and online questionnaire outcomes were classified according to the risk levels. Health management and consultation by on-site doctors are then arranged accordingly to achieve 100% follow-up care.</li> </ol> </li> <li>Employee consulting and assistance program To enhance the physical, mental, and spiritual health of employees, 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. UMC's promotion and cultivation of a healthy workplace is deeply recognized by enterprises. At present, the UMC headquarters and other sites have obtained the "Excellent Self-Managed Healthy Workplace" certification, and their health promotion labels are within the deadline. It demonstrates UMC's active protection of employee health and concern for their physical and psychological well-being.</li> </ul>	
<p>According to the training blueprint corresponding to different job categories and levels, UMC encourages all colleagues (including formal, dispatched and temporary staff) to continue to learn and develop their personal careers in line with industry trends, and will continue to provide transfer incentives and implement the internal transfer system. UMC has set management skills or core professional competencies requirements for managers and colleagues at all levels. Internal training courses are designed based on job function models to plan corresponding development programs. In addition to mandatory training courses, employees can also participate in various selective training courses according to their personal needs and future development considerations, in order to prepare in advance for career planning and development in the next stage. For more information, please refer to Page 120, Education and Training.</p>	None
<p>UMC is committed to strengthening world-class process technology, manufacturing capability, and excellent service to enhance customer service value. UMC has always valued customers as partners and created an exceptional business philosophy based on the spirit of "United for Excellence." UMC works closely with customers to achieve win-win results, and customer satisfaction as one of the Company's key objectives. Customer-oriented behavior is to provide a complete solution to satisfy the customer's requirements for product and service quality. To achieve this end, UMC has introduced the MyUMC, MyHJTC (for HJ only) and MyUSC (for USCXM only) online service platforms for customers to easily check product status including the shipping date and product quality data. In addition, the website also provides an Engineering Data Analysis function for customers to analyze product data as needed. UMC has also incorporated the Voice of Customer (VOC) instant online complaint system within the MyUMC, MyHJTC, MyUSC and MyUSJC service platforms, which allows customers to make requests, comments, or suggestions about the Company's products or services at any time. The system replies to customers within one working day to inform them their requests have been passed to corresponding divisions. A dedicated person will then be assigned to the customer, who can check the progress at any time on the website. 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 continuous and comprehensive improvement of the Company's product competitiveness and service quality. For consumer protection mechanisms, in order to strictly protect customer-related information, UMC has established 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 documents are utilized and processed appropriately. In the future, UMC will continue to accumulate intellectual assets, provide better products and services, work with customers to tackle more difficult challenges in technology development and production, and achieve win-win results with customers. UMC is ISO 9001 &amp; IATF 16949 &amp; 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. UMC adheres to the principle of continuous improvement. Through cultivating awareness among employees, improving quality control and technical improvement in design and production, offering products that meet regulatory and customer demand for harmful substance control, UMC strives to fulfill its responsibility as a corporate citizen to protect the environment and the health and safety of the global community.</p>	None

**Promotion of Sustainable Development and Deviations from “Sustainable Development Best Practice Principles for TWSE/TPEX Listed Companies” (Continue)**

Evaluation Item	Yes	No
(6) Does the Company have a supplier management policy to regulate suppliers on concern related to environmental protection, labor and human rights, safety, and health?	✓	
5. Does the Company prepare a Sustainability Report that complies with international guidelines and is verified by a third party?	✓	
6. If the Company has established the sustainable development principles based on “Sustainable Development 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 sustainable development practices:		



Implementation Status	Deviations from "The Corporate Governance Best-Practice Principles for TWSE/TPEX Listed Companies" and Reasons
<b>Abstract Explanation</b>	
<p>Through the supplier sustainability evaluation mechanism and UMC's Supplier Code of Conduct, the Company strives to enhance suppliers' compliance of labor rights, workplace safety, environmental protection, business ethics, and management system. By conducting annual assessments, the Company is able to track suppliers' progress and take corresponding measures, reducing the risk of operational interruptions.</p>	None
<p><b>Establishing Sustainable Supply Chain</b>            In 2022, UMC further enhanced its supply chain management, implementing sustainability initiatives and strengthening the guidance for local suppliers to establish sustainable supply chain capability. UMC continued to guide suppliers in establishing diversified and localized capabilities. To enhance the awareness of procurement personnel on sustainability initiatives and sustainable supply chain management, UMC held a number of educational training courses in 2022 to accelerate the development of sustainable supply chain management.            In 2022, USJC held a sustainability sharing session to promote UMC's sustainability policy to suppliers in Japan.</p>	
<p><b>Building Green Supply Chain and Promoting Circular Economy</b>            UMC believes that green supply chain is a critical part of the implementation of the corporate sustainability blueprint. As a corporate leader, the Company actively promotes and urges suppliers to participate in the circular economy.            UMC sell scraps and waste material to decrease waste and promote effective reuse of resources. In 2022, revenue from the project reached a new high of NT\$151 million due to rising wafer unit price and strong Taiwan dollar appreciation. It is estimated that by 2025, the cumulative sales will exceed NT\$500 million.</p>	
<p><b>Environment and Climate change</b>            UMC views the development of green products as its responsibility and promotes green procurement starting from upstream manufacturing to conserve resources and protect the environment. Green procurement amount in 2022 reached NT\$144 million.</p>	
<p><b>Social Impact Projects</b>            To ensure that UMC's suppliers are diligent about their supply chain management, and are taking actions to manage their suppliers and ensure their suppliers are abiding by the Company's ethics agreement. UMC announce on the e-Procurement platform (supplier platform):            Suppliers are required to 80% of key suppliers (UMC's Tier 2 suppliers) should comply the Supplier Code of Conduct by 2025 and 30% of key suppliers (UMC's Tier 2 supplier) to fall under supply chain management by 2025.            In 2022, 44% of key suppliers (UMC's Tier 2 supplier) are compiled the Supplier Code of Conduct, 20% of key suppliers (UMC's Tier 2 supplier) are under supply chain management.            For more information, please refer to the ESG report chapter 1-3 Building Sustainable Supply Chain: <a href="https://www.umc.com/en/Download/corporate_sustainability_reports">https://www.umc.com/en/Download/corporate_sustainability_reports</a>.</p>	
<p>As of 2022, UMC has publicly issued a non-financial related sustainability annual report for 22 consecutive years. At the same time, the 2021 UMC Sustainability Report is the 17th annual report disclosing UMC's corporate sustainable development. This report is compiled according to the GRI Standards of the Global Reporting Initiative, the Semiconductors Sustainability Accounting Standard 2018 issued by the Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-related Financial Disclosures (TCFD), and is verified by SGS Taiwan Ltd. in accordance with the Account Ability 1000 Assurance Standard v3 Type 2, High level assurance. In 2023, UMC will compile the 2022 UMC Sustainability Report that will address major sustainable issues and stakeholder concerns, and will commission a third party to verify the report.</p>	None
<p>For details of the Sustainable Development Best Practice Principles formulated by UMC, please refer to <a href="https://www.umc.com/en/Download/major_internal_policies">https://www.umc.com/en/Download/major_internal_policies</a>. The Company's sustainable operations show no inconsistency from the Principles. For other details, please refer to the "Corporate Sustainable Development" of this Annual Report and the UMC Sustainability Report.</p>	
<p>UMC is a current member of Business Council for Sustainable Development of Taiwan (BCSD Taiwan), 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 sustainable development policies.            For other details, please refer to the UMC Sustainability Report and the Corporate Sustainability webpage at <a href="https://www.umc.com/en/CSR/sustainability_overview">https://www.umc.com/en/CSR/sustainability_overview</a> on UMC website.</p>	

## Climate-related Information of TWSE/TPEX Listed Companies

### Disclosure of climate-related information

Item	Implementation status
1. Describe the supervision and governance of the Board and the management team regarding climate-related risks and opportunities.	UMC's Board of Directors and Functional Committees oversees climate change risks, opportunities, coping strategies, and related promotion plans. The Enterprise Risk Management Committee coordinates related departments within the Company to jointly review the Company's internal/external risks (including climate change risks), formulates countermeasures for material risks. The Corporate Sustainability Committee responsible for proposing and implementing the sustainable development vision and mission, related management approach and specific promotion plans (including climate change).
2. Describe how the identified climate risks and opportunities affect the business, strategy, and finances of the company (in the short, medium, and long term).	According to UMC Climate Change Risk and Opportunity Assessment Methodology, short-term is defined as within the next 3 years, medium-term is defined as within the next 10 years, and long-term is defined as more than 10 years in the future. UMC formulates response plans for the identified major risks and opportunities. Taking carbon tax/fee as an example, it is expected that operating costs will gradually increase due to rising rates, resulting in a decline in profits. Therefore, the Company has set a net zero emission target in 2050, and actively promotes greenhouse gas reduction plans to reduce potential financial impacts. For other risk and opportunity information, please refer to the Company's Sustainability Report.
3. Describe the impact of extreme climate events and transitional actions on company finances.	For the identified climate risks and opportunities, UMC has taken into account the potential financial impacts on revenue, costs, assets, and other aspects. For relevant information, please refer to the Company's Sustainability Report.
4. Describe how climate risk identification, assessment and management processes are integrated into the overall risk management system.	Under the guidance of the enterprise risk management policy, the Enterprise Risk Management Committee is responsible for coordinating relevant divisions to identify internal and external risks for the Company. The Committee reviews the risk items related to but not limited to strategy, operations, finance, hazards, assesses the likelihood of occurrence and severity, defines the priority and risk level of risk items, and initiates response plans for major risk items. Periodic reviews of risk items are conducted to identify changes in risk level and to ensure the effectiveness of risk management plans and related control operations, and to grasp the business opportunities associated with risks to formulate company development strategies. The Enterprise Risk Management Committee reports to the ESG Steering Committee to ensure alignment with the Company's sustainability strategy; and reports to the Board of Directors at least once a year to ensure alignment with the risk management policies, and implementation and effectiveness of risk management measures. UMC also incorporates internal audit and internal control functions to ensure that the risks associated with operations are effectively controlled.
5. If a scenario analysis is adopted for the assessment of resilience to climate change risks, then the scenarios, parameters, assumptions, and analysis factors used, as well as the major financial impacts should be explained.	UMC conducts climate-related scenario analysis, including transitional scenarios based on National Determined Contributions (NDCs) and Science Based Target (SBT), and physical scenarios such as RCP 2.6, RCP 8.5, SSP1-1.9, SSP5 -8.5. UMC also conducts risk and opportunity analysis for policies, regulations, markets and technologies transitions, business reputation and physical risks. For relevant parameters, assumptions, analysis factors and major financial impact information, please refer to the Company's Sustainability Report.
6. If there is a transition plan for managing climate-related risks, please describe the content of the plan, as well as the indicators and goals used to identify and manage physical risks and transition risks.	In order to achieve net zero emissions by 2050, UMC has drawn up a low-carbon transition plan to cover direct emissions from fab operations (Scope 1), indirect emissions from energy consumption (Scope 2), and indirect emissions from value chain (Scope 3). The three resolutions are: (1) Persistent and proactive carbon emissions reduction: Through continually developing advanced foundry process technologies, enhancing productivity and improving energy efficiency, UMC is able to minimize carbon emissions in both manufacturing stage of wafers and using stage of IC end products; (2) 100% renewable energy: A 3-stage objective of 25% by 2025, 50% by 2030, and 100% by 2050 is set to substantially increase the proportion of consuming renewable energy, UMC will also invite its value chain to support the low-carbon energy transition; (3) Investment in net-zero technologies: UMC commits to invest in net zero emissions technologies and participate in Carbon Offset Projects to remove and offset carbon emissions that are inevitable or still subject to technical restrictions. For relevant indicators and targets, please refer to the Company's Sustainability Report.
7. If internal carbon pricing is used as a planning tool, the basis for setting the price should be stated.	UMC has considered the international carbon market prices, the carbon prices of GHG relevant regulations and the costs of reducing greenhouse gas emissions of the Company to set an internal carbon price. We use it as a reference for carbon reduction management and planning.
8. If climate-related goals are set, information such as the activities involved, the scope of greenhouse gas emissions, planning schedule, and annual progress should be disclosed. If carbon offsets or renewable energy certificates (RECs) are used to achieve the relevant goals, the source and quantity of carbon reductions for carbon offsets or the quantity of renewable energy certificates (RECs) should be explained.	In 2021, UMC has announced to achieve RE100 and net zero emissions by 2050. We also established climate-related targets such as water consumption, energy use, greenhouse gas emissions, and the technology development of low energy consume products. For detailed content and status, please refer to the Company's Sustainability Report.
9. Greenhouse gas inventory and assurance results.	The greenhouse gas emissions inventory and assurance results are shown in table on the following page.

## Greenhouse gas inventory and assurance results

Item	Implementation status
Basic company information	The following shall be disclosed in accordance with the Sustainable Development Guidemap for TWSE and TPEX Listed Companies:
<ul style="list-style-type: none"> <li>■ Companies with a capital amount of NT\$10 billion or more, steel industry, cement industry</li> <li>□ Companies with a capital amount of NT\$5 billion or more, but less than NT\$10 billion</li> <li>□ Companies with a capital amount of less than NT\$5 billion</li> </ul>	<ul style="list-style-type: none"> <li>■ Parent-company-only inventory</li> <li>□ Subsidiary inventory with a consolidated financial report</li> <li>□ Parent-company-only assurance</li> <li>□ Subsidiary assurance with a consolidated financial report</li> </ul>

## UMC GHG Emissions in 2022

Scope 1	Total Emissions (ton CO <sub>2</sub> e)	Intensity (ton CO <sub>2</sub> e/million NT\$)	Assurance Body	Assurance Results
Parent company	591,781	2.82	DNV	The Scope 1 emission is free from material discrepancies in accordance with the verification criteria of ISO14064-1:2018.
Subsidiary	274,207	3.92	SGS/DNV(Note 3)	
Total	865,988	3.09	-	
Scope 2	Total Emissions (ton CO <sub>2</sub> e)	Intensity (ton CO <sub>2</sub> e/million NT\$)	Assurance Body	Assurance Results
Parent company	1,373,914	6.54	DNV	The Scope 2 emission is free from material discrepancies in accordance with the verification criteria of ISO14064-1:2018.
Subsidiary	383,919	5.49	SGS/DNV(Note 3)	
Total	1,757,833	6.28	-	
<b>Scope 3</b>	For details of scope 3 emissions, please refer to the Company's Sustainability Report.			

Note 1: According to the regulations of Sustainable Development Roadmap for TWSE/TPEX Listed Company, UMC shall at least disclose the parent company's inventory information this year, and UMC discloses the inventory and assurance information of the parent company and four subsidiaries base on the current operating status.

Note 2: The statistics of subsidiaries covers HJ, USCXM, Wavetek and USJC.

Note 3: The assurance body of HJ and USCXM is SGS-CSTC Standards Technical Services Co., Ltd.; Wavetek and USJC are issued by DNV Business Assurance Co., Ltd..

Note 4: For details of the verification statement please refer to: [https://www.umc.com/upload/media/06\\_About/6\\_Certificates/9\\_Greenhouse\\_Gases\\_Emissions\\_Verification/ISO14064\\_1.pdf](https://www.umc.com/upload/media/06_About/6_Certificates/9_Greenhouse_Gases_Emissions_Verification/ISO14064_1.pdf)

## Ethical Corporate Management and Deviations from “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 have an ethical corporate management policy approved by the Board of Directors, clearly state the policy and procedures in its guidelines and external documents, and demonstrate commitment from the Board of Directors and top management to implement the policy?	✓	
(2) Does the Company have 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 have 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 review 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 have an exclusively (or concurrently) dedicated unit supervised by the Board of Directors to be in charge of corporate integrity, implementation, and regularly reports to the Board, at least once a year?	✓	
(3) Does the Company have policies to prevent conflicts of interest and provide appropriate communication channels?	✓	
(4) Has the Company established effective accounting and internal control systems to facilitate ethical corporate management, and has the internal Audit Division formed and executed an audit plan based on unethical conduct risks, or engaged an external CPA to implement 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 <a href="https://www.umc.com/en/Html/ir_corporate_governance">https://www.umc.com/en/Html/ir_corporate_governance</a> and <a href="https://www.umc.com/en/Html/UMC_code_of_conduct">https://www.umc.com/en/Html/UMC_code_of_conduct</a>.</p>	None
<p>The Employee Code of Conduct and the UMC Ethical Corporate Management Best Practice Principles are provisions for regulating moral integrity, conflict of interest, and business conduct. 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 ESG Steering 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. (Report Date is Oct. 26, 2022.) Ethical management is only one part of corporate sustainability. For further information, please refer to UMC website at <a href="https://www.umc.com/en/Html/UMC_code_of_conduct">https://www.umc.com/en/Html/UMC_code_of_conduct</a>.</p>	None
<p>Please refer to Employee code of conduct at <a href="https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Employee_Code_of_Conduct-e.pdf">https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Employee_Code_of_Conduct-e.pdf</a> for policies and reporting channels.</p>	None
<p>In order to facilitate ethical corporate management and issue a reliable, transparent and compliant report, UMC established an effective accounting system and designed relevant internal control systems based on evaluation results of risks including unethical conduct, code of conduct and regulations compliance. UMC Audit Division directly under the Board of Directors/Audit Committee performs relevant operation audits according to annual audit plans and regularly reports the audit results and improvement follow-up to the Board of Directors/Audit Committee. And through annual internal control and self-assessment, UMC has also conducted a self-review of all fabs, departments and subsidiaries operation to achieve the effectiveness of internal control systems' design and implementation.</p>	None
<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>	
<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 as regulatory guidelines for all its directors, managers and employees. These regulations aim to 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 work of all employees through physical and online training courses and tests. In 2022, 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. Channel for reporting complaints		
(1) Does the Company have a system to process complaints and offer reward incentives, a hotline for reporting complaints, and a designated personnel to follow up with complaints?	✓	
(2) Does the Company have standard operating procedures for investigating complaints, follow-up actions, and ensuring the complaints are handled in a confidential manner?	✓	
(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 its 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	
Article 6 of the Employee Code of Conduct describes measures to prevent ethics violations, and to protect whistleblowers and to prevent retaliatory action. Employees or any whistleblowers 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.	None
After receiving a complaint, UMC will convene an investigative team to investigate the violation described in the report. Once the investigation results are confirmed, 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 violations or frauds, or participating in the investigation, from unfair treatment or retaliation. For details, please refer to Employee code of conduct at <a href="https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Employee_Code_of_Conduct-e.pdf">https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Employee_Code_of_Conduct-e.pdf</a> .	None
The Company will protect any employee reporting ethics violation or fraud, or participating in the investigation, from unfair treatment or retaliation. For details, please refer to webpage at <a href="https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Employee_Code_of_Conduct-e.pdf">https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Employee_Code_of_Conduct-e.pdf</a> .	None
UMC discloses its principles on ethical corporate management, relevant regulations and status of implementation on its website and MOPS. In addition, UMC discloses relevant information in its Corporate Sustainability Report.	None
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. UMC has not have any discrepancy between the regulations and our implementation.	
UMC abides by the laws and regulations, and regularly reviews and revises the Ethical Corporate Management Best Practice Principles. For other important information that is helpful to understand the Company's Ethical Corporate Management implementation status, please refer to the information of Specific Measures for Ethical Management.	

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

**Specific Measures for Ethical Management in 2021-2022**

Item	Implementation Status
Legal Compliance	<ul style="list-style-type: none"> <li>• UMC's cross-division regulatory compliance is coordinated by the Global Compliance Division, which is established in 2022, and other laws and regulations are regularly reviewed by relevant divisions.</li> <li>• UMC pays close attentions to the EU General Data Protection Regulation, the US California Consumer Privacy Act, and the Personal Information Protection Law of China since 2018, and the Global Compliance Division will coordinate overall regulatory compliance with these laws and regulations. The Global Compliance Division held a lecture of "Privacy Laws" on November 17 of 2022, and the training material therefor can be found on the UMC website.</li> <li>• With respect to the frequent rule changes of the Export Administration Regulations of the United States since 2020, and the new export control related laws or regulations of China to counteract the changed Export Administration Regulations of the United States since 2021, the Global Compliance Division will coordinate overall legal compliance in this regard. Also, the training material for the export control can be found on the UMC website, and the online training and test have been conducted regularly since 2020.</li> <li>• UMC also pays close attentions to the global laws and regulations that related to the anti-corruption, and not only conduct the online training and test for anti-corruption regularly since 2019, but also publish the UMC Anti-Corruption Statement on the UMC website in 2022. The Global Compliance Division conducted an online training and test for insider trading in the third quarter of 2022, and as a result, 11,120 employees completed the online training and test, corresponding to 99.1% of the targeted participants.</li> <li>• In order to continuously strengthen the awareness of and emphasize the importance of the insider trading, and to prevent employees and managers from unknowingly violating laws or regulations in connection with insider trading, the training material for insider trading can be found on the UMC website, and the online training and test have been conducted regularly since 2020. The Global Compliance Division conducted an online training and test for insider trading in the second quarter of 2022, and as a result, 9,613 employees completed the online training and test, corresponding to 98.9% of the targeted participants.</li> </ul>
UMC Code of Conduct Implementation	<ul style="list-style-type: none"> <li>• The content of the Codes is reviewed biennially: Review of the Employee Code of Conduct was completed in April 2021.</li> <li>• Major violations of employee ethics are reported to the Audit Committee on a quarterly basis. In 2022, no major ethical violations were reported.</li> <li>• Employee Code of Conduct education and testing were conducted in August 2022, with 100% completion rate.</li> <li>• Employee Code of Conduct training course for new employees; 358 participants and a total of 537 hours in 2022.</li> </ul>
UMC fair competition, intellectual property rights violations	<ul style="list-style-type: none"> <li>• UMC has reported the litigation cases in each quarter of 2022 to the Audit Committee.</li> <li>• The UMC Antitrust Policy for promoting fair competition can be found on the UMC website since 2011, and the online training and test have been conducted regularly since 2013. The Global Compliance Division held a lecture of "Competition Laws and Antitrust Laws" on November 24 of 2022, and conducted an online training and test for competition laws and antitrust laws in the fourth quarter of 2022.</li> <li>• In order to intensify the sense of the trade secret and the copyright, the training materials for both topics are provided to all the employees and managers on the UMC website, and the online training and test have been conducted regularly since 2021. The Global Compliance Division held a lecture of "Trade Secret Laws" on September 14 of 2022, and conducted an online training and test for trade secret laws in the second quarter of 2022, and as a result of the online training and test, 8,080 employees completed the online training and test, corresponding to 100% of the targeted participants.</li> <li>• Furthermore, in order to strengthen the importance of trade secret, the course "Trade Secret Laws" has been held for the managers of the first level or above regularly since 2018. The course "Trade Secret Laws" took place on December 8 of 2022, and a total of 75 managers participated in this two-hour course, corresponding to 100% of the targeted participants.</li> <li>• For intellectual property rights education, three weekly training courses are offered to new employees: Introduction to UMC Intellectual Property Rights, Trade Secret and Basic Legal and Risk Awareness on the Incoming Data.</li> <li>• Introduction to UMC Intellectual Property Rights training course for new employees: 1,716 participants and a total of 429 hours in 2021, and 1,704 participants and a total of 426 hours in 2022.</li> <li>• Trade Secret training course for new employees: separate from UMC Intellectual Property Rights as an individual course since December 2018 with 1,716 participants and a total of 274.6 hours in 2021, and 1,704 participants and a total of 272.6 hours in 2022.</li> <li>• Basic Legal and Risk Awareness on the Incoming Data training course for new employees: implemented since April 2018. A total of 1,716 participants and a total of 429 hours in 2021, and 1,704 participants and a total of 426 hours in 2022.</li> </ul>
Financial reporting related internal control	<ul style="list-style-type: none"> <li>• Annual audit by external auditors and internal Audit Division.</li> <li>• Results of internal audits for 2022 were reported at the Audit Committee/Board of Directors meetings on a quarterly basis.</li> </ul>

**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 can inquire about and download Corporate Governance related information from: [https://www.umc.com/en/Html/ir\\_corporate\\_governance](https://www.umc.com/en/Html/ir_corporate_governance). For corporate governance implementation status, please refer to pages 35-83 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: [https://www.umc.com/en/Download/major\\_internal\\_policies](https://www.umc.com/en/Download/major_internal_policies).

**Code of Ethics for Directors and Officers**

Please refer to the website

[https://www.umc.com/upload/media/08\\_Investors/Corporate\\_Governance/Major\\_Internal\\_Policies/Code\\_of\\_Ethics.pdf](https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Code_of_Ethics.pdf).

**Employee Code of Conduct**

Please refer to the website

[https://www.umc.com/upload/media/08\\_Investors/Corporate\\_Governance/Major\\_Internal\\_Policies/Employee\\_Code\\_of\\_Conduct-e.pdf](https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/Employee_Code_of_Conduct-e.pdf).



## UMC Ethical Corporate Management Best Practice Principles

Please refer to the website

[https://www.umc.com/upload/media/08\\_Investors/Corporate\\_Governance/Major\\_Internal\\_Policies/UMC\\_Ethical\\_Corporate\\_Management\\_Best\\_Practice\\_Principles\\_eng.pdf](https://www.umc.com/upload/media/08_Investors/Corporate_Governance/Major_Internal_Policies/UMC_Ethical_Corporate_Management_Best_Practice_Principles_eng.pdf).

### 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 2022.

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. An 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, 2022, 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. 22, 2023, 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: SC Chien



President: Jason Wang



Feb. 22, 2023

#### 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 any special audit of the internal control system in 2022.

## 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' Meeting and the Board of Directors' Meetings

### The Major Resolutions from the Shareholders' Meeting

The Company's 2022 Annual General Meeting was held at No.2-1, Hsin-Ann Rd., Hsinchu Science Park, Auditorium of Hsinchu Science Park Bureau on May 27, 2022. 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 2021 Business Report and Financial Statements.	• In 2021, UMC's sales revenue was NT\$213,011,018 thousand, and full-year net income reached NT\$55,780,255 thousand, leading to an earnings per share of NT\$4.57.
2.	Acceptance of the 2021 Earnings Distribution Chart.	• Approved and acknowledged.
3.	Approval of the cash distribution from capital surplus.	• Implemented in accordance with resolution, and the ex-dividend record date was set for June 28, 2022, and cash dividend for common shares was paid on July 14, 2022.
4.	Approval of the issuance of Restricted Stock Awards.	• Implemented in accordance with resolution and issued gratuitously 23,059,500 shares of common stock on December 5, 2022.
5.	Approval of the amendment of the Company's "Acquisition or Disposal of Assets Procedure".	• Implemented in accordance with resolution.

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

### The Major Resolutions from the Board of Directors' Meeting

Meeting Date	Major Resolutions
2022.02.24	<ul style="list-style-type: none"> <li>• Approved the 2021 Business Report and Financial Statements.</li> <li>• Approved the 2021 distributable compensation for employees and directors.</li> <li>• Approved the cash distribution from capital surplus.</li> <li>• Approved the 2021 Earnings Distribution Chart.</li> <li>• Approved the issuance of Restricted Stock Awards.</li> <li>• Approved the date of convening the 2022 Annual General Meeting, meeting agenda and submission period for shareholder proposals.</li> <li>• Approved capital budget execution.</li> <li>• Approved the Cancellation of Restricted Shares to Employees Stock Awards.</li> <li>• Approved UMC's donation to UMC Science and Culture Foundation.</li> </ul>
2022.04.27	<ul style="list-style-type: none"> <li>• Approved the Q1, 2022 Consolidated Financial Statements.</li> <li>• Approved capital budget execution.</li> <li>• Approved the acquisition of UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.</li> </ul>
2022.06.01	<ul style="list-style-type: none"> <li>• Approved the record date for 2021 cash dividend.</li> </ul>
2022.07.27	<ul style="list-style-type: none"> <li>• Approved the Q2, 2022 Consolidated Financial Statements.</li> <li>• Approved capital budget execution.</li> </ul>
2022.10.26	<ul style="list-style-type: none"> <li>• Approved the Q3, 2022 Consolidated Financial Statements.</li> <li>• Approved capital budget execution.</li> <li>• Approved the Cancellation of Restricted Shares to Employees Stock Awards.</li> </ul>
2022.12.14	<ul style="list-style-type: none"> <li>• Approved capital budget execution.</li> </ul>
2023.02.22	<ul style="list-style-type: none"> <li>• Approved the 2022 Business Report and Financial Statements.</li> <li>• Approved the 2022 distributable compensation for employees and directors.</li> <li>• Approved the 2022 Earnings Distribution Chart.</li> <li>• Approved to change Certified Public Accountant due to the internal reorganization of the CPA firm.</li> <li>• Approved the date of convening the 2023 Annual General Meeting, meeting agenda and submission period for shareholder proposals.</li> <li>• Approved capital budget execution.</li> <li>• Approved UMC's donation to UMC Science and Culture Foundation.</li> <li>• Approved the change of Chief internal auditor.</li> </ul>

## Major Issues of Record or Written Statements Made by Any Director Dissenting to Important Resolutions Passed by the Board of Directors during 2022 and as of the Annual Report Printing Date:

None.

## Resignation or Dismissal of Chairman, President, and Heads of Accounting, Finance, Internal Audit, Corporate Governance Officer and R&D during 2022 and as of the Annual Report Printing Date:

Title	Name	Date Assumed	Date Dismissed	Reason
Senior Director of Auditing Division	Angel Sun	2009.05.08	2023.03.30	Retirement
Senior Director of Auditing Division	Vic Yen	2023.03.31	NA	NA

Note: Annual report printing date: February 22, 2023.

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

Certification Name	Number of Employees		
	Audit	Accounting	Finance
Certified Public Accountants (CPA)	4	19	3
US Certified Public Accountants (US CPA)		5	1
Association of Chartered Certified Accountants Singapore (ACCA Singapore)		1	
Certified Internal Auditor (CIA)	1	2	
CABIAV Certificate of Certified Business Valuator		1	1

## Information of Certified Public Accountant (CPA) Fees

### The Amount of Audit and Non-audit Fees Paid to the CPA, CPA Firm and Its Affiliates, and the Content of Non-audit Service

Name of CPA Firm	Name of CPA	CPA Audit Period	Audit Fees	Non-audit Fees	Total	Remarks
Ernst & Young, Taiwan	Wan-Ju Chiu, Hsin-Min Hsu	2022.01.01~2022.12.31	61,540	7,152	68,692	

Note: Non-audit fees includes fees paid for tax compliance audit, agree upon procedure, etc.

### If the CPA Firm Was Changed, and the Audit Fees Paid in the Year of Change Was Reduced Compared with the Previous Year, the Amount of the Audit Fees Before and After the Change and the Reasons for The Change Shall Be Disclosed

None.

### If the Audit Fees Has Decreased by More than 10% Compared with the Previous Year, the Amount, Proportion and Reasons for the Decrease in Audit Fees Shall Be Disclosed

None.

## Information on Replacement of CPAs

### 1. Information Regarding the Predecessor CPAs

<b>Date of replacement</b>	<b>2023.02.22</b>		
Reason for replacement and explanation	Because of the adjustment of the CPA firm's internal job responsibilities, CPA Wan-Ju Chiu and CPA Hsin-Min Hsu were replaced by CPA Yu-Ni Yang and CPA Hsin-Min Hsu.		
Describe whether the Company or the CPAs decided to terminate or discontinue the engagement	Parties	CPAs	The Company
	Circumstances	Terminated the engagement	Not applicable
		No longer accepting (continuing) the engagement	Not applicable
If the CPAs issued an audit report expressing any opinion other than an unqualified opinion during the 2 most recent years, specify the opinion and the reasons	None		
Disagreement with the Company?	Yes	<input type="checkbox"/>	Accounting principles or practices
		<input type="checkbox"/>	Disclosures of the financial report
		<input type="checkbox"/>	Audit scope or procedures
		<input type="checkbox"/>	Other
	No	<input checked="" type="checkbox"/>	
	Specify details		
Other disclosures (Any matters required to be disclosed under sub-items d to g of Article 10.6.A)	None		

### 2. Information Regarding the Successor CPAs

<b>Name of accounting firm</b>	<b>Ernst &amp; Young, Taiwan</b>
Name of CPAs	Yu-Ni Yang and Hsin-Min Hsu
Date of engagement	2023.02.22
Subjects discussed and results of any consultation with the CPAs prior to the engagement, regarding the accounting treatment of or application of accounting principles to any specified transaction, or the type of audit opinion that might be issued on the company's financial report	None
Successor CPAs' written opinion regarding the matters of disagreement between the Company and the predecessor CPAs	None

3. The reply letter from the predecessor CPA regarding the Company's disclosures regarding the matters under Article 10.6.A and 10.6.B(c) of the Regulations.

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	2023		2022	
		Holding Increase (Decrease)	Pledged Holding Increase (Decrease)	Holding Increase (Decrease)	Pledged Holding Increase (Decrease)
Chairman & Chief Strategic Officer	Stan Hung	0	0	3,300,000	0
Director	Hsun Chieh Investment Co., Ltd.	0	0	0	0
Director	Silicon Integrated Systems Corp.	0	0	(18,800,000)	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
Independent Director	Kuang Si Shiu	0	0	0	0
Independent Director	Wen-Hsin Hsu	0	0	0	0
Director	Ting-Yu Lin	0	0	0	0
President	SC Chien	0	0	3,300,000	0
President	Jason Wang	0	0	3,300,000	0
Executive Vice President	Ming Hsu	0	0	2,135,000	1,500,000
Senior Vice President	Oliver Chang	0	0	1,650,000	0
Senior Vice President & Chief Financial Officer	Chitung Liu	0	0	650,000	0
Senior Vice President & General Counsel	Lucas S Chang	0	0	950,000	0
Vice President	TS Wu	0	0	914,000	0
Vice President	C C Hsu	0	0	1,089,000	0
Vice President	M C Lai	0	0	1,089,000	1,089,000
Vice President	S F Tzou	0	0	495,000	0
Vice President	Osbert Cheng	0	0	594,000	0
Vice President	G C Hung	(2,000,000)	0	1,089,000	0
Vice President	Steven Hsu	0	0	594,000	0
Vice President	Wenchi Ting	0	0	490,000	0
Vice President	Jerry CJ Hu	0	0	1,089,000	0
Vice President	Y S Shen	0	0	1,089,000	0

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

Unit: Shares

Title	Name	2023		2022	
		Holding Increase (Decrease)	Pledged Holding Increase (Decrease)	Holding Increase (Decrease)	Pledged Holding Increase (Decrease)
Vice President	Steven S Liu	0	0	990,000	900,000
Vice President	SR Sheu	0	0	1,089,000	0
Vice President	M L Liao	0	0	891,000	0
Vice President	S S Hong	0	0	1,089,000	0
Vice President	Francia Hsu	0	0	1,089,000	0
Vice President	Mindy Lin	0	0	475,000	0
Vice President	Linwu Kuo	0	0	0	0
Vice President & Chief Human Resources Officer	Eric Chen	0	0	769,000	0

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

Note 2: The data shown for 2022 is for the period January 1 to January 31, 2023.

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

Note 4: The Holding Increase (Decrease) data consists of shares under Trust with Discretion Reserved.

## Relationship Among the Top 10 Shareholders

Name	Shares Held		Shares Held by Spouse or Children of Minor Age		Total Shares Held in the Name of Other Persons		Relationship Between the Company's Top 10 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 depository and representative to the holders of ADRs	593,054,945	4.75	N/A	N/A	N/A	N/A	None	None	
Hsun Chieh Investment Co., Ltd. Representative: Chun Kuan	441,371,000	3.54	N/A	N/A	N/A	N/A	None	None	Director of the Company
	93,998	0.00	0	0	0	0	None	None	
Silicon Integrated Systems Corp. Representative: Cheng Chien Chien	285,380,424	2.29	N/A	N/A	N/A	N/A	None	None	Director of the Company
	1,858	0.00	0	0	0	0	None	None	
Taiwan Life Insurance Co., Ltd. Representative: Tai Ke Cheng	219,975,000	1.76	N/A	N/A	N/A	N/A	None	None	
			Data unavailable						
CTBC Bank Employee Stock Ownership Trust Account of UNITED MICROELECTRONICS CORP.	193,244,150	1.55	N/A	N/A	N/A	N/A	None	None	
Yann Yuan Investment Co., Ltd. Representative: Chun Kuan	190,000,000	1.52	N/A	N/A	N/A	N/A	None	None	
	93,998	0.00	0	0	0	0	None	None	
Labor Pension Fund	175,118,600	1.40	N/A	N/A	N/A	N/A	None	None	
Fubon Life Insurance Co., Ltd. Representative: Ming Hsing Tsai	172,449,000	1.38	N/A	N/A	N/A	N/A	None	None	
			Data unavailable						
China Life Insurance Co., Ltd. Representative: Shuo Lun Tan	167,033,000	1.34	N/A	N/A	N/A	N/A	None	None	
			Data unavailable						
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	141,409,905	1.13	N/A	N/A	N/A	N/A	None	None	

Note: The data shown above was recorded on June 28, 2022, which was the record date for the distribution of 2022 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.	433,942,340	100.00	0	0	433,942,340	100.00
Green Earth Limited	977,000,000	100.00	0	0	977,000,000	100.00
Fortune Venture Capital Corp.	607,484,748	100.00	0	0	607,484,748	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
Unitech Capital Inc.	21,000,000	42.00	4,500,000	9.00	25,500,000	51.00
Hsun Chieh Investment Co., Ltd.	1,201,773,860	36.49	0	0	1,201,773,860	36.49
Best Elite International Limited	664,966,275	100.00	0	0	664,966,275	100.00
Wavetek Microelectronics Corporation	148,112,434	79.50	3,086,936	1.66	151,199,370	81.16
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	71.86	N/A	71.86
Faraday Technology Corporation	34,240,213	13.78	4,968	0.00	34,245,181	13.78
Yann Yuan Investment Co., Ltd.	138,000,000	26.78	12,000,000	2.33	150,000,000	29.11
Sino Paragon Limited	2,600,000	100.00	0	0	2,600,000	100.00
Triknighr Capital Corporation	326,734,400	40.00	0	0	326,734,400	40.00
United Semiconductor Japan Co., Ltd.	116,246,616	100.00	0	0	116,246,616	100.00
Unimicron Technology Corp.	196,136,008	13.27	4,546,000	0.31	200,682,008	13.58

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

Note 2: The number of shares is based on the actual number of shares held on December 31, 2022.



## Capital Overview

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## Capital and Shares

### Source of Capital

Month/Year	Issue Price (Per Share)	Authorized Capital		Paid-in Capital		Remarks		
		Shares (In Thousand)	Amount (In Thousand NT\$)	Shares (In Thousand)	Amount (In Thousand NT\$)	Source of Capital	Capital Increased by Assets Other than Cash	Other
March, 2022	NT\$10	26,000,000	260,000,000	12,482,123	124,821,235	Note 1	None	None
November, 2022	NT\$10	26,000,000	260,000,000	12,481,689	124,816,895	Note 2	None	None
December, 2022	NT\$10	26,000,000	260,000,000	12,504,749	125,047,490	Note 3	None	None

Note 1: On March 14, 2022, the Hsinchu Science Park Bureau, Ministry of Science and Technology approved the capital reduction of NT\$11,241 thousand due to cancellation of the RSA. The Company's paid-in capital was decreased to NT\$124,821,235 thousand.

Note 2: On November 10, 2022, the Hsinchu Science Park Bureau, National Science and Technology Council approved the capital reduction of NT\$4,340 thousand due to cancellation of the RSA. The Company's paid-in capital was decreased to NT\$124,816,895 thousand.

Note 3: On December 14, 2022, the Hsinchu Science Park Bureau, National Science and Technology Council approved the capital increase of NT\$230,595 thousand due to issuance of new RSA for employees. The Company's paid-in capital was increased to NT\$125,047,490 thousand.

Note 4: The data shown above was gathered until February 22, 2023.

### Type of Stock

Share Type	Authorized Capital			Allotment for Stock Option Certificate (Units)
	Issued Shares(Note 1)	Un-Issued Shares	Total Shares	
Common Stock	12,504,748,984	13,495,251,016	26,000,000,000	2,000,000,000

Unit: Shares

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

Note 2: The data shown above was gathered until February 22, 2023.

### 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	16	137	1,560	959,446	2,496	963,655
Shareholding (Shares)	267,364,714	1,245,676,258	1,597,015,631	5,598,093,601	3,773,973,280	12,482,123,484
Percentage (%)	2.14	9.98	12.79	44.85	30.24	100.00

Note: The data shown above was recorded on June 28, 2022, which was the record date for the distribution of 2022 cash dividend.

## Capital and Shares (Continue)

## Shareholding Distribution Status

## Common Shares

Class of Shareholding (Unit: Shares)		Number of Shareholders	Shareholding (Shares)	Percentage (%)
1~	999	206,392	55,861,029	0.45
1,000~	5,000	551,393	1,231,339,753	9.87
5,001~	10,000	108,688	841,630,228	6.74
10,001~	15,000	34,647	439,640,711	3.52
15,001~	20,000	20,823	382,064,580	3.06
20,001~	30,000	17,128	433,601,039	3.47
30,001~	40,000	7,479	267,051,635	2.14
40,001~	50,000	4,545	210,477,262	1.69
50,001~	100,000	7,276	515,679,044	4.13
100,001~	200,000	2,873	399,718,774	3.20
200,001~	400,000	1,143	321,909,604	2.58
400,001~	600,000	356	175,353,348	1.40
600,001~	800,000	165	115,453,539	0.93
800,001~	1,000,000	113	102,723,312	0.82
	Over 1,000,001	634	6,989,619,626	56.00
Total		963,655	12,482,123,484	100.00

Note: The data shown above was recorded on June 28, 2022, which was the record date for the distribution of 2022 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	593,054,945	4.75
Hsun Chieh Investment Co., Ltd.	441,371,000	3.54
Silicon Integrated Systems Corp.	285,380,424	2.29
Taiwan Life Insurance Co., Ltd.	219,975,000	1.76
CTBC Bank Employee Stock Ownership Trust Account of UNITED MICROELECTRONICS CORP.	193,244,150	1.55
Yann Yuan Investment Co., Ltd.	190,000,000	1.52
Labor Pension Fund	175,118,600	1.40
Fubon Life Insurance Co., Ltd.	172,449,000	1.38
China Life Insurance Co., Ltd.	167,033,000	1.34
JPMorgan Chase Bank N.A., Taipei Branch in custody for Vanguard Total International Stock Index Fund, a series of Vanguard Star Funds	141,409,905	1.13

Note: The data shown above was recorded on June 28, 2022, which was the record date for the distribution of 2022 cash dividend.

## Capital and Shares (Continue)

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

In NT\$

Item		2023 (Note 8)	2022	2021	
Market Price Per Share (Note 1)	Highest	51.20	65.50	72.00	
	Lowest	40.25	35.00	43.05	
	Average	47.71	46.93	56.29	
Net Worth Per Share	Before Distribution	-	26.80	22.51	
	After Distribution	-	*	19.51	
Earnings Per Share	Weighted Average Shares (shares)	-	12,305,518,592	12,218,346,550	
	Earnings Per Share (Note 2)	-	7.09	4.57	
	Earnings Per Share (Note 3)	-	*	4.57	
Dividends Per Share	Cash Dividends (Note 4)	-	*	3.00000000	
	Stock Dividends	Earning Distribution	-	*	-
		Capital Distribution	-	*	-
	Accumulated Undistributed Dividend	-	-	-	
Return on Investment	Price/Earnings Ratio (Note 5)	-	6.51	12.35	
	Price/Dividend Ratio (Note 6)	-	*	18.81	
	Cash Dividend Yield (Note 7)	-	*	0.05	

\*Subject to change based on resolutions of the 2023 shareholders' meeting.

Note 1: Referred to TWSE website.

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

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

Note 4: Including cash dividend distributed from earnings and cash distributed from capital surplus.

Note 5: Price/Earnings Ratio = Average Market Price/Earnings Per Share.

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

Note 7: Cash Dividend Yield = Cash Dividends Per Share/Average Market Price.

Note 8: The data represented for 2023 was gathered until February 22, 2023.

Note 9: The average closing prices for years 2021, 2022 and 2023 were NT\$56.42, NT\$46.18, and NT\$47.60, respectively.

## Capital and Shares (Continue)

### Dividend Policy and Status

1. Dividend Policy in the 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, if applicable, may be distributed preferentially as preferred shares dividends for the current year, and if there is still a remaining balance, in addition to 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%.

2. The Company's operating status, funding requirements, capital expenditure forecast, changes in the overall internal and external environment, as well as shareholders' interest shall be taken into account to determine the Company's dividend policy; distribution of dividend is determined by the Board of Directors, and cash distributed to shareholders (i.e. cash dividend distributed from earnings and cash distributed from capital surplus) shall not be lower than 50% of the net increase in the Company's distributable earnings for the year, except in extraordinary situations.

#### Proposed Distribution of Dividend

The Company's proposal for 2022 earnings distribution was passed during the 13th board meeting of the 15th term. This proposal, a cash dividend of NT\$45,017,096,342 from retained earnings (NT\$3.60 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 0.2% 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 2022 distributable compensation for employees and directors was passed during the 13th board meeting of the 15th term. The distribution status is as follows:

The Company is to distribute NT\$9,160,484,673 as employee cash compensation and NT\$45,000,000 as directors' compensation.

There is no difference between the amount passed during the Board meeting and the recognized amount during 2022 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 2021:**

In Thousand NT\$

Item	Board Resolution(February 24, 2022)
Employees' compensation distributed in cash	4,770,909
Directors' compensation	25,264

Note: The actual distribution of employees and directors' compensation for 2021 was consistent with the resolutions of the Board of Directors' meeting held on February 24, 2022.

**Buyback of Treasury Stock**

(1) Completed Share Buyback Program: None.

(2) Uncompleted Share Buyback Program: None.



## Issuance of Corporate Bonds

Name of Bond	United Microelectronics Corporation 1st Unsecured Straight Corporate Bond Issuance in 2014
Issue date	June 18, 2014
Denomination	NT\$1 million
Listing and trading	Taipei Exchange
Issue price	NT\$1 million
Total amount	NT\$5,000 million; 7-year bond for NT\$2,000 million and 10-year bond for NT\$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
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	NT\$3,000 million(Note)
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

Note: NT\$2,000 million for the 7-year bond was repaid on June 18, 2021.

**Issuance of Corporate Bonds (Continue)**

<b>Name of Bond</b>	<b>United Microelectronics Corporation 1st Unsecured Straight Corporate Bond Issuance in 2017</b>
Issue date	March 24, 2017
Denomination	NT\$1 million
Listing and trading	Taipei Exchange
Issue price	NT\$1 million
Total amount	NT\$8,300 million; 5-year bond for NT\$6,200 million and 7-year bond for NT\$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
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	NT\$2,100 million (Note)
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

Note: NT\$6,200 million for the 5-year bond was repaid on March 24, 2022.

## Issuance of Corporate Bonds (Continue)

Name of Bond	United Microelectronics Corporation 2nd Unsecured Straight Corporate Bond Issuance in 2017
Issue date	October 3, 2017
Denomination	NT\$1 million
Listing and trading	Taipei Exchange
Issue price	NT\$1 million
Total amount	NT\$5,400 million; 5-year bond for NT\$2,000 million and 7-year bond for NT\$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
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	NT\$3,400 million(Note)
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

Note: NT\$2,000 million for the 5-year bond was repaid on October 3, 2022.

**Issuance of Corporate Bonds (Continue)**

<b>Name of Bond</b>	<b>United Microelectronics Corporation 1st Unsecured Straight Corporate Bond Issuance in 2021</b>
Issue date	April 22, 2021
Denomination	NT\$1 million
Listing and trading	Taipei Exchange
Issue price	NT\$1 million
Total amount	NT\$9,600 million; 5-year bond for NT\$5,500 million and 7-year bond for NT\$2,000 million and 10-year bond for NT\$2,100 million(Note)
Coupon rate	Fixed rate, 0.57% p.a., 0.63% p.a. and 0.68% p.a. for 5-year, 7-year and 10-year bonds respectively
Tenor and maturity date	5-year bond: April 22, 2026 7-year bond: April 22, 2028 10-year bond: April 22, 2031
Guarantor	None
Trustee	CTBC Bank Co., Ltd.
Underwriter	Yuanta Securities Co., Ltd. as the lead underwriter
Legal counsel	Chen & Lin Attorneys-at-Law
Independent auditor	Ernst & Young, Taiwan
Repayment	The principal of 5-year, 7-year, and 10-year bonds will be repaid respectively in April 2026, April 2028, and April 2031 upon maturity. Interest will be paid annually for both 5-year, 7-year, and 10-year bonds.
Outstanding amount	NT\$9,600 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

Note: NT\$2,100 million for the 10-year bond is green bond. Please find the Taipei Exchange website of Sustainable Bond Market Section (<https://www.tpex.org.tw/web/bond/sustainability/index.php?l=zh-tw>) for the details of proceeds and impacts.

## Issuance of Corporate Bonds (Continue)

Name of Bond	United Microelectronics Corporation 2nd Unsecured Straight Corporate Bond Issuance in 2021
Issue date	December 17, 2021
Denomination	NT\$1 million
Listing and trading	Taipei Exchange
Issue price	NT\$1 million
Total amount	NT\$5,000 million
Coupon rate	Fixed rate; 0.63% p.a.
Tenor and maturity date	December 17, 2026
Guarantor	None
Trustee	CTBC Bank Co., Ltd.
Underwriter	MasterLink Securities Corp. as a lead underwriter
Legal counsel	Chen & Lin Attorneys-at-Law
Independent auditor	Ernst & Young, Taiwan
Repayment	The principal of 5-year bond will be repaid in December 2026. Interest will be paid annually.
Outstanding amount	NT\$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)**

Type	Currency Linked Zero Coupon Exchangeable Bonds due 2026
Issue date	July 7, 2021
Face amount	US\$200,000
Listing exchange	Singapore Exchange Securities Trading Limited
Issue amount	US\$200,000
Issue size	US\$400,000,000
Coupon rate	0%
Maturity	5 years; July 7, 2026
Guarantor	-
Trustee	Citicorp International Limited
Underwriter	Citi Global Markets Limited, Nomura International (Hong Kong) Ltd.
Legal counsel	Chen & Lin Attorneys-at-law
Auditor	Ernst & Young, Taiwan
Redemption	Unless previously redeemed, exchanged, or repurchased and cancelled, the Bonds will be redeemed by the Company on the Maturity Date at an amount equal to the principal amount of the Bonds plus a gross yield at the rate of -0.625% per annum, calculated on a semi-annual basis (the "Redemption Amount"). The Redemption Amount will be converted into NT\$ based on the Fixed Exchange Rate, and this fixed NT\$ amount will then be converted using the prevailing exchange rate for payment in US\$.
Principal payable	US\$212,900,000
Redemption or early redemption clause	<p>(a) Each Bondholder shall have the right to require the Company to redeem the Bonds, in whole or in part, on the third anniversary from the Issue Date at an amount equal to the principal amount of the Bonds plus a gross yield of -0.625% per annum, calculated on a semi-annual basis (the "Put Price").</p> <p>(b) In the event that the common shares of Novatek cease to be listed or are suspended from trading for a period equal to or exceeding 30 consecutive trading days on the Taiwan Stock Exchange, each Bondholder shall have the right to require the Company to redeem the Bonds, in whole but not in part, at an amount equal to the principal amount of the Bonds plus a gross yield of -0.625% per annum, calculated on a semi-annual basis (the "Early Redemption Amount").</p> <p>(c) Upon the occurrence of a Change of Control (as defined in the Indenture) of the Company, each Bondholder 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) Each Bondholder shall exercise the redemption right and the Company shall handle such redemption in accordance with the procedure provided in the Indenture. The payment of the Put Price and the Early Redemption Amount will be made by the Company in cash on the payment date designated by the Company pursuant to the Indenture.</p> <p>(e) The Company may, at its option, redeem the bonds, in whole or in part at the Early Redemption Amount at any time after the third anniversary from the Issue Date and prior to the Maturity Date, if the closing price of the common shares of Novatek on the Taiwan Stock Exchange, converted into U.S. dollars at the prevailing exchange rate, for 20 out of 30 consecutive trading days prior to the publication of the redemption notice is at least 130% of the quotient of the Early Redemption Amount multiplied by then Exchange Price (converted into U.S. dollars at the Fixed Exchange Rate), divided by the principal amount of the Bonds.</p> <p>(f) The Company may, at its option, redeem the outstanding bonds in whole, but not in part, at the Early Redemption Amount, in the event that over 90% of the bonds has been previously redeemed, repurchased and cancelled or exchanged.</p> <p>(g) In the event of any change in ROC taxation resulting in increase of tax obligation or the necessity to pay additional interest expense or increase of additional costs of the Company, the Company may, at its option, redeem the outstanding Bonds in whole, but not in part, at the Early Redemption Amount. Bondholders may elect not to have their bonds redeemed but with no entitlement to any additional amounts or reimbursement of additional taxes.</p> <p>The Put Price/Early Redemption Amount will be converted into NT\$ based on the Fixed Exchange Rate, and this fixed NT\$ amount will then be converted using the prevailing rate for payment in US\$.</p>

**Issuance of Corporate Bonds (Continue)**

Covenant	-
Name of rating company, 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 October 8, 2021 to June 27, 2026 exchange the bonds into common shares of Novatek as a substitute for the issuer's cash redemption. In addition, the bondholders will not be able to effect exchange into common shares of Novatek during any closed period.
Effect on the current shareholders due to dilution	The underlying exchange for the bond are common shares of Novatek. There won't be any material adverse effect on issuer's shareholders.
Name of custodian	Citibank, N.A., London Branch

**Exchangeable Bonds Information**

Type	Currency Linked Zero Coupon Exchangeable Bonds Due 2026				
Year/Item	2023(Note)	2022	2021	2021.07.07 (Issue Date)	
Amount of Reference Shares the Company Holds (Shares)	16,444,587	16,444,587	16,444,587	16,444,587	
Exchangeable Price	NT\$583.3	NT\$583.3	NT\$709.2	NT\$731.25	
Market Price	High	US\$90.69	US\$103.801	US\$103.799	-
	Low	US\$85.588	US\$82.163	US\$98.660	-
	Average	US\$88.067	US\$92.196	US\$101.314	-
Issue Date	July 7, 2021				
Reference Shares	Common shares of Novatek				

Note: The data shown for 2023 is for the period January 1 to February 22, 2023.

**Euro Convertible Bonds Information**

None.

**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	US\$108.2 million	Stock dividend	Stock dividend	US\$84.2 million	US\$76.3 million
Listing Price/Unit	-	-	US\$3.05	-	-	US\$3.33	US\$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 135,044,926 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 is current as of February 22, 2023.

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 (US\$)	2023			2022		
	High	Low	Average	High	Low	Average
	8.61	6.59	7.83	11.69	5.36	7.82

Note: The data shown for 2023 is for the period January 1 to February 22, 2023.



## 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	US\$13.8 million	US\$24.4 million	Stock dividend	Stock dividend	US\$439.7 million	Stock dividend	US\$1,291.5 million
-	US\$4.92	US\$4.75	-	-	US\$9.25	-	US\$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 Options Handling Status

The status of employee stock option certificates that have not yet reached the expiration date and their impact on shareholder rights.

None.

## Issuance of Restricted Stock Awards for Employees

February 22, 2023

Type of New Restricted Employee Shares	1st Tranche of Year 2020	2nd Tranche of Year 2020												
Date of Effective Registration and Total Shares	2020.07.09 233,200,000 shares													
Issue Date	2020.09.01	2021.06.09												
Number of New Restricted Employee Shares Issued	200,030,000 shares	1,268,000 shares												
New Restricted Employee Shares Not Yet to Be Issued	0 shares													
Issued Price (NT\$)	The current issue is gratuitous													
New Restricted Employee Shares as a Percentage of Shares Issued	1.64%	0.01%												
Vesting Conditions of New Restricted Employee Shares	<p>1. If an employee, after having been granted a restricted stock award, remains on the job on the vesting date, is determined by the Company as having not violated the employment contract, employee code of conduct, trust agreement, corporate governance best practice principles, ethical corporate management best practice principles, work handbook or non-compete and non-disclosure agreement of the Company or any agreement with the Company, and has fulfilled the personal performance indicators and operational goals set by the Company, the proportions of the vesting shares to be granted for such employee on the vesting date each year is as follows:</p> <p>1-1. On the job for 2 years after granting: 33%</p> <p>1-2. On the job for 3 years after granting: 33%</p> <p>1-3. On the job for 4 years after granting: 34%</p> <p>2. Personal performance indicator(s): A performance rating of A or higher for the most recent fiscal year prior to the end of each vesting period.</p> <p>3. The operational goals of the Company use the return on equity % (ROE%) and operating margin % (OM%) as performance indicators. Listed below are the performance target for the two indicators, which shall be simultaneously fulfilled. Determination of fulfillment of the indicators will be based on the consolidated financial statements, audited by a certified public accountant, for the most recent fiscal year prior to the end of each vesting period.</p> <table border="1"> <thead> <tr> <th>Indicator</th> <th>Return on equity (ROE%)</th> <th>Operating margin (OM%)</th> </tr> </thead> <tbody> <tr> <td>2 years after granting</td> <td>6% or above</td> <td>6% or above</td> </tr> <tr> <td>3 years after granting</td> <td>8% or above</td> <td>8% or above</td> </tr> <tr> <td>4 years after granting</td> <td>10% or above</td> <td>10% or above</td> </tr> </tbody> </table>		Indicator	Return on equity (ROE%)	Operating margin (OM%)	2 years after granting	6% or above	6% or above	3 years after granting	8% or above	8% or above	4 years after granting	10% or above	10% or above
Indicator	Return on equity (ROE%)	Operating margin (OM%)												
2 years after granting	6% or above	6% or above												
3 years after granting	8% or above	8% or above												
4 years after granting	10% or above	10% or above												
Restricted Rights of New Restricted Employee Shares	<p>1. Before any employee who has been granted restricted stock award shares fulfills the vesting conditions, except for the case of inheritance, the restricted stock award shares may not be sold, pledged, transferred, gifted to others, created any encumbrance, or otherwise disposed of.</p> <p>2. Before any employee who has been granted restricted stock award shares fulfills the vesting conditions, his/her rights to attendance, proposal, statement, voting and election at the Shareholders' Meeting shall be the same as those of the outstanding common shares of the Company, and shall be exercised according to a custodial trust agreement.</p> <p>3. Where any employee has been granted restricted stock award shares pursuant to these Regulations, his/her other rights prior to fulfillment of the vesting conditions include, but are not limited to: the right to distribution of cash dividends, stock dividends, legal reserves and capital reserves, and employee stock option at cash capital increase. Such rights shall be the same as those of the outstanding common shares of the Company, and shall be exercised according to a custodial trust agreement.</p> <p>4. During the period from the book closure date for stock dividends granted by the Company, the book closure date for cash dividends, the book closure date for shares purchased from a cash capital increase, the book closure period of the Shareholders' Meeting as specified by Article 165, Paragraph 3 of the Company Act or any other statutory book closure date occurring based on the fact of the record date for distribution of rights, the time and process for lifting restrictions on the vested shares of any employee who has fulfilled the vesting conditions shall be subject to a custodial trust agreement or the applicable laws and regulations.</p>													

## Issuance of Restricted Stock Awards for Employees (Continue)

Custody Status of New Restricted Employee Shares	Placed under custodial trust	
Measures to be Taken When Vesting Conditions are not Met	<ol style="list-style-type: none"> <li>Where an employee who has been granted restricted stock award shares is not on the job on the vesting date, has committed an act of gross negligence by violating any of the agreements under Article III, Paragraph (III), Sub-paragraph 1 of "2020 Regulations Governing the Issuance of Restricted Stock Awards for Employees", or has failed to fulfill the personal performance indicators and operational goals set by the Company, the shares granted to him/ her but unfulfilled vesting conditions will be recovered and canceled by the Company without compensation.</li> <li>During the vesting period, if an employee has voluntarily resigned or been dismissed or laid off, his/her unvested shares will be recovered and canceled by the Company without compensation.</li> </ol>	
Number of New Restricted Employee Shares that have been Redeemed or Bought Back	3,087,850 shares	0 shares
Number of Released New Restricted Employee Shares	65,401,050 shares	0 shares
Number of Unreleased New Restricted Shares	131,541,100 shares	1,268,000 shares
Ratio of Unreleased New Restricted Shares to Total Issued Shares (%)	1.05%	0.01%
Impact on Possible Dilution of Shareholdings	The dilution of the Company's EPS is limited, so there is no significant impact on the interest of shareholders.	

February 22, 2023

Type of New Restricted Employee Shares	1st Tranche of Year 2022													
Date of Effective Registration and Total Shares	2022.10.06 50,000,000 shares													
Issue Date	2022.12.05													
Number of New Restricted Employee Shares Issued	23,059,500 shares													
New Restricted Employee Shares Not Yet to Be Issued	26,940,500 shares													
Issued Price (NT\$)	The current issue is gratuitous													
New Restricted Employee Shares as a Percentage of Shares Issued	0.18%													
Vesting Conditions of New Restricted Employee Shares	<ol style="list-style-type: none"> <li>If an employee, after having been granted a restricted stock award, remains on the job on the vesting date, is determined by the Company as having not violated the employment contract, employee code of conduct, trust agreement, corporate governance best practice principles, ethical corporate management best practice principles, work handbook or non-compete and non-disclosure agreement of the Company or any agreement with the Company, and has fulfilled the personal performance indicators and operational goals set by the Company, the proportions of the vesting shares to be granted for such employee on the vesting date each year is as follows: <ol style="list-style-type: none"> <li>On the job for 2 years after granting: 33%</li> <li>On the job for 3 years after granting: 33%</li> <li>On the job for 4 years after granting: 34%</li> </ol> </li> <li>Personal performance indicator(s): A performance rating of A or higher for the most recent fiscal year prior to the end of each vesting period.</li> <li>The operational goals of the Company use the return on equity % (ROE%), earnings per share (EPS) and Morgan Stanley Capital International (MSCI) ESG ratings as performance indicators. Listed below are the performance targets and weighting for the indicators. Targets are set for each indicator. Indicators that have achieved the target value, the number of vested shares in the year is calculated according to the corresponding weighting, otherwise, the corresponding weighting is 0%. The performance period refers to the fiscal year of the most recent annual financial statement audited by a certified public accountant before the vesting date. Performance indicators are based on the consolidated financial statements audited by a certified public accountant corresponding to the period required by the indicators. <table border="1"> <thead> <tr> <th>Indicator</th> <th>Weighting</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>Return on Equity (ROE%)</td> <td>30%</td> <td>Higher than the Company's average of the previous three years (Note 1)</td> </tr> <tr> <td>Earnings Per Share (EPS)</td> <td>30%</td> <td>Higher than the Company's average of the previous three years (Note 1)</td> </tr> <tr> <td>Morgan Stanley Capital International (MSCI) ESG Rating</td> <td>40%</td> <td>Rating is A or greater (Note 2)</td> </tr> </tbody> </table> </li> </ol>		Indicator	Weighting	Target	Return on Equity (ROE%)	30%	Higher than the Company's average of the previous three years (Note 1)	Earnings Per Share (EPS)	30%	Higher than the Company's average of the previous three years (Note 1)	Morgan Stanley Capital International (MSCI) ESG Rating	40%	Rating is A or greater (Note 2)
Indicator	Weighting	Target												
Return on Equity (ROE%)	30%	Higher than the Company's average of the previous three years (Note 1)												
Earnings Per Share (EPS)	30%	Higher than the Company's average of the previous three years (Note 1)												
Morgan Stanley Capital International (MSCI) ESG Rating	40%	Rating is A or greater (Note 2)												
	<p>Note 1: Comparing the performance period with the average of the preceding three years.</p> <p>Note 2: The year of MSCI annual ESG rating is consistent with the performance period defined in the return on equity and earnings per share.</p>													

**Issuance of Restricted Stock Awards for Employees (Continue)**

Restricted Rights of New Restricted Employee Shares	<ol style="list-style-type: none"> <li>1. Before any employee who has been granted restricted stock award shares fulfills the vesting conditions, except for the case of inheritance, the restricted stock award shares may not be sold, pledged, transferred, gifted to others, created any encumbrance, or otherwise disposed of.</li> <li>2. Before any employee who has been granted restricted stock award shares fulfills the vesting conditions, his/her rights to attendance, proposal, statement, voting and election at the Shareholders' Meeting shall be the same as those of the outstanding common shares of the Company, and shall be exercised according to a custodial trust agreement.</li> <li>3. Where any employee has been granted restricted stock award shares pursuant to these Regulations, his/her other rights prior to fulfillment of the vesting conditions include, but are not limited to: the right to distribution of cash dividends, stock dividends, legal reserves and capital reserves, and employee stock option at cash capital increase. Such rights shall be the same as those of the outstanding common shares of the Company, and shall be exercised according to a custodial trust agreement.</li> <li>4. During the period from the book closure date for stock dividends granted by the Company, the book closure date for cash dividends, the book closure date for shares purchased from a cash capital increase, the book closure period of the Shareholders' Meeting as specified by Article 165, Paragraph 3 of the Company Act or any other statutory book closure date occurring based on the fact of the record date for distribution of rights, the time and process for lifting restrictions on the vested shares of any employee who has fulfilled the vesting conditions shall be subject to a custodial trust agreement or the applicable laws and regulations.</li> </ol>
Custody Status of New Restricted Employee Shares	Placed under custodial trust
Measures to be Taken When Vesting Conditions are not Meet	<ol style="list-style-type: none"> <li>1. Where an employee who has been granted restricted stock award shares is not on the job on the vesting date, has committed an act of gross negligence by violating any of the agreements under Article III, Paragraph (III), Sub-paragraph 1 of "2020 Regulations Governing the Issuance of Restricted Stock Awards for Employees", or has failed to fulfill the personal performance indicators and operational goals set by the Company, the shares granted to him/ her but unfulfilled vesting conditions will be recovered and canceled by the Company without compensation.</li> <li>2. During the vesting period, if an employee has voluntarily resigned or been dismissed or laid off, his/her unvested shares will be recovered and canceled by the Company without compensation.</li> </ol>
Number of New Restricted Employee Shares that have been Redeemed or Bought Back	0 shares
Number of Released New Restricted Employee Shares	0 shares
Number of Unreleased New Restricted Shares	23,059,500 shares
Ratio of Unreleased New Restricted Shares to Total Issued Shares (%)	0.18%
Impact on Possible Dilution of Shareholdings	The dilution of the Company's EPS is limited, so there is no significant impact on the interest of shareholders.



## List of Executives Receiving New Restricted Employee Shares and the Top Ten Employees with New Restricted Employee Shares

Title	Name	No. of New Restricted Shares	New Restricted Shares as a Percentage of Shares Issued (%)	New Restricted Shares			Released Restricted Shares as a Percentage of Shares Issued (%)
				No. of Shares	Issued Price (NT\$)	Amount	
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	S F Tzou						
Vice President	Osbert Cheng	106,200	0.85	32,604	0	0	0.26
Vice President	G C Hung						
Vice President	Steven Hsu						
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	Mindy Lin						
Vice President	Linwu Kuo						
Vice President & Chief Human Resources Officer	Eric Chen						
Employee	Remi Yu						
	Michael CY Wang						
	Pang Min Wang						
	J Y Wu						
	Victor Chuang						
	Yau Kae Sheu	15,498	0.12	4,835	0	0	0.04
	Chuck Chen						
	Bellona Chen						
	C P Yen						
	Johnson Liu						

Note: Acquisition of restricted shares is accumulated until the date of publication of the annual report.

As of February 22, 2023/Unit: thousand shares and in thousand NT\$

				Unreleased
No. of Shares	Issued Price (NT\$)	Amount	Unreleased Restricted Shares as a Percentage of Shares Issued (%)	
73,596	0	0	0.59	
10,663	0	0	0.09	

## 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 2021 and as of the Annual Report Printing Date.

In the latest year or as of the date of the annual report, issuance of new shares in connection with mergers or acquisitions or with acquisitions of shares of other companies shall specify the following matters:

The latest proposal that United Microelectronics Corporation (“UMC”) issued new shares in 2021 to exchange the shares with Chipbond Technology Corporation (“Chipbond”) was approved by TWSE on October 20, 2021 with the no. 1101805580 and was effective then. The share exchange record date was November 5, 2021. The proposal was approved by Hsinchu Science Park Bureau and was registered the change of new shares on November 15, 2021. In accordance with Article 9, paragraph 1 subparagraph 8 of “Regulations Governing the Offering and Issuance of Securities by Securities Issuers”, UMC appointed Horizon Securities to submit the assessment opinion as of the third quarter, 2022.

1. The influence on the finance by receiving other company’s share:

UMC issued new shares to exchange 53,163,821 shares of Chipbond, without using cash as consideration, and this did not affect the Company’s capital allocation and financial operation. The main business of UMC and Chipbond are foundry service and panel driver IC assembly and testing service; after the exchange of shares, the two parties will cooperate fully in market segments such as panel driver ICs, compound semiconductor power components and radio frequency components. Combining both parties’ advantages, integrate upstream and downstream supply chain resources to provide customers with all-round services. In addition, Chipbond’s operation and profitability have been stable in recent years, UMC obtained its equity through share exchange, it will also participate in Chipbond’s operating results and increase the financial dividend income.

2. The influence on the business by receiving other company’s share:

UMC provides high quality IC fabrication services, focusing on logic and various specialty technologies to serve all major sectors of the electronics industry. Chipbond supplies a true full turnkey service for backend assembly processing of LCD driver ICs from wafer bumping to packaging. UMC joined Board of Directors on May 27th, two parties have gradually carried out cooperation in the field of driver ICs, integrating front-end and back-end process technologies, moving towards higher frequency and lower power consumption, and jointly providing a unified solution for the panel industry. In addition, UMC actively invests in GaN power component development and RF components process development. It intends to combine Chipbond’s leading position in the packaging and testing market of power and RF components and advanced packaging technology to accelerate the development of high-efficiency power market opportunities for components and 5G RF components will help to improve overall business competitiveness.

3. The influence on the shareholder’s equity by receiving other company’s share: UMC issued 61,107,841 new shares to exchange for 53,163,821 shares of Chipbond. It was 0.49% of paid-in capital, but it can increase investment in Chipbond, directly obtain around 7.2% of the equity, and deepen the cooperation between two companies. In addition, Chipbond’s annual after-tax profit per share in 2022 was 8.41. The shareholders’ meeting on May 27, 2022 distributed cash dividend of NT\$0.5 per share and NT\$5.5 per share through capital reserves. UMC will also participate in Chipbond’s operating results and increase the financial dividend income.

4. The benefit by receiving other company’s share:

UMC issued new shares to exchange 53,163,821 shares of Chipbond, and the proposal was approved by Hsinchu Science Park Bureau and was registered the change of new shares on November 15, 2021. After completion of the share exchange, two parties have gradually carried out the cooperation plan. By combining the technical advantages of both parties, it should have positive benefits to UMC’s finance, business and shareholders’ rights in interests. The benefits of this project will gradually appear.

During the latest year or as of the date of the annual report, the board of directors has adopted a resolution approving any issuance of shares in connection with a merger or acquisition or with acquisition of shares of any other company shall specify the status and its basic information:

1. The status:

The proposal was adopted by the board of directors on September 3, 2021 to issue new shares of UMC to exchange the shares of Chipbond. On September 3, 2021, the board of directors confirm that UMC issued 61,107,841 new shares to exchange for 53,163,821 shares of Chipbond, and the par value of the share is NT\$10, and the total amount was NT\$611,078,410. It was approved by TWSE on October 20, 2021 with the no. 1101805580 and was effective then. The share exchange record date was November 5, 2021. The proposal was approved by Hsinchu Science Park Bureau and was registered the change of new shares on November 15, 2021. The Company has scheduled November 26, 2021 as the date for issuance and listing of new stock for capital increase.



**Status of New Shares Issuance in Connection with Mergers and Acquisitions (Continue)**

## 2. The basic information of another Company:

Unit: In thousand NT\$; except EPS is in dollar

Company Name	Chipbond Technology Corporation	
Company Address	No.3, Li Hsin 5th Rd., Hsinchu Science Park, Hsinchu	
Chairman	Fei-Jain Wu	
Paid-in Capital	7,386,755	
Main Business Items	Gold Bump、Solder Bump、TCP、COF、Flip Chip、COG and Tape	
Main Products	Packaging and testing	
The latest year of financial data	Assets	50,956,530
	Liabilities	10,066,417
	Equity	40,890,113
	Revenue	24,010,157
	Gross Margin	7,833,473
	Operating Gain	5,877,294
	Net Income	6,208,691
	Earnings Per Share	8.41

Note: The data shown above is 2022 Financial Statements of Chipbond.

**Funding Plans and Implementation**

As of the end of the fourth quarter of 2022, the implementation of uncompleted funding plans was as follow:

Projects	Unsecured Straight Corporate Bond(110-1)
Issue Date	2021.04.22
Use of Proceeds	Purchase of equipment and environmental protection related expenditures
Chang of Plan	No change
Gross Proceeds	NT\$9,600 million
Implementation Status	The actual implementation was NT\$8,468.948 million. Purchase of equipment's fund utilization finished in the first quarter of 2022. The rest will continue to be implemented according to the demand progress.

## Operations Overview

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## Business Activities

### Business Scope

UMC provides wafer fabrication services through state-of-the-art manufacturing processes for a broad range of applications within the IC industry. The Company offers comprehensive solutions to meet customers' chip design requirements, and provides logic and specialty process technologies from 0.6-micron to 14-nanometer. From UMC's robust technology portfolio, customers can select the processes suited for their product applications, including embedded non-volatile memory, high

voltage, bipolar-CMOS-DMOS, MEMS sensor, mixed-signal/RFCMOS, RFSOI, 2.5D/3D advanced packaging, and compound semiconductors to complete design tape-outs.

### Industry Overview

#### Current Status and Development of the Semiconductor and Foundry Industry

The development of electronic products has been trending towards enhanced functionality, light weight, energy saving, and artificial intelligence (AI) technology. The growth in applications for 5G smartphones, automotive electronics and electric vehicles, Internet of Things (IoT), and AI in recent years, as well as the commercial introduction of advanced packaging, have also affected the direction and increased the complexity of chip design. Combined with the constant miniaturization of semiconductor fabrication processes, these developments have led to higher technology barriers and the investment required has also increased many folds.

The requirements of enhanced chip performance coupled with the continual miniaturization of semiconductor fabrication processes are raising the barriers to entry across semiconductor sectors, from design to testing, and increasing the amount of investment required significantly. The development costs of advanced process technologies and the capital expenditure for new tools and equipment have also risen considerably. As a result, the industry's vertical specialization is becoming increasingly distinct. Many integrated device manufacturers (IDMs) have announced that they will no longer actively invest in the development of advanced processes nor increase their capacity due to cost considerations, and are instead increasing the proportion of wafer manufacturing outsourced to foundries. System providers are also increasingly designing ICs in-house and directly outsourcing fabrication. These industry trends are positive for the development of the foundry business.

For the first half of 2022, the semiconductor industry continued enjoying high growth, benefiting from the extra demand created by the pandemic. However, consumer purchasing power decreased significantly in the second half of 2022 due to the spike in energy prices caused by the Russia-Ukraine war, pandemic lockdowns in China, and rapid interest rate hikes to tackle skyrocketing inflation by Europe and the United States. All these factors resulted in lower annual growth for the semiconductor industry than the forecast at the beginning of the year, and weakened demand for consumer electronics products, notably smartphones and PCs, led to elevated inventory levels across the supply chain. Therefore, the semiconductor supply chain, including foundries, entered into downturn cycle of inventory correction. By IC categories, logic, analog, sensor and microcontroller products continued to see growth while memory market declined sharply. Meanwhile, the IC shortage for automotive use was getting improved.

According to the SIA (Semiconductor Industry Association), worldwide semiconductor revenue rose approximately 4.4% to US\$580 billion in 2022.

Looking ahead, global economic activities are generally slowing down and the outlook for 2023 is bearish, with global inflationary pressures and the ongoing Russia-Ukraine war as the main factors. In addition, largest economies still remain under pressure to further raise interest rates, and the US-China technology competition is heating up. All these uncertainties will affect the semiconductor market in 2023, and monitoring inventory levels will be the key focus for semiconductor industry. According to the SIA, the global semiconductor market will decrease by 4.1% to US\$557 billion in 2023, the first time the industry will contract

## Industry Overview (Continue)

since 2019. Nevertheless, in the long-term, the semiconductor industry will enjoy continuous growth, benefiting from mega trends in 5G, HPC, IoT, EV, and AI, as well as the semiconductor content increase in all major end systems.

In the first half of 2022, the wafer foundry industry benefited from tight wafer supply and rising wafer average selling price. Foundries' revenue repeatedly hit new highs. However, the overall global economy worsened and consumer confidence was impacted by high inflation and pandemic lockdowns in China during the second half of the year. This situation weakened demand for consumer electronics such as PCs and smartphones, and gradually impacted the growth of foundry industry. In terms of the overall market, the foundry industry performed well throughout the year. According to market research firm Gartner, global foundry revenues surged approximately 30% to US\$130.7 billion for 2022.

Looking ahead to 2023 for the foundry industry, we expect weak demand will persist through the first half of the year, impacted by the semiconductor supply chain inventory digestion, especially in consumer electronics market segments. Wafer shipment volumes and fab utilization rates of foundries will suffer as a result. Overall, 2023 foundry business outlook will depend on the global economic environment. In response to market changes, foundries may adjust capital expenditures and capacity expansion plan. Gartner estimates the foundry industry for 2023 will experience a 2.1% decline to US\$128 billion.

### Overview of Semiconductor Industry Value Chain

The division of labor in the semiconductor value chain is fairly mature and can be generally divided into IC design, photo mask, wafer fabrication, and testing and packaging. IC designers produce designs of chips according to the specifications and applications of end products. As different ICs have unique requirements, wafer foundries must provide comprehensive process technologies and intellectual property, as well as continuous process optimization, to enable customers to successfully develop chip designs and eventually move to volume production. Finally, the testing and packaging sector will package and test customers' chips to ensure they meet their design specifications.

### Development and Trends in the Electronics Industry

The electronics industry is generally divided into several categories: Computer, communication, consumer, industrial and automotive. The development of end devices continues to move towards smaller size, lower power consumption, greater connectivity, and intelligence. Emerging technologies such as 5G, smartphones, AIoT, wearables, autonomous driving/electric vehicles, AI/deep learning, augmented reality/virtual reality (AR/VR) will continue to develop. The foundry sector works with upstream and downstream partners in the semiconductor value chain to enable the development of various applications and to capture new opportunities presented by trends in the electronics industry.

## Overview of Technology and R&D

### R&D Expenses for the Past 2 Years

In Thousand NT\$

	2022	2021
Research and development expenses	12,953,534	12,934,836

Note: For the period from January 1, 2023 to the printing date on February 22, 2023, the unaudited research and development expenses amounted to NT\$1,431,687,000.

### Technologies or Products Successfully Developed Within the Past 2 Years

Year	R&D Achievements
2021	<ul style="list-style-type: none"> <li>Introduced into 5G and network communications applications, the 14nm FinFET platform compact process (14FFC) successfully entered mass production and the Company has cooperated with many customers to expand the application of 14FFC products.</li> <li>The successful mass production of various 22nm products has attracted more than 10 customers to adopt the 22nm technology platform for product verification and mass production planning.</li> <li>Component models and design specifications established for 22nm process technology image signal processor (ISP).</li> <li>The 28HPC+ customized process technology was applied to image signal processor (ISP), and successfully introduced into higher-end 108Mp products and entered mass production.</li> <li>Low temperature polycrystalline oxide panel (LTPO OLED) driver chip products using 28nm high voltage 27V process technology entered mass production.</li> <li>The 40nm non-volatile memory process platform completed vehicle verification and entered mass production.</li> <li>40nm resistive random access memory entered mass production.</li> <li>55nm RFSOI process entered mass production to meet the 5G sub-6 GHz market demand.</li> <li>Power management chip (PMIC) using 0.11<math>\mu</math>m BCD power integrated circuit technology platform completed product verification and successfully entered mass production.</li> </ul>
2022	<ul style="list-style-type: none"> <li>The 22nm process platform, widely used in consumer electronics fields such as wearable devices and wireless network communications, entered mass production with several customer products, and the RF/mmWave models have been completed. In addition, the 22nm automotive product platform completed reliability and durability verification, and related automotive intellectual property (IP) is in progress.</li> <li>The 22nm ISP process technology completed component modeling and design specifications, and also developed specialty IPs.</li> <li>The 22nm High Voltage 25V process technology of LTPO OLED driver chip has completed product verification.</li> <li>In the 22nm magnetoresistive memory (MRAM) process technology, the high-density 1Gb HDMRAM chip product used in aerospace/low earth orbit satellite communications has entered trial production.</li> <li>28HPC+ high-performance computing image signal processor (ISP) technology has entered mass production with the industry's highest-end 200-megapixel mobile image sensor with smallest pixel size.</li> <li>In the 28nm ultra-low power consumption embedded high-voltage active matrix organic light-emitting diode (AMOLED) display driver chip technology development, the process technology completed component modeling and design specifications.</li> <li>0.11<math>\mu</math>m BCD platform combined with embedded non-volatile memory (eNVM) has completed component modeling and design specifications, and has also developed specialty automotive IPs.</li> <li>Wafer-to-Wafer (W2W) hybrid bonding technology completed customer product verification.</li> </ul>

## Overview of Technology and R&D (Continue)

UMC's R&D team has always been dedicated to promoting the development of logic 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 Southern Taiwan Science Park site, the Company continues to recruit and train a large number of R&D talent. In 2022, UMC continued to invest significantly in R&D resources with total annual R&D expense reaching NT\$13 billion, which has led to fruitful R&D achievements in logic and specialty technologies.

### 14nm Process Technology

UMC reached the mass production milestone for its customized 14nm FinFET (14FF+) process in early 2017 and the competitiveness of device performance and yield has reached leading industry standards. In 2018, UMC successfully introduced its 14FFC FinFET Compact platform, which exhibited 55% performance improvement and twice the gate density compared to the 28nm process. With the characteristics of high performance, low latency and low power consumption, 14FFC can be used widely across various logic/analog/mixed-signal/RF and other high-end electronic products, providing customers with solutions with both high performance and low power consumption. Currently, the yield rate of customer products designed on UMC's 14FFC platform has exceeded 90%, meeting customer requirements. The platform has been introduced into 5G and network communications applications, and has entered mass production.

### 22nm Ultra-Low Power/Ultra-Low Leakage Process Technology

UMC has developed 22nm ultra-low power and ultra-low leakage (ULP/ULL) process technology successfully. Compared to the 28nm high performance compact process technology platform (28HPC), 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. The 22nm ULP/ULL technologies reached the mass production milestone for customer digital TV (DTV) chips in 2020. UMC R&D teams continue to optimize the process and expand the scope of product applications in electronic products such as analog, mixed-signal, RF technology, Internet of Things, and mobile devices. Relevant specifications for automotive electronic products are also under development. Under the architecture of the 22nm process platform, the design specification for the automotive Grade-1 platform has been successfully established, and the reliability and durability verification have been completed. Compared

with the current 28nm technology products on the market, the 22nm ULP/ULL image signal processor (ISP) platform technology can provide lower core operating voltage and better energy consumption performance, and has established component models, design specifications, and related silicon IP. The 22nm ISP is expected to enter trial production in 2023.

### 28nm High-Performance Process Technology

UMC's 28nm high-performance process utilizes high-k/metal gate stack technology. The 28nm high-performance computing process (28HPC+) entered mass production in 2020 for image signal processor (ISP) products. The higher-end 108Mp products have been successfully introduced and entered mass production in 2021. Furthermore, the industry's highest-end 200-megapixel image sensor product with the smallest pixel size using UMC's 28nm ISP technology has entered mass production in 2022. The 28HPC+ millimeter wave (mmWave) process, providing a complete RF solution, has been verified by performing a low noise amplifier (LNA) IC tape-out with first pass silicon success, leveraging UMC's 28HPC+ process technology and the certified mmWave design flow with RF solution. UMC's production-proven 28HPC+ solution is ideal for high-speed mmWave devices and provides silicon-accurate models for circuit applications up to 110GHz. It is suitable for applications ranging from mobile devices, automotive electronics, to Artificial Intelligence of Things (AIoT).

### Display Driver IC and Power Management Process Technologies

Based on its superior high-voltage processes, UMC has the biggest market share in the global liquid crystal display (LCD) display driver IC (DDI) market, and is also the first foundry to offer a 28nm OLED DDI technology platform. Low temperature polycrystalline oxide (LTPO) OLED panel driver chip products using 28nm high-voltage 27V process technology have entered mass production. The LTPO OLED driver chip product of 22nm high-voltage 25V process technology has completed product verification and is expected to enter trial production in 2023. In terms of the development of 28nm ultra-low power embedded high-voltage active matrix organic light-emitting diode (AMOLED) DDI technology, the component model and design specifications have been completed, and it is expected to enter trial production in 2023.

Power management IC (PMIC) with higher voltage can reduce energy loss during voltage conversion, thereby decreasing energy consumption. To serve the demands for various PMIC applications, UMC provides Super High Voltage (5V and 30V in coordination with 300V, 500V or 700V) processes. UMC also provides a high voltage process technology platform that is compatible with standard logic and a complete IP core library. Combined with world-class Low Conduction Resistance and High Sustain Voltage components, the platform serves power management applications for mobile phones, tablets, automotive, and industrial

## Overview of Technology and R&D (Continue)

systems. UMC's Bipolar-Complementary Metal Oxide Semiconductor-Double Diffusion Metal Oxide Semiconductor (BCD, Bipolar-CMOS-DMOS) process can provide various required high-voltage operating capabilities for PMIC. Following the successful mass production of the Company's 0.11 $\mu$ m BCD technology, its 0.11 $\mu$ m BCD platform combined with embedded non-volatile memory platform has completed the automotive component model and design specifications, as well as automotive IP. The development of a next-generation customized PMIC for mobile phones has also made good progress and is expected to enter trial production in 2023.

### Non-Volatile Memory Process Technologies

UMC provides eNVM specialty processes and their supporting IP solutions from 180nm to 22nm for applications in AIoT, automotive electronics, industrial control, and various 3C products. The 40nm non-volatile memory eFlash process platform has been adopted by customers and entered mass production. The development progress of 28nm embedded SuperFlash<sup>®</sup> non-volatile memory platform (ESF4) is also in line with expectations; it has achieved a stable yield rate and is ready for reliability verification. The product is expected to meet the demand for AIoT.

Resistive Random Access Memory (RRAM) is a novel non-volatile memory with simple structure, low operation voltage, low read current, fast program/erase speed and very good reliability. Moreover, it is fully logic compatible with less add-on masks and low extra cost. The 40nm RRAM has entered mass production, while the 22nm RRAM technology platform development is in progress, and is expected to be applied in AIoT related products.

The new generation of embedded Magnetoresistive Random Access Memory (eMRAM) has the same size as the traditional charge-trapping memory, but has simpler process conditions and faster operation speed, and exhibits excellent thermal stability, read/write endurance, and data retention. UMC has been investing in the R&D of eMRAM process platform since 2018. The 22nm high-density 1Gb HDMRAM product, to be applied in aerospace and LEO satellite communications, entered trial production in 2022.

### RFSOI Process Technologies

UMC's RFSOI technology, with its unique substrate characteristics to prevent high-frequency signal harmonic frequency distortion and to reduce power loss, satisfies the strict requirements of all 4G/5G mobile phones for RF switches. Following 90nm RFSOI process mass production, the 55nm RFSOI process also entered mass production in 2021, and meets the needs of the 5G sub-6 GHz market, while UMC continues to develop the 40nm RFSOI technology platform to capture subsequent 5G/mmWave growth trends. UMC leads the industry in manufacturing 12-inch RFSOI wafers and has achieved a global market share of 18%. 22nm

RFSOI has also entered the development stage, with a view to deploy in the market above 40GHz in the future. UMC's RF Foundry Design Kit (FDK) allows users to design optimized inductors/capacitors in minutes with simple steps through convenient software. These powerful solutions make UMC's RF technology one of the most competitive technologies in the semiconductor industry.

### CMOS Image Sensor (CIS) and MEMS Process Technologies

UMC provides customers with high-performance complementary metal oxide semiconductor image sensor (CIS) solutions that have been adopted by global leaders in mainstream applications such as portable devices, medical devices, ambient light sensors, surveillance systems, and more. The 55nm back-illuminated image sensor (BSI) CIS process technology has entered mass production, which can be applied to high dynamic range (HDR) related products, such as surveillance, driving record (Dash CAM) and AIoT applications to meet the customer demand for high sensing resolution and fast focus function (PDAF), as well as product diversity. For CMOS image sensor technology development, UMC's 65nm process has been verified to enter the mass production stage. The new processes, such as 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.

By developing advanced sensors with second-generation micro-electromechanical (CMOS-MEMS) technology and cooperating with customers, UMC manufactures flow sensor chips widely used in life-sustaining medical respirators for critically ill patients to combat the COVID-19 epidemic in recent years. The vaccine temperature control chips produced with the temperature and humidity sensor are used to monitor the temperature during the cold chain transportation of the vaccine to ensure that the vaccine efficacy is not reduced and to prevent the spread of the epidemic. In the post-epidemic period, temperature control chips can be used in the cold storage supply chain to provide consistent temperature control and digitalization for the storage and transportation of medicine, food and chemicals. In response to greenhouse gas emissions control, the carbon dioxide sensors can regularly monitor the concentration and trend of carbon dioxide in the air. Precise management of high-concentration areas and emissions information can help the responsible units take timely and appropriate control measures. UMC makes every effort to develop environmentally-friendly technologies to contribute to the sustainable future of the planet.

## Overview of Technology and R&D (Continue)

### Compound Semiconductors

In terms of the overall layout of compound semiconductors, UMC mainly targets key niche markets such as communication components and third-generation semiconductor power components. Continuing to adopt SAW filter integration solutions, the existing gallium arsenide (GaAs) HBT power amplifiers is an integrated solution for mobile phone RF front-end modules and WiFi6/7 communication modules. For GaAs pHEMT, UMC will continue to develop key chip technologies suitable for 5G mmWave base stations and Ka/Ku-band low-orbit satellite receiver chips. In addition, as for the third type of wide-bandgap component technology, UMC actively invests in the development of gallium nitride power (Power GaN) and microwave (RF GaN) technology platforms, targeting the market of high-efficiency power supply components and 5G/low-orbit satellite communication components. The 650V GaN power components are expected to enter trial production in 2023.

### 3D W2W Hybrid Bonding Technology

UMC's 2.5D interposer technology has been in mass production to high-end CPU/GPU customers for years. For 3D wafer-to-wafer (W2W) hybrid bonding technology, the Company is adopting a open supply chain cooperation model, to provide customers with reliable and flexible solutions. In the meantime, as to the application of radio frequency components, UMC has completed the chip design for a customer' RF product, using 3D W2W stacking technology to reduce chip area by 40%. The product has completed verification, and is expected to enter trial production in 2023.

### 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 110nm, 90nm, 65nm, 55nm, 40nm, 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 made 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

Intellectual property (IP) is at the core of business growth and corporate competitiveness for the semiconductor industry. As industry players vie for technology leadership, UMC strives to protect and leverage our IP assets by linking our patent and trade secret protection mechanism with the Company's business strategy. Following the Company's operation and development planning, the Company'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. In 2022, we added 348 patents to our portfolio, including 199 in the United States, 37 in Taiwan, 108 in China, and 4 in another countries, bringing the cumulative number of patents to 14,771.

As trade secret protection become increasingly critical, UMC has stepped up internal compliance training and established a robust IP management system. In 2022, UMC achieved Taiwan Intellectual Property Management System (TIPS) certification for the second year, with our certification level improving from A to AA, underscoring our unwavering commitment to IP and corporate governance best practices.



## Long-Term and Short-Term Business Plans

UMC is committed to delivering comprehensive wafer fabrication solutions to its customers through close cooperation with supply chain partners providing equipment, automated electronic design tools, IC design service, silicon IP service, mask manufacturing, and packaging/testing services, which enables the Company to provide customers with verified reference flows, broad silicon IP, design cell library databases, and diversified options for packaging and testing. Combined with the Company's advanced process technologies and state-of-the-art wafer manufacturing, UMC can ensure fast time to market for customers' IC products.

### Short-Term Objectives

UMC's short-term objectives will be affected by global economic uncertainties and weak market demand. In addition to tracking inventory levels in the supply chain, UMC also reviews its capital expenditure plans and makes appropriate adjustments. In addition, with the new production capacity of Fab 12A P6 coming online, the Company will actively support customers' needs of 28nm wafers. At the same time, UMC works closely with our customers and pays attention to market conditions. We help customers maintain market competitiveness and as well as our own capacity utilization rate.

### Medium-to-Long-Term Objectives

For medium-to-long-term objectives, UMC will continue developing differentiated process and assist our customers to enhance competitiveness. Technology R&D and profitable operations have always been the core focus of the Company's business. UMC possesses comprehensive process nodes and diversified specialty technology platforms to meet market demand, enhance market share, and achieve its medium- to-long-term goals through optimizing product portfolio and improving profitability. UMC will continue to focus on differentiated and leading specialty process including low-power logic, BCD, eHV, eNVM and RFSOI. In terms of long-term goals, UMC has invested in compound semiconductor gallium nitride (GaN) power components and RF components. UMC also targets high-growth market opportunities

such as high-efficiency power components and RF components. UMC continues focusing on developing our own technology platforms as well as exploring collaborations with strategic partners on joint technology development projects.

UMC expects to invest about US\$3 billion in capital expenditure in 2023 in order to meet the long-term needs of customers and meet the company's long-term growth goals. The amount will mainly be used for the production capacity deployment in Fab 12A P6 and Fab 12i P3 in order to increase 28nm and 22nm capacity. UMC has signed long-term supply agreements with customers for these new capacities to ensure stable orders and reduce risks.

ESG has emerged as the global focus for all stakeholders in recent years. As a world leading semiconductor foundry company, UMC endeavors to put the highest priorities on all addressable aspects, improves sustainable development policies, systems and related management guidelines. UMC received various ESG honors in 2022, such as inclusions in the FTSE4Good Emerging Index, FTSE4Good TIP Taiwan ESG Index, and the DJSI-World (Dow Jones Sustainability Indices-World). Entering 2023, UMC will actively work towards its goal of achieving net-zero emissions by 2050 through lowering emissions from its operations, address value chain emissions together with partners, and invest in net-zero technologies.

# Overview of Market, Production, and Sales

## Market Analysis

### Sales by Geographic Region

UMC's customer base includes leading companies in diverse geographic regions. Asia Pacific and North America are the key sales regions for the Company, accounting for 61% and 24% of 2022 operating revenues, respectively. Europe and Japan combined account for 15% of operating revenues. UMC will continue to strengthen its cooperation with established customers as well as partner with emerging companies in order to achieve stable growth in the medium- and long-term.

### Market Position

UMC is a world leading semiconductor wafer foundry. The total revenue of the global pure-play wafer foundry market in 2022 was approximately US\$130.7 billion. According to estimates by market research firm Gartner, UMC remains the second largest pure-play foundry manufacturer with 7.3% share of the pure-play wafer foundry market. Its main competitors include TSMC, Samsung Foundry (note: exclude foundry for Samsung in-house products), GlobalFoundries and SMIC.

### Foundry Industry Outlook

- According to the Semiconductor Industry Association (SIA), global semiconductor revenue is forecasted to shrink 4.1% in 2023 to US\$57 billion, reflecting the headwinds from inventory digestion and weak end market demand. For 2023, Gartner estimates a 2.1% decline for the foundry industry to US\$128 billion.
- Fabless companies tend to outperform the semiconductor industry, while integrated device manufacturers (IDMs) are increasingly outsourcing production to foundries to reduce costs and market risks. Both of these factors are beneficial for the foundry industry, which is expected to continue to outperform the overall semiconductor industry.

### Differentiation and Competitive Advantage

- UMC is optimistic about the demand for chips in the 5G, AIoT, and computing markets. To capture growth from these markets, the Company has invested appropriately in R&D and capacity expansions. The Company is also actively enhancing and developing its specialty technology solutions, such as high voltage, embedded flash memory, advanced packaging, RFSOI, and compound semiconductor GaN in order to secure more product collaborations with customers. In addition, UMC is establishing an open technical platform with its packaging and testing partners to provide complete solutions for customers.
- The overall structure of Taiwan's semiconductor industry is complete, and it is highly competitive in terms of both operational efficiency and cost. Taiwan's position in the semiconductor industry adds to UMC's competitiveness when combined with the Company's technology advantages.

### Favorable Factors for the Company's Development

Considering the continuous growth of the IC industry, the position of the foundry sector within the industry, and the company's competitiveness, the favorable factors of the Company's long-term development are summarized as follows:

- Global demand for pure-play wafer foundry services will continue to grow as the division between IC design and IC fabrication become increasingly distinct.
- IDMs are adopting the strategy of outsourcing production to foundries, which contributes to the growth of the foundry market.
- Forming strategic alliances with major international companies and system companies to secure 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 foundries in the development of 12-inch wafer manufacturing capabilities. The Company has 12-inch operations in Tainan, Taiwan; Singapore; Xiamen, China; and Mie, Japan. Future investment in 12-inch fabs will depend on customer needs and market trends.
- In response to the development 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 in technology development.
- UMC has built an industry-leading, dedicated IoT platform, providing ultra-low-power (ULP) processes with extremely low leakage suitable for all kinds of hybrid process technologies. IoT chip designers can integrate various process schematics with 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's 28nm embedded high-voltage technology has entered volume production for AMOLED display driver chips for customers to improve the power efficiency of mobile phones. The next-generation 22nm embedded high-voltage process technology is currently under development, which will enhance competitiveness of UMC and its customers in this field.
- In addition to the original polysilicon oxynitride (Poly-SiON) process, UMC's 28nm high-K/metal gate process has also successfully entered volume production. The process has also obtained automotive-grade verification and required IP are now available on the platform.
- UMC's 22nm platform can further reduce cost and improve device performance.
- UMC's 14nm FinFET process technology is 55% faster than its 28nm technology, and the power consumption is also reduced by about 50% compared to the 28nm process.
- UMC's 28nm millimeter wave (mmWave) process technology provides advanced solutions for automotive radar, 5G mobile communication, medical, and industrial products.
- UMC's RF Silicon-on-Insulator (RFSOI) technology meets the stringent requirements of the mobile phone applications including for front-end RF switches, low-noise amplifiers, and provides first-class performance.
- UMC's 40nm embedded flash memory process platform combined with SST (Silicon Storage Technology) embedded SuperFlash® non-volatile memory process technology platform reduce unit size by more than 20% compared with the 55nm embedded flash memory process platform. Applications include products such as SIM cards, financial transactions, automobiles, Internet of Things, and MCUs.
- UMC's 28nm embedded flash memory process platform and 22nm RRAM (Resistive Random Access Memory) provide customers with more suitable and flexible options at 28/22nm platform.
- The MEMS gas sensor jointly developed by UMC and customers has been successfully mass-produced and applied in smart home appliances and IoT products.
- UMC provides advanced wafer process technologies such as 2.5D (interposer)/3D (TSV)/Hybrid Bond. Combined with an open supply chain cooperation model, the Company can offer customers a complementary and complete advanced packaging platform on top of reliable 2.5D/3D IC solutions.

## Overview of Market, Production, and Sales (Continue)

- UMC has also developed a new semiconductor material process for high voltage and high frequent applications in the 5G era, including gallium arsenide (GaAs) and gallium nitride (GaN). These developments will secure UMC's position in third-generation semiconductor materials and contribute to the Company's future growth.

### Unfavorable Factors for the Company's Development

- Given the optimistic outlook for semiconductor demand, major foundries around the world have increased capital expenditures to expand capacity. This may cause volatility in market supply and demand dynamics in the future.
- Major economies are imposing sanctions to constrain competing countries, which has led to restructuring of the supply chain. UMC will continue to monitor the impact.
- In order to ensure semiconductor supply, many countries are planning to build domestic wafer fabrication capabilities by means of subsidies and policy incentives. UMC will continue to monitor the impact on the Company's operations and form a response strategy.
- The foundry industry is facing pressure of higher capital expenditures as investments become increasingly expensive. Industry leaders may use this as a competitive differentiation, and certain countries may also use subsidies to create unfair competition. New fab equipment is also expected to require longer lead times. Therefore, it is necessary to be more cautious about any expansion plans going forward.

### Countermeasures

- Strengthen the Company's competitive advantages by increasing the proportion of high-end processes and optimizing overall product mix.
- Actively seek new opportunities to expand in 5G, IoT, and AI applications.
- Provide optimized solutions to assist customers to achieve low cost, high performance, and low power targets according to the characteristics of each IC product.
- Continue to provide customers with the best choice and differentiate the Company from competitors by strengthening process development, maintain stable high yields, and offer comprehensive solutions.
- Diversify sales regions and product mix to minimize geopolitical impact. In addition to strong business from China and the U.S., UMC plans to expand business from other regions including Europe, Japan, and Korea.
- Strengthen marketing effectiveness and customer service to improve customer satisfaction.
- Develop long-term partnerships with customers, help customers expand their market share by providing competitive advanced processes and production capacity, and seek growth opportunities that enable growth for both the Company and its customers.
- Take action to respond to changes in the market in order to minimize possible impact on the Company, such as expanding customer base and increase flexibility of capacity allocation.
- Strengthen the Company's competitiveness through continuous cost saving and efficiency enhancements.
- Expand capacity through prudent investments, carefully considering the dynamics of UMC's addressable markets and customer needs.
- Seek to expand through flexible means including mergers and acquisitions of existing fabs or strategic alliances, which can help the Company gain market share and better serve regional markets.

## Main Purposes and Production Processes of Key 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 with high performance and low power consumption features, such as chips for general purpose micro-controller, touch controller, smart card and micro-controller for automotive or IoT etc.
- High Voltage: for fabricating driver ICs for LCD TV, cellphone, tablet, AR/VR, e-paper screen driver IC, and power management IC.
- CMOS Image Sensor: for fabricating CMOS image sensors used in digital camera, cellphone, notebook, optical mouse, 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.
- GaAs process: for power amplifier IC of handset and base station.
- GaN process: for RF IC of power amplifier IC; low-noise amplifier (LNA) in 5G base station; DC-DC converter in high-power portable battery charger in handset, tablet, and notebook; power supply of workstation and server; and DC-DC converter in electric vehicle applications.
- 3D-IC package: for many applications in CIS image sensor, HPC, 5G, datacenter, and automotive applications.

### Production and Fabrication Process

A complete IC fabrication process can be divided into five stages, including IC design, mask fabrication, wafer fabrication, packaging, and testing. UMC is dedicated to the R&D of IC process technologies in order to enable the IC designs of customers.

## 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"> <li>S.E.H. Taiwan (Manufacturing sites: US, Japan, Taiwan and Malaysia)</li> <li>SILTRONIC Singapore (Manufacturing sites: Germany, US and Singapore)</li> <li>GlobalWafers(Manufacturing sites: US, Taiwan, Italy and Japan)</li> <li>SUMCO Group(Manufacturing sites: Japan and Taiwan)</li> <li>Soitec Group(Manufacturing site: France)</li> </ul>	These five makers are the world's primary silicon wafer suppliers with production sites in the US, Japan, Germany, Italy, France, Taiwan and Southeast Asia, who can offer steady and high quality silicon wafers.	<ol style="list-style-type: none"> <li>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.</li> <li>In recent years the ratio of procurement from local makers has increased maturely, which can reduce the risk of international transportation and procurement cost.</li> <li>The Company convenes quarterly supplier management committee meetings to evaluate suppliers' performance in order to adjust the ratio of procurement from these suppliers.</li> <li>The Company established a sourcing committee to implement source integration and development more effectively and to gain the most benefit of cost reduction.</li> </ol>

## Suppliers Who Account for More than 10% Of the Net Purchase Amount

In Thousand NT\$

Name	2022			2021		
	Amount	Percentage of Net Purchase	Relation to UMC	Amount	Percentage of Net Purchase	Relation to UMC
Supplier "A"	5,263,033	10	None	4,888,380	11	None
Others	47,478,738	90		41,595,697	89	
Net Purchase	52,741,771	100		46,484,077	100	

Note: The company listed on the TWSE or traded on the TPEX shall include in its disclosures the most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the printing date of the annual report: None.

Reasons: The purchase amount of supplier "A" increased due to signing long-term agreement to avoid price fluctuations and supply risks.

## Customers Who Account for More than 10% of the Operating Revenues

In Thousand NT\$

Name	2022			2021		
	Amount	Percentage of Operating Revenues	Relation to UMC	Amount	Percentage of Operating Revenues	Relation to UMC
Customer "A"	24,061,849	9	None	21,935,208	10	None
Others	254,643,415	91		191,075,810	90	
Operating Revenues	278,705,264	100		213,011,018	100	

Note: The company listed on the TWSE or traded on the TPEX shall include in its disclosures the most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the printing date of the annual report: None.

Reasons: The sales amount of customer "A" increased due to the increased demand of communication products, and the change of sales percentages reflected the more diversified customer portfolio.

## Production Figures

Segments	Unit	2022				2021	
		Capacity	Production Quantity	Production Value (In Thousand NT\$)	Capacity	Production Quantity	Production Value (In Thousand NT\$)
Wafer Fabrication	In Thousands of 8-inch Wafer Equivalents	10,031	10,088	147,564,890	9,453	9,880	136,522,911

## Sales Figures

Segments	Unit	2022			2021	
		Shipments	Amount (In Thousand NT\$)	Shipments	Amount (In Thousand NT\$)	
Wafer Fabrication	In Thousands of 8-inch Wafer Equivalents	Domestic	3,199	84,317,100	3,842	79,092,769
		Export	6,746	181,283,073	6,021	125,501,630

Note: Net Sales.

## Employees

### Number of Workers

	2023	2022	2021
Engineers	12,373	12,390	11,606
Administrators	821	824	813
Clerks	5	5	4
Technicians	7,256	7,461	7,318
Total	20,455	20,680	19,741

### Average Age

	2023	2022	2021
Average Age	38.4	38.1	38.0

### Average Service Years

	2023	2022	2021
Average Service Years	11.4	11.3	11.4

### Educational Distribution Ratio (%)

	2023	2022	2021
Ph.D	1.4	1.4	1.4
Master	27.8	27.6	27.3
Bachelor/Associate/Diploma	50.3	50.5	49.6
High School and Below	20.5	20.5	21.7

Note: The data represented for 2023 was gathered until February 22, 2023.

## Environmental Expenditure Information

By the publication date of the 2022 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 2022, the total environmental protection related expenditures for UMC fabs in Taiwan and Singapore have exceeded NT\$4.61 billion. The environmental capital expenditures investment in highly efficient pollution prevention technology and preventive equipment etc. amounted to NT\$2.92 billion, including NT\$767 million investment in energy saving, carbon reduction and green energy related equipment. The monthly pollution prevention expenses and O&M of pollution prevention equipment exceeded

NT\$108 million, while the monthly waste disposal cost exceeded NT\$15.85 million. Meanwhile, NT\$16 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 NT\$460,000 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 Science Park Bureau for promoting workplace safety and health, labor relations, and the national excellence award for friendly workplace.

From 2022 to the publication of this annual report, UMC has not suffered any loss arising from labor disputes. And with the establishment of the aforementioned comprehensive system and the Company's ongoing efforts to manage effectively, UMC is able to effectively avoid labor disputes and 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 2022, UMC conducted a total of 8,581 training sessions, totaling 16,215 hours of training, with 189,693 participants and total training expenses of NT\$76,627 thousand.

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 continued to promote promoting inter-divisional training courses in 2022 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 an Education 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 Resource Division conducts an annual review of training outcome to determine and direct the operations of the Education Committee in each fab, and convenes a training outcome meeting so that the fabs can share their experience.
  - **External Training:** UMC provides employees (including dispatched and temporary) to participate in external training (including domestic and foreign training), and publishes information on external training courses to encourage employees to participate in external training related to their positions, and those who have been approved by supervisors in advance to participate in external training are qualified to apply for company subsidies for training expenses. After the training, colleagues will bring their training experience, achievements and new knowledge back to the Company for exchange and sharing. Through the external training mode, colleagues can further expand and broaden their knowledge in the professional field.
  - **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 Resource 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 aerobics 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 2022, UMC had a total of 30 clubs and about 2,313 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.

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, on official, occupational sickness, annual, parental, for public welfare activities, nursing and nursing leave without pay.

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.

In addition to labor, health and free group insurance (NT\$2 million group insurance, medical insurance and cancer insurance), the spouse and children of employees can enjoy life insurance, accident insurance, medical insurance and cancer insurance, and their parents can enjoy accident and accidental 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 physical 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 employees' families in the hope of boosting employee work morale and improving the quality of their work.

While valuing the employees' health, UMC also spares no effort in their mental health management. Through a confidential agreement mechanism with partner units, UMC provides benefits that are superior to laws and regulations, allowing employees to have free and professional psychological counseling services six times a year. From time to time, UMC will use various methods such as online platforms, e-posters, lectures, conference promotion, and dissemination of promotional materials, so that employees can make appropriate pressure adjustments under the pressure of work and family, and maintain a good physical and mental state, returning to the normal track and performance of work as soon as possible.

In 2022, UMC adopted health promotion activities for each quarter, and integrated occupational safety and health laws such as maternal protection, overwork prevention, human factors engineering and other health related issues. At the same time, medical checks for employees and health needs questionnaires 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 that are superior to occupational safety laws to achieve the goal of preventing occupational injuries. Moreover, as of 2020, UMC's IT divisions have integrated their existing systems to construct a customized personal Health Care System for employees. The system keeps optimized regularly. In addition to checking their own health check reports over the years, colleagues can also receive system notifications on the day of consultation with medical staff, and immediately read and confirm consultation related information, which improves the timeliness and care rate of the medical team's care. In addition to regulatory annual checkups, all employees were subsidized for advanced cardiovascular examinations (including blood drawing and electrocardiogram items) to facilitate early detection of signs of cardiovascular disease and early treatment. UMC also offers a variety of preventive screening and health promoting activities such as other



### Employee Benefits (Continue)

cancer screening, abdominal ultrasound examination, breast sonography, flu vaccination, abdominal ultrasound and other out-of-pocket items so that employees can choose appropriate health checks according to their needs.

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 each other and grow together with UMC in a healthy physical and mental state, and work together for UMC.

### Labor Pension System

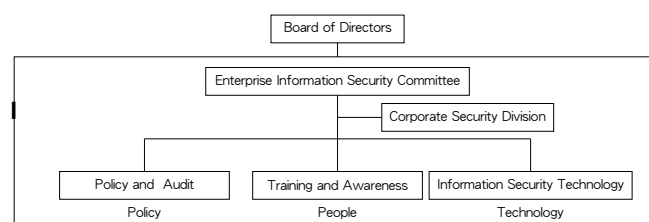
In terms of labor pension system, UMC allocates the worker's retirement reserve funds to the Labor Pension Reserve Supervisory Committees in compliance with regulations, and processes the employee labor pension payment in accordance with the Labor Standards Law. Since July 1, 2005, for employees who 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. For employees who voluntarily choose to contribute to their retirement funds, at a rate that they have agreed upon, their contributions will be deducted from their monthly salary and deposited into a personal retirement account managed by the Bureau of Labor Insurance.

## Information Security Management

### Information Security Risk Management

Established in 2003, the Enterprise Information Security Committee (EISC) is responsible for implementing the Company's information security management plan, establishing and maintaining the information security management system, and coordinating the formulation and compliance of related policies. The EISC is chaired by the President, and the Vice President TS Wu of the Digital organizational function serves as the supervisor/Chief Information Security Officer (CISO). The heads of all departments (including legal, human resources, research and development, engineering, fab operations) are members of the committee. The Corporate Security Division was also formed to be responsible for information security and physical security planning, related audit matters, and leading the operation of this committee.

The EISC holds semiannual meetings to review information security risks and measures and strategies adopted by UMC, ensuring the adequacy, suitability and effectiveness of the Company's information security management system. The committee reports to the board of directors on the effectiveness of the information security strategy annually. Independent Board Director Jyuo-Min Shyu, who has relevant experience in information security, oversees and regularly reviews the Company's information security and cyber security strategy. Mr. Shyu was the Minister of the Ministry of Science and Technology and the President of Cloud Computing & IoT Association in Taiwan, and led multiple information security projects such as the National Information & Communication Security Taskforce as Vice Chairperson and the IoT Information Security SIG (Special Interest Group) initiative.



### Information Security Policy

UMC's information security policy, which is deployed in the Company and its subsidiaries, is based on the following principles: 1) To establish Information Security Management rules in accordance to customer requirements, 2) to reach a consensus that information security is everyone's responsibility through full awareness, 3) to protect information confidentiality, integrity, availability for the Company and customers, and 4) 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 firewalls, intrusion detection, and antivirus systems to enhance the Company's ability to defend against external attacks and to protect internal confidential information.

UMC has established a complete Information Security Management System (ISMS), from systems to procedures, to reduce information security threats to ensure compliance with customers' requirements. UMC also conducts continuous improvement through the Plan-Do-Check-Act (PDCA) cycle.

In the "Plan" phase, the Company focuses on information security risk management. The Company introduced ISO 27001 information security management system certification in 2007, 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 is then carried out through annual recertification. In 2014, the Company decided to introduce ISO 15408 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. The current validity of ISO 27001 certificate is from March 2020 to March 2023. UMC completed ISO 15408 re-certification in 2022, and the current validity of ISO 15408 certificate is from November 2022 to February 2025. Please refer to the Company website for related certification information [https://www.umc.com/en/Download/awards\\_and\\_certificates](https://www.umc.com/en/Download/awards_and_certificates).

In the "Do" phase, the Company builds the multi-layer information security protection mechanism, continuously introduces new information security risk control technology, uses smart/automated mechanisms to improve the efficiency of various information security incident detection and response processing, and strengthens information security and cyber security protection procedures to protect of the Company's assets. In the "Check" phase, the Company regularly monitors the effectiveness of information security management indicators. A third party reviews and audits the above-mentioned management system annually. Well-known information security vendors conduct penetration tests. All the aforesaid matters are made to ensure continuous improvement of information security management and defense capabilities.

In the "Act" phase, the Company focuses on review and continuous improvement. When employees and contractors violate information security related regulations and procedures, they will receive penalties accordingly. Information security education and training is implemented to enhance information security awareness.

### Information Security Management Plan

In order to achieve comprehensive information security protection, the Company is implementing the following items:

- Strengthen information security defense: To conduct regular vulnerability scans and penetration tests, as well as reinforcements and repairs to reduce information security risks; to establish a network security incident contingency plan to assess the impact and loss according to the severity of the incident, and to take necessary actions to escalate the situation and recover from the incident.
- Improve information security management procedures: To establish a corporate information security framework according to the National Institute of Standards and Technology standards and create corresponding metrics; to require employees to abide by information security regulations (such as strict control of mobile storage devices), follow the standard operating procedures, and implement the Plan-Do-Check-Act (PDCA) cycle for continuous improvement.
- Enhance network, endpoint and application security: To improve the detection of irregularities and incident prevention, including protocols such as application whitelisting and endpoint detection and response (EDR). To establish Security Orchestration, Automation and Response

(SOAR) mechanism to improve the efficiency of escalating and taking actions of information security incidents. To optimize the security of the overall information system network and to add the multi-factor authentication protection for host privileged account login.

- Legal compliance and introduce international information security certification standards: UMC complies with information security-related certifications and regulations such as ISO 27001, ISO 15408, ISO 22301, and Sarbanes-Oxley Act (SOX 404), serving as the basis for risk management and review. An enterprise risk management committee has also been established to promote the standardization to reduce operational risks.
- Risk control: UMC engages an international information security firm to provide a third-party, objective assessment, which serves a basis for further improvement. The Company is insured against information security breaches as one of the methods to minimize potential losses in the event of an incident.
- Education and training: To provide company-wide information security education and training, and occasional phishing tests to increase awareness.
- Epidemic response: In response to the COVID-19 epidemic, the Company has strengthened the antivirus and information security protection measures for work-from-home (WFH), and urged employees to avoid using public computers and internet for work purposes.

### Information Security Management Resource

Information security is important for the Company's operations. To manage information security, the Company has the following measures and resources in place:

- Dedicated manpower: The Corporate Security Division is responsible for information security planning, technology deployment and related audit matters to maintain and further strengthen information security.
- Certification: UMC pass audits for ISO 27001 information security certification and ISO 15408 site certification with no major findings.
- Customer satisfaction: No major information security incidents; no complaints about customer data leakages.
- Education and training: All new employees completed information security training prior to onboarding; all employees have completed two online information security training and assessments; a total of four phishing tests were carried out during the year.
- Information security announcements: More than 10 announcements to promote important regulations and precautions for information security protection.
- Supply chain: All existing and new contractors have completed required education and training about UMC's information security regulations.
- Information security insurance: UMC has purchased information security insurance since 2019, with an insured amount of US\$10 million, as one of the measures to manage information security risks.

### Loss from Major Information Security Incidents, Potential Impact, and Corresponding Response Measures

UMC had no major information security incidents in 2022. UMC had a major WannaCry ransomware incident in 2016, causing 42 Servers/PCs/NBs used in the OA area to be infected. Due to early detection and proper handling, it did not spread to computers used for production lines. The Company immediately upgraded its antivirus software to a version with behavior-based detection capabilities, and strictly enforced information device management. It also required critical patch updates for computers used in production lines 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 limit their impact. In 2018, UMC joined a

SEMICON TAIWAN task force to develop equipment information security standards, contributing to a more secure operating environment for enterprises.

In short, the current security risks disclosed by UMC in this annual report should be supplemented with a well-known saying in the information security industry: "There is no such thing as 100% security." Cyberattack techniques are constantly evolving, and lags in defense systems expose the Company to risks. Successful defenses 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 do its best to manage information security in order to provide customers with a secure manufacturing environment and to maximize value for our shareholders.

## Major Contracts

### Supply

UMC maintains long-term business relationship with major wafer material supplier. The main contract is as follow:

Contract Type	Contracted Party	Contract Period	Key Content	Restrictive Clause
Purchase	Shin-Etsu Handotai Taiwan Co., Ltd.	Indefinite	Wafer material supply	None

### Patent and Technology Licenses

UMC values and protects intellectual property rights. With over 40 years of commitment to developing and securing semiconductor patents, UMC has achieved a predominant position in the semiconductor industry. UMC also enters into patent or technology license 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.	From Feb. 08, 2018	License for specific patents.	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
Patent cross-license	Avago Technologies International Sales Pte. Limited	Sep. 29, 2018~Dec. 31, 2023	Patent cross-license for semiconductor device related patents.	None

**Major Contracts (Continue)**

Contract Type	Contracted Party	Contract Period	Key Content	Restrictive Clause
Patent cross-license	Katana Silicon Technologies, LLC	From Nov. 05, 2019	License for specific patents.	None
Technology license	United Semiconductor (Xiamen) Co., Ltd.	Apr. 01, 2017~Mar. 31, 2032	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.
Patent cross-license	Polaris Innovation Limited	From Mar. 20, 2020	License for specific patents.	None

**Construction**

Contract Type	Contracted Party	Contract Date	Key Content	Restrictive Clause
Construction	Wholetech System Hitech Limited, Organo Technology Co., Ltd., ECO Technical Services Co., Ltd., Asia IC Mic-process Inc., Nova Technology Corp., Allis Electric Co., Ltd., L&K Engineering Co., Ltd., Mega Union Technology Inc. and others.	From Jan., 2021	For building the facilities of Fab 12A in the Southern Taiwan Science Park, UMC signed construction contracts with the vendors including but not limited to those major vendors listed in the second column. The total contracted amount exceeded NT\$13.25 billion.	None
Construction	Xiamen Dobest Trading Co., Ltd., L&K Engineering (Suzhou) Co., Ltd., Hengyuan Allis Electric Co., Ltd., Top Chemical (Shenzhen) Co., Ltd. and others.	Jan. 01, 2021~Dec. 31, 2022	United Semiconductor (Xiamen) Co., Ltd. entered into construction contracts with the vendors including but not limited to those major vendors listed in the second column for building fab facilities. The total contracted amount exceeded US\$6.31 million.	None
Construction	L&K Engineering (Suzhou) Co., Ltd.	Sep. 20, 2022~Dec. 31, 2022	United Semiconductor (Xiamen) Co., Ltd. entered into construction contracts with the vendor listed in the second column for building fab facilities. The total contracted amount exceeded RMB¥15.92 million (excluding tax)	None
Construction	Suzhou Topco Construction Ltd.	Aug. 01, 2021~Jun. 30, 2022	HeJian Technology (Suzhou) Co., Ltd. entered into construction contracts with the vendors listed in the second column for HeJian New Phosphorus Wastewater Treatment System. The total contracted amount exceeded RMB¥12.87 million (excluding tax).	None
Construction	L&K Engineering (Suzhou) Co., Ltd.	May. 01, 2021~Mar. 31, 2022	HeJian Technology (Suzhou) Co., Ltd. entered into construction contracts with the vendors listed in the second column for expanding HeJian's 85K manufacture capacity. The total contracted amount exceeded RMB¥108.8 million (excluding tax).	None
Construction	Rsea Constructional Engineering (Chongqing) Co., Ltd.	Feb. 08, 2022~Mar. 30, 2023	HeJian Technology (Suzhou) Co., Ltd. entered into construction contracts with the vendor listed in the second column for HeJian new WH3 warehouse construction. The total contracted amount exceeded RMB¥32.37 million (excluding tax).	None

# Review of Financial Position, Operating Results, Risk Management

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## Financial Position

In Thousand NT\$

	2022	2021	Differences	Differences(%)
Current assets	252,371,038	233,273,433	19,097,605	8
Property, plant and equipment	170,982,066	129,941,703	41,040,363	32
Intangible assets	4,275,200	3,644,933	630,267	17
Other assets	105,423,788	97,566,702	7,857,086	8
Total assets	533,052,092	464,426,771	68,625,321	15
Current liabilities	108,565,165	105,453,729	3,111,436	3
Non-current liabilities	89,035,988	77,770,158	11,265,830	14
Total liabilities	197,601,153	183,223,887	14,377,266	8
Capital	125,047,490	124,832,476	215,014	0
Additional paid-in capital	12,377,833	47,898,093	(35,520,260)	(74)
Retained earnings	202,247,024	115,375,789	86,871,235	75
Total equity	335,450,939	281,202,884	54,248,055	19

### Analysis of change over 20% from 2021 to 2022:

- Property, plant and equipment:  
Due to the increase in capital expenditures.
- Additional paid-in capital:  
Due to the distribution of cash from additional paid-in capital according to the resolution of shareholders' meeting held in 2022.
- Retained earnings:  
Due to the increase in net income.

## Financial Performance

In Thousand NT\$

Items	Years	2022	2021	Differences	Differences (%)
Operating revenues		278,705,264	213,011,018	65,694,246	31
Operating costs		(152,940,887)	(140,961,389)	(11,979,498)	8
Gross profit		125,764,377	72,049,629	53,714,748	75
Operating expenses		(26,811,799)	(25,590,174)	(1,221,625)	5
Net other operating income and expenses		5,339,647	5,226,831	112,816	2
Operating income		104,292,225	51,686,286	52,605,939	102
Non-operating income and expenses		1,805,012	10,117,118	(8,312,106)	(82)
Income from continuing operations before income tax		106,097,237	61,803,404	44,293,833	72
Income tax expense		(18,078,986)	(6,691,394)	(11,387,592)	170
Net income		88,018,251	55,112,010	32,906,241	60

### Analysis of change over 20% from 2021 to 2022:

- Operating revenues:  
Due to the price increase driven by strong demand and the depreciation of the NT dollar against the US dollar.
- Gross profit:  
Due to the price increase driven by strong demand and the depreciation of the NT dollar against the US dollar.
- Non-operating income and expenses:  
Due to the decrease in share of profit of associates and joint ventures.
- Income tax expense:  
Due to the increase in operating income.

## Cash Flow

### Analysis of Cash Flow for the Year Ended December 31, 2022

In Thousand NT\$

Cash at Beginning of Year	Net Cash Flow from Operating Activities	Net Cash Flow from Investing and Financing Activities	Cash at End of Year	Remedy for Liquidity Shortfall	
				Investment Plans	Financing Plans
132,622,131	145,860,529	(104,663,883)	173,818,777	-	-

Note: Net cash flow from investing and financing activities includes the effect of exchange rate changes of NT\$7,018,133 thousand.

#### Analysis of Cash Flow

- |   |  |
|---|--|
| <p>1. Operating activities:<br/>Mainly came from the operation profits excluding the depreciation and amortization expenses.</p> <p>2. Investing activities:<br/>Mainly used in acquisition of property, plant and equipment.</p> | <p>3. Financing activities:<br/>Mainly used in redemption of bonds, repayments of long-term loans and cash distribution from additional paid-in capital.</p> <p>4. Remedy for liquidity shortfall:<br/>Not applicable.</p> |
|---|--|

### Analysis of Cash Flow in the Coming Year

In Thousand NT\$

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 Remedy for Liquidity Shortfall	
				Investment Plans	Financing Plans
173,818,777	81,876,264	(136,290,500)	119,404,541	-	-

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

### Execution Status of Major Capital Expenditures and Sources of Funding

In Thousand NT\$

Project	Actual and Expected Sources of Funding	Total Amount for 2022 and 2021	Actual Capital Expenditures	
			2022	2021
Property, Plant and Equipment	Cash flows generated from operations, bank loans and issuance of bonds	128,162,261	80,127,628	48,034,633
Software and Right-of-use Assets	Cash flows generated from operations, bank loans and issuance of bonds	4,377,374	2,292,490	2,084,884

Based on aforementioned capital expenditures, in 2022 the ratio of production capacity from high-end processes of 40nm or below is above 32%, of which the production capacity for high-end 28nm or below has grown by 15% 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

UMC continues to provide multiple manufacturing locations in order to enhance customer value. As of December 31, 2022, UMC and its subsidiaries have invested about US\$1.65 billion into United Semiconductor (Xiamen) Co., Ltd.'s 12-inch fab for 28-90nm wafer service to pursue further growth for the Company. The Company plans to obtain the capital contribution to United Semiconductor (Xiamen) Co., Ltd. from XIAMEN JINYUAN INDUSTRIAL DEVELOPMENT CO., LTD. and FUJIAN ELECTRONICS & INFORMATION INDUSTRY

ENTREPRENEURSHIP INVESTMENT LIMITED PARTNERSHIP as approved by UMC's Board of Directors in April 2022. Through these investments, UMC can strengthen its global operational capabilities and offer customers more competitive foundry solutions. Moreover, UMC's overall value can be increased and shareholder interests can be enhanced.

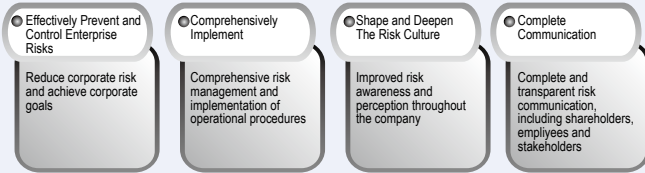
UMC's investment policies are based on long-term strategic investments that match the Company's operations and development.



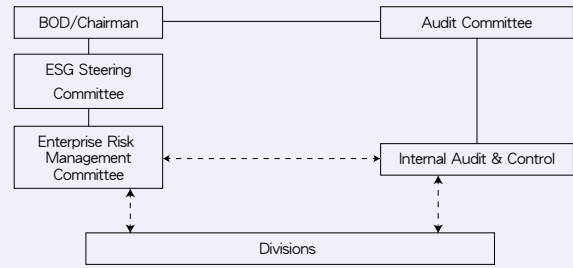
# Risk Management and Evaluation

## Enterprise Risk Management Policies

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



## Enterprise Risk Management Structure and Operation



Under the guidance of the enterprise risk management policy, the Enterprise Risk Management Committee is responsible for coordinating relevant divisions to identify internal and external risks for the Company. The Committee identifies key risks and formulates countermeasures for the four major areas of strategy, operation, finance and hazards, including important risks related to environmental, social and corporate governance issues of the Company's operations, assesses the likelihood of occurrence and severity, defines the priority and risk level of risk items, and initiates response plans for major risk items. Periodic review of risk items are conducted to identify changes in risk level and to ensure the effectiveness of risk management plans and related control operations, and to grasp the business opportunities associated with risks to formulate company development strategies.

The Enterprise Risk Management Committee reports to the ESG Steering Committee to ensure alignment with the Company's sustainability strategy; and, the ESG Steering Committee is overseen by the Nominating Committee of Board-level and reports to the Board of Directors at least once a year to ensure alignment with the risk management policies, and implementation and effectiveness of risk management measures. UMC also incorporates internal audit and internal control functions to ensure that the risks associated with operations are effectively controlled.

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

In 2023, R&D expenses are expected to be 4% to 8% of operating revenue, which will be subject to global market and the Company's actual operation conditions.

### Major R&D Projects In Progress

Latest Annual Project	Current Progress	Time of Mass Production	Key Success Factors for Future R&D
14nm process technology	The 14nm FinFET platform compact process (14FFC) successfully entered mass production with product yield reaching 90% and introduced into 5G and netcom applications.	2023	• Customer circuit design verification and yield reached mass production levels and performance meets product design targets.
22nm process technology	For 22nm ultra-low power/ultra-low leakage technology development, following the successful mass production of various 22nm products, including customer DTV chips, the design specification of the automotive Grade-1 platform has been successfully established, and the reliability and durability verification have been completed.	2023	• Customer circuit design verification and yield reached mass production levels and performance meets product design targets.
22&28nm image signal processor technology	The 28HPC+ customized process technology being applied to the image signal processor (ISP) had successfully mass produced the higher-end 108Mp products. The industry's highest resolution 200Mp and smallest pixel size product entered mass production in 2022. 22nm ISP process technology is in development and its component models, design specifications, and related IPs have been established.	2023	• Customer circuit design verification and product yield qualification for mass production.

**Risk Management and Evaluation (Continue)**

Latest Annual Project	Current Progress	Time of Mass Production	Key Success Factors for Future R&D
Display driver IC and power management process technologies	Low temperature polycrystalline oxide panel (LTPO OLED) drive chip products using 28nm high voltage 27V process technology have entered mass production. The LTPO OLED driver chip product of 22nm high-voltage 25V process technology has completed product verification. 0.11μm BCD technology platform combined with embedded non-volatile memory PMIC has completed the automotive component model and design specifications, and also completed the development of automotive IP platform.	2024	<ul style="list-style-type: none"> <li>Cooperating with customers to create a win-win situation.</li> <li>Completing IP verification on time.</li> <li>Quality verification is in compliance with customer requirements.</li> </ul>
Non-volatile memory process technologies	The 40nm non-volatile memory eFlash and resistive random access memory RRAM have entered mass production. 22nm RRAM and eMRAM are developed on schedule. High density 1Gb HDMRAM has entered trial production.	2023	<ul style="list-style-type: none"> <li>Cooperating with customers to create a win-win situation.</li> <li>Completing IP verification on time.</li> <li>Quality verification is in compliance with customer requirements.</li> </ul>
RFSOI process technologies	UMC's RFSOI technologies satisfy the strict requirements of all 4G/5G mobile phones for RF switches and the 90nm RFSOI process technology has been mass-produced. The 55nm RFSOI process, meeting the 5G/sub-6GHz market demand, has also entered mass production. UMC continues to develop the 40nm and 22nm RFSOI technology platforms, with a view to deploy in the market above 40GHz in the future.	2024	<ul style="list-style-type: none"> <li>Cooperating with customers to create a win-win situation.</li> <li>Completing IP verification on time.</li> <li>Quality verification is in compliance with customer requirements.</li> </ul>
CMOS image sensor (CIS) and MEMS process technologies	55nm BSI (Back-illuminated image sensor) CIS process technology have entered mass production, which can be applied to high dynamic range (HDR) products to meet the market demand of high sensing resolution and fast focus function (PDAF).	2023	<ul style="list-style-type: none"> <li>Customer circuit design verification and product yield qualification to meet mass production standards.</li> </ul>
Compound Semiconductors	UMC continues development of Gallium Arsenide pHEMT key technologies for 5G mmWave base stations and Ka/Ku-band LEO satellite receiver chips. UMC also actively invests in the wide-bandgap component development of Power GaN 650V and RF GaN technology platforms.	2023	<ul style="list-style-type: none"> <li>Cooperating with customers to create a win-win situation.</li> <li>Customer circuit design verification.</li> </ul>
3D-IC W2W hybrid bonding	3D-IC wafer-to-wafer (W2W) hybrid bonding technology has been combined with an open supply chain cooperation model to provide customers with reliable and flexible solutions. UMC has completed the chip design and product verification for customer with 3D W2W stacking technology and plans to enter trial production in 2023.	2023	<ul style="list-style-type: none"> <li>Cooperating with customers to create a win-win situation.</li> <li>Customer circuit design verification.</li> </ul>

Note: The projects above account for around 60% to 75% of the total annual R&D expenses in the year. The actual time of mass production is subject to the market and customer demand.

UMC has been constantly strengthening its independent R&D and fabrication capabilities. Going forward, UMC will continue to be dedicated to the R&D of logic 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 IDM and fabless companies, 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 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 Southern Taiwan Science Park with sufficient funds for enriching the overall R&D resources. In terms of 14nm process technology, UMC completed the development of its 14nm FFC platform, with product yield reaching 90% and performance meeting design targets. Meanwhile, the 14FFC platform process also passed customer product HTOL (High Temperature Operating Life) reliability qualification and entered mass production. With the successful rollout of 5G and netcom applications, UMC 14FFC has also attracted customers to engage new product design-ins, with tape-out schedule for production. UMC's R&D team will continue

to optimize 14nm to take full advantage of the performance, power consumption, and gate density of 14nm FinFET in order to drive next generation Internet, AI, and consumer product applications.

The development of a 22nm ultra-low power/ultra-low leakage (22ULP/22ULL) shrink process technology can be provided as a planar process technology solution with lower cost and better cost efficiency for customers. Following the mass production of customer digital TV (DTV) chips made with 22ULP/22ULL technology platforms in 2020, UMC continues to optimize the process and expand the scope of product applications in electronic products such as analog, mixed-signal, RF technology, Internet of Things, mobile devices, and automotive electronic products. Under the architecture of the 22nm process platform, the design specification of the automotive Grade-1 platform has been successfully established, and the reliability and durability verification have been completed. The 22nm image signal processor (ISP) has established component models, design specifications, and related silicon IPs; it is expected to enter trial production in 2023. On the UMC's 28nm high-performance computing process 28HPC+ customized ISP, following the high-end 108Mp products successful mass production, the industry's highest-end 200Mp and smallest pixel size product also entered mass production in 2022. The 28HPC+ millimeter wave (mmWave) process

## Risk Management and Evaluation (CONTINUE)

has been verified by performing a low noise amplifier (LNA) IC tape-out on the first pass silicon success, leveraging UMC's 28HPC+ process technology and the certified mmWave design flow with complete RF solution. UMC's 28nm high-voltage process has a market share of 85% and ranks first in the global market share of DDI in the LCD markets. The low temperature polycrystalline oxide (LTPO) OLED panel driver chip products using 28nm high-voltage 27V process technology have entered mass production. In the 28nm ultra-low power consumption embedded high-voltage active matrix organic light-emitting diode (AMOLED) display driver chip technology development, the process technology completed component modeling and design specifications. While the 22nm high-voltage 25V process technology of LTPO OLED driver chip has completed the product verification. Following the successful mass production of 0.11 $\mu$ m BCD (Bipolar-CMOS-DMOS) technology, 0.11 $\mu$ m BCD technology platform combined with embedded non-volatile memory has completed the automotive component model and design specifications, and also completed the development of automotive IPs. The development progress of a next-generation customized PMIC for mobile phones is on track and is expected to enter trial production in 2023.

The 40nm non-volatile memory eFlash has entered mass production. The 28nm embedded super flash memory (ESF4) has achieved a stable yield rate and is in reliability verification, which will meet the needs of the Internet of Things (IoT). 40nm Resistive Random Access Memory (RRAM) has entered mass production, while 22nm RRAM technology platform is on schedule and has passed reliability verification. In the 22nm eMRAM (Embedded Magnetoresistive Random Access Memory) process platforms development, the 22nm high-density 1Gb HDMRAM product, to be applied in aerospace/LEO satellite communications, entered trial production in 2022. The 55nm RFSOI (Radio Frequency Silicon on Insulator) process has entered mass production, and meets the 5G sub-6 GHz market requirements. At the same time, the 40nm RFSOI technology platform is being continuously developed to capture subsequent 5G/mmWave growth trends. 22nm RFSOI has also entered the development stage, with a view to deploy in the market above 40GHz in the future. In the CMOS image sensor (CIS) development, the 55nm back-illuminated image sensor (BSI) CIS process technology have entered mass production.

Compound semiconductor gallium arsenide (GaAs) components, combined with the SAW filter integration solutions for existing HBT power amplifiers and existing RFCMOS Switch and LNA technologies, provide mobile phone radio frequency front-end module and WiFi6/7 communication module integrated manufacturing solution. The Company will continue to develop gallium arsenide pHEMT technology suitable for the 5G mmWave base stations and Ka/Ku-band low-orbit satellite receiver chips. Moreover, as for the third type of wide-bandgap semiconductors, UMC actively invests in the development of gallium nitride power (Power GaN) and microwave (RF GaN) technology platforms, targeting the market of high-efficiency power components and 5G/LEO satellite communications components. The 650V GaN power components are expected to enter trial production in 2023. UMC's 3D-IC wafer-to-wafer (W2W) hybrid bonding technology, combining with an open supply chain cooperation model, provides customers with reliable and flexible solutions. As for the application of radio frequency components, UMC has completed the chip design for a customer's RF product, using 3D-IC W2W stacking technology to reduce chip area by 40%. The product has completed product verification, and is expected to enter trial production in 2023.

In order to control the technology and development schedule to fulfill the promise of customer market launch, UMC will continue with its 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 its 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 bank loans as of December 31, 2022, if the interest rate increases/decreases by 10 basis points, the Company's net profit for 2022 will decrease/increase by NT\$19,279 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 a risk analysis of the assets and liabilities denominated in foreign currencies as of December 31, 2022, when the NT dollar strengthens/weakens by 10 percent against the US dollar, the Company's net profit for 2022 will decrease/increase by NT\$1,304,586 thousand. On the other hand, when the Chinese Yuan strengthens/weakens by 10 percent against the US dollar, the Company's net profit for 2022 will decrease/increase by NT\$572,245 thousand. When the Japanese Yuan strengthens/weakens by 10 percent against the US dollar, the Company's net profit for 2022 will decrease/increase by NT\$537,952 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 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.

### Inflation

The inflation status in 2022: Due to the impact of the COVID-19 pandemic and the Russia-Ukraine war, global supply chain delays, rising oil prices, and currency policies around the world have led to an increase in the consumer price index (CPI) in Taiwan, with a yearly growth rate of 2.71% in 2022, higher than the previous year. The 2022 Taiwan consumer price index (CPI) is 108.27%, and overall consumer prices are still stable. It will have no impact on the Company's revenue results.

**Risk Management and Evaluation (CONTINUE)**

**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 to reduce operating and financial risks.

The Company has established "Loan Procedure," "Endorsements and Guarantees Procedure," and "Financial Derivatives Transaction Procedure" in compliance with the relevant rules and regulations issued by the 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 has 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 of Changes in Technology and the Industry on the Company's Financial Results**

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 our technical advantages, UMC invested a total of NT\$13 billion in research and development in 2022. 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 US\$2.7 billion in capital expenditure during 2022. Looking into 2023, UMC will continue to appropriately invest in 22/28nm capacity to fulfill growing wafer demand, optimize product mix, and penetrate emerging applications. The Company believes that these efforts will facilitate

higher customer adoption of our process technologies and grow UMC's market share to drive business expansion. UMC will strive to enhance its operations and preserve the best interests of its shareholders.

**Financial Impact of Information Security Risks and Corresponding Response Measures**

According to the Global Risks Report 2022 issued by the World Economic Forum, cybersecurity failure is among the top risks for years. Insufficient defense against cyber-attacks may not only expose the Company to the risks of data leakage and ransom threats, but may also interrupt the production system, causing serious operating losses or even damaging the reputation of the Company. Many international and well-known companies have encountered serious losses due to the ransomware attacks. Facing the ever-changing and diverse external threats, it is critical for the Company to strengthen corporate information security with available resources.

In 2018, UMC established the Enterprise Risk Management Committee to coordinate collaborate with key organizations in the Company's risk management and control to manage internal and external risks. According to the Enterprise Risk Management Committee management procedure, the Company assesses the risk level of information security items, takes response actions, and regularly reviews effectiveness of those actions.

UMC has a complete, multi-layer defense mechanism including firewall, intrusion detection, antivirus system, vulnerability scanning, patch management procedure and penetration testing. In 2019, UMC engaged an international professional security company to assess overall security and used the inspection results as a basis for further improvement. The summary of the information security assessment is as follows: "UMC has an information security management system in place. According to this system and control measures, conventional malicious programs such as attacks by viruses, Trojans, worms, and external hackers will not be able to easily damage UMC's information system."

Informational security threats are intensifying and have caused business interruptions for companies in Taiwan and around the world. Even if an enterprise has adequate defense in place, there is no guarantee that it will not become the target of an attack. UMC has purchased information security insurance since 2019 as one of the measures to mitigate information security risks. This insurance has been in effect since January 2019 with a retroactive option that can trace back stealth threats existing in the enterprise before the effective implementation date. The insurance amount is US\$10 million and covers all UMC fabs in Taiwan, Singapore and Japan.



## Risk Management and Evaluation (Continue)

### 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 a global customer base and a local manufacturing trend caused by the Covid-19 pandemic and US-China Tech War, 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 the Company can take advantage of the increased economies of scale and operational efficiency through mergers and acquisitions (M&A). 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 the acquired company was renamed United Semiconductor Japan Co., Ltd.. The acquired company is UMC's production base in Japan for 12-inch wafer services.

The main possible risk of cross-border M&A involves integration and compliance with the local regulations, and whether production synergy following mergers and acquisitions can meet expectations. If, for some reason, the M&A cannot be successfully completed or is unable to achieve the operational synergy target, it may affect the company's overall operating performance and even the company's long-term growth strategy.

UMC established a dedicated organization to execute M&A related activities, with a view of successfully completing equity purchases and taking advantage of operational synergies. At the same time, the company considers corporate sustainability in its business strategies and seeks to act in the best interests of all shareholders. Therefore, UMC strives to meet the requirements of regulators when executing equity purchases or M&A plans. In addition to careful planning and consultation in advance, the company also consults professionals from the respective countries about the local merger mechanism. To facilitate operational efficiency, the company recognizes cultural differences and quickly establishes a communication channel to build trust with the employees and customers of the acquisition target; reconciles the operation process and calibrates the quality management system to smoothly port new processes and new products; plans an expert team to promote benchmarking; and introduces best practices to maximize overall operating efficiency.

### 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 due to softening demand still must be accounted for under depreciation of plants and equipment. This risk would be considered a burden to the Company.

The Company's capacity expansion is the result of deliberate capital expenditure plans, which focus on satisfying customer 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, comprising of members from the Company's independent directors and non-executive directors. The Committee's goals 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 of Procurement Concentration

Risk of material shortage: insufficient production capacity, accident in the factory, or natural disaster are some examples which could result in material shortage.

Risk avoidance approach: currently UMC adopts a supplier self-management model, in that these materials are stored in the Company 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. 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."

**Risk Management and Evaluation (Continue)****Risks of Sales Concentration and Response Measures**

UMC has established long-term and stable cooperative relationships with many world-class customers, combining these customers' advantages with UMC's competitive strengths to ensure the Company's long-term and stable growth. In 2022, UMC's top ten customers accounted for approximately 52% of UMC's total operating revenues. The Company will continue to develop both advanced and specialty technologies, and provide customized solutions for specific products and applications to meet customers' requirements and expand customer base. Through continuous product mix optimization and enhancing the flexibility of capacity allocation, the Company can lessen the impact of fluctuations in the global economy and mitigate risks.

**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 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 the Company's 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 us based on the Trade Secret Act of R.O.C., alleging that our employees misappropriated the trade secrets of Micron Technology, Inc., or Micron, and of Micron Memory Taiwan Co., Ltd.. On June 12, 2020, an adverse ruling issued by the District Court of Taichung in a suit alleged that UMC, two of its current employees and a former employee engaged in the misappropriation of trade secrets. UMC appealed against the sentence. On November 26, 2021, UMC and Micron announced a settlement agreement between the two companies for all legal proceedings worldwide (the "Settlement Agreement"). Accordingly, Micron submitted a motion to withdraw the case. On January 27, 2022, the Intellectual Property and Commercial Court announced its ruling of this case and UMC was sentenced to a fine of NT\$20 million, subject to a two-year term of probation.

On December 5, 2017, Micron filed a civil action with similar cause against us 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 us from using its trade secrets in question. In accordance with the Settlement Agreement, the court issued a dismissal of the case with prejudice in January 2022.

On January 12, 2018, we 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 question, 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 our patent rights. The court approved withdrawal of one of the patent infringement actions on our motion while the other two actions are still on trial. In accordance with the Settlement Agreement, UMC submitted a motion to withdraw the case, and the motion is currently pending.

The amounts of aforementioned fine from ruling of the Intellectual Property and Commercial Court and the worldwide settlement between UMC and Micron have no material financial and operational effect on UMC's business for the years presented.

## Risk Management and Evaluation (Continue)

### 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.

UMC's ability to compete also depends on its ability to operate without infringing on third parties' intellectual proprietary 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 Sixth Assessment Report (AR6), 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 Climate Change Risk and Opportunity Assessment Team conducts assessments every year, which is based on the aspects such as policies, regulations, transition of market and technology, reputation and physical risk. The assessment result and related countermeasures are submitted to the Corporate Sustainability Committee for approval. The 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, carbon border tax, 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 C<sub>2</sub>F<sub>6</sub> with C<sub>3</sub>F<sub>8</sub> and C<sub>3</sub>F<sub>8</sub> with C<sub>4</sub>F<sub>8</sub>) 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, UMC has been actively drafting environmental protection objectives through various stages and aspects and developed specific implementation plans for gradual promotion.

## Risk Management and Evaluation (Continue)

### Energy consumption policies affect the enterprises' development and bring unstable power supply risk

In order to reduce the carbon emission, governments around the world have taken various proactive actions to constraint or strengthen energy conservation and carbon reduction effort of enterprise. In 2021, Taiwan government has required major consumers (with a contracted capacity more than 5,000 kw) to reach 10% of their obligatory amount of renewable energy for self-use before 2025. In response to the operational risk, UMC has planned various actions to meet the requirement, including setting up renewable energy power generation facilities, installing energy storage system, purchasing renewable energy voucher, etc. It is estimated that the annual amortization will not exceed NT\$100 million in the next 20 years. Besides, Singapore government has imposed carbon tax since 2019, and announced the carbon price per ton will be raised gradually. (The price in Singapore is S\$5 currently, and it will be gradually raised up to S\$50~80 in 2030.) In Taiwan, "Climate Change Response Act" was also promulgated in February 2023 including carbon-fee charging from enterprises, which will increase UMC's investment cost and bring financial impact. China government also requested enterprises to reduce electricity consumption in 2022. Although UMC's mainland plants have not been directly affected, we will continue to pay attention to internal and external demand, regulation development, and policy changes, and improve communication with local governments to monitor risks and take early response.

In addition, UMC has considered the risk of failure on government's antique power generators during peak power consumption period; it might lead to insufficient capacity of backup power, resulting in voltage drops and power outages. In order to ensure uninterrupted operation and production, UMC has installed diesel generators in the plants and increased the proportion of UPS configuration in important facilities and equipment. In the meantime, UMC plans to replace existing UPS lead-acid batteries with lithium batteries year by year to improve supply stability. Moreover, UMC has also established a diesel safety inventory monitor mechanism to ensure availability. For details, please refer to UMC Sustainability Report.

## 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 onsite 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, including EQE (EQE International Inc.) and EQVEC (EQV ENGINEERING CONSULTANTS, LLC) 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 continued to introduce new seismic protection technologies, including anti-earthquake damper for buildings and seismic isolation platforms for reticle stocker 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 Drought and Flood Caused by Climate Change

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 added flood gates at low-lying entrances and exits, planned alternative transportation routes, etc. to strengthen the ability to withstand flooding. 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. In the future, UMC continues to evaluate various solutions such as reclaimed water, recycled water and desalinated seawater to reduce water risks and strengthen operational resilience.



## Risk Management and Evaluation (Continue)

### 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 machines are moved in.

### International Risk Rating (Triple-Star Rating System)

UMC introduced the Triple-Star Rating System since 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 20 items 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. Each and every one of UMC fabs has developed its BCP workbook (Business Continuity Plan workbook) since 1999. Hsinchu headquarters, Fab 12A, and Fab 12i passed ISO 22301:2012 verification sequentially since 2013, and became a leader in the semiconductor industry to receive ISO 22301 Business Continuity Management system verification. The transition of ISO 22301:2019 new version verification was also completed in 2021, and it will be promoted to other production fabs continuously before 2024 to build organization resilience and protect the utmost rights and interest of stakeholders.

UMC Business Continuity Policy and Objectives:

#### Policy

- UMC aims to provide customers with more excellent and continuous service.
- UMC carries out business continuity system operation and resources integration to ensure the system's effectiveness.
- UMC reviews and improves continuously to strengthen resilience of responding to various disasters before/ during/ after the disruption from business impact to ensure the utmost rights and interests of customers and stakeholders.

#### Objectives

- Personnel safety is the top business continuity objective.
- Based on risk assessment results, the Company aims to develop various disaster prevention measures and responses to reduce operational impact and shorten recovery time.
- UMC follows ISO 22301 management system standard and executes BCP drill on a regular basis to review the effectiveness of business continuity plan and make continuous improvements.

## Impact of Geopolitical Developments on the Company's Investments and Operations and Countermeasures

Rising political or economic tensions between China and the United States have led to sanction measures and triggered a trade war. Measures taken by governments include tariff increases, embargoes, policy interventions, and government subsidies. U.S.-China antagonism has also affected cross-strait relations, and the recent rise in tensions has increased the uncertainty of future operations and investments. It may impact the Company's investments and operations, and may also affect revenue, delivery time, goodwill, and investment plans. For example: a sharp increase in tariffs may drive up end-market prices, thereby reducing demand and UMC's customer orders; the United States Export Control Act regulates exports to certain countries if the content originating from the U.S. exceeds a certain ratio of the product, which may affect UMC's direct or indirect supply to specific customers; restrictions on the export of high-tech materials or equipment may affect UMC's production and capacity expansion plans, which may disrupt shipments and damage the Company's goodwill; investment restrictions and regulatory changes may affect the Company's strategic plan, operational performance, and management complexity; political tensions across the Taiwan Strait may affect the willingness of UMC customers to place orders; if the situation escalates further, material supplies may be affected and operations may be disrupted.

UMC's countermeasures include:

- (1) Diversifying customer base and product portfolio. In addition to existing business in North America and Asia Pacific, UMC is planning to further expand its footprint in Europe, Japan, and other regions. The Company is also actively seeking opportunities in 5G, IoT, and AI applications, on top of its established presence in the automotive and industrial applications.
- (2) Strengthening the diversification of production locations and the flexibility of production allocation. In addition to the expansion in Taiwan, continuing to expand the regional production capacity in Japan and Singapore for serving global customers with multiple production areas; increasing the flexibility of cross-regional and cross-factory support, and adjusting production allocation and capacity expansion plans in a timely manner.
- (3) Accurately tracking changes in customer demand and in the external environment, including global regulations, politics, and economic conditions, evaluating their impact on the acquisition of production resources, and taking necessary risk response measures in a timely manner. Practical measures include establishing a raw material supply chain tracking mechanism to accurately grasp the geographic distribution of raw material origins; closely monitoring regulatory changes, and strengthening management adaptability, and legal compliance; paying close attention to the dynamics of relations across the Taiwan Strait, adjusting the possible scenarios for changes on a rolling basis, and planning corresponding measures to reduce operational impacts.

## Risk Management and Evaluation (Continue)

### The Impact of Infectious Diseases on the Company's Operations and Countermeasures

Any outbreak of infectious diseases, such as coronavirus (COVID-19), Ebola, bird flu, swine flu, or severe acute respiratory syndrome (SARS), can affect employee attendance, and even affect company operations. For example, the coronavirus pandemic that started in early 2020 adversely affected the global economy and disrupted supply chain. It may expose UMC to certain risks, including: unstable sales activities and customer orders, reduced plant operations and manpower, international travel and communication difficulties, limitations for transnational cooperation projects, and disruption to supply of materials.

The Company monitors potential risks of various infectious diseases and tracks any developments. UMC established its coronavirus epidemic control and response center in January 2020 to coordinate relevant information and resources, including:

- (1) Regularly review and discuss issues including the impact on production, supply chain management, epidemic prevention strategies, and response measures.
- (2) Clearly define the various stages of infectious disease crisis management, develop response measures for each stage, and take action according to the epidemic situation. For example: Minimize employee infection and production impact (for detailed related measures, please refer to UMC's Sustainability Report); increase buffer inventory, and find and expedite the verification of alternative suppliers to reduce material shortages; and lessen the operational impact of specific fabs by adjusting or transferring the allocation of orders to other facilities.
- (3) In order to respond to relevant risks and opportunities, closely monitor the medium- to long-term developments in the industry, such as inventory adjustments, structural changes in market demand, and restructuring of the global supply chain.

By the end of 2022, most countries have gradually relaxed epidemic prevention and control measures, and the impact of COVID-19 is expected to slow down in the future.

### 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 to all employees. The Company focuses on "talent attraction, cultivation, and retention" as the key 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.

### Countries Using Policies/Resources to Build Domestic Semiconductor Manufacturing Capabilities, the Risks Posed to the Company's Future Growth, and Countermeasures

The trade dispute and technology war between certain countries, the COVID-19 epidemic, and a major shortage of automotive chips have led countries to view semiconductors as an essential component of technology products and an important strategic material, and recognize that a disrupted supply of chips can impact a country's economic growth or threaten its national security. Therefore, developing domestic semiconductor manufacturing capabilities has become an important issue for major powers. This may have an impact on UMC's revenue, investment plans, and competitiveness. For example: local government policies and regulations to compel customers to place orders with domestic manufacturers may reduce UMC's orders and affect the Company's revenue; policies or subsidies by major powers to expand semiconductor capacity may reduce UMC's production share in the industry and cost competitiveness; prohibiting the export of key equipment or materials to specific countries may affect UMC's global production strategy, or prompt urgent revisions to investment plans and result in lost business opportunities.

UMC's countermeasures include:

- (1) Monitoring the status of the domestic semiconductor capacities in all countries, analyzing the impact to the Company's addressable market, adjusting sales strategies in a timely manner, and listing it as a necessary evaluation item when considering capacity expansion.
- (2) Actively seeking alternative suppliers to diversify risks arising from government policies related to the export of equipment and materials.
- (3) Analyzing the relevant laws of various governments and the trends of industry policies, and initiating mergers and acquisitions, forming alliances to build new facilities, and collaborating on capacity/technology at the appropriate time in order to capitalize on opportunities for international cooperation.

**Risk Management and Evaluation (Continue)****Shortages of Resources Caused by Strong Demand for Semiconductors, the Potential Impact on UMC's Capacity Expansion and Countermeasures**

The COVID-19 pandemic accelerated digital transformation, leading to a surge in global semiconductor demand. At the same time, the pandemic's impact on related industries resulted in reduced and unstable supply and insufficient shipping capacity, creating a severe undersupply situation. Furthermore, semiconductor companies fearing insufficient supplies are competing for production resources, which has exacerbated the shortage situation and prolonged delivery, and pushed up the prices of raw materials. This may impact UMC's revenue, delivery time, cost, goodwill, and investment plans. For example: suppliers may be unable to deliver on time due to their own material shortages, thereby resulting in production disruptions for UMC and delaying delivery to the company's customers; rising transportation and raw material costs may increase UMC's overall operating costs; the surge in business for equipment suppliers may lead to delivery delays, resulting in delays to UMC expansion plans and subsequently affecting delivery to customers and the Company's goodwill.

UMC's countermeasures include:

- (1) Increasing the frequency of surveys to monitor the production capacity of vendors and delivery date of key materials and equipment.
- (2) Signing supply agreements or obtaining capacity guarantees with suppliers to ensure the supply quantities and purchase price.
- (3) Actively introducing alternative materials, increasing inventory level, and adjusting the order method to diversify purchases and mitigate risks.
- (4) Reserving and confirming airline seats in advance, or charter flights.
- (5) Optimizing machine verification process to shorten machine lead-in time to mass production.

However, as demand for semiconductors is expected to slow down in 2023 due to changing in global economic conditions, the potential impact above may be eased.

**Geopolitical Conflicts and Severe Inflation Create Risks of Effective Cost Reduction to Remain Competitiveness, and the Company's Countermeasures**

Over the recent years, the COVID-19 pandemic has disrupted the stability of the global supply chain and led to an increase in supply costs. To respond to the impact of COVID-19 and revive the economy, countries have promoted monetary easing policies, which have caused inflation and interest rates to soar. The Russian-Ukrainian war has resulted in tight global energy and food supplies, leading to rising prices that are further pushing up inflation to record highs. In the meantime, global economic forecast has been revised downward, and the strong demand for semiconductors is also slowing down. However, supply chain costs remain high without a downtrend, which would affect the cost and operation of UMC. For example, soaring logistics costs and raw material costs would increase the overall operating costs of UMC; rising labor costs could increase maintenance contract costs; long-term supply agreements with suppliers were signed to ensure stable supply in the first place, but these agreements could lead to penalties or compensations when there is a reversal in demand.

UMC's countermeasures include:

- (1) Actively introduce to alternative materials and machines to increase scheduling flexibility and bargaining power.
- (2) Research, analysis and promotion of material usage reduction.
- (3) Promote a systematic cross-factory parts management system to exert the effectiveness of integrated management.
- (4) Increase the in-house repair rate of machine parts.
- (5) Use digital transformation to strengthen the procurement risk assessment process and long-term contract review mechanism, which would reduce the impacts on long-term procurement during economic downturns.

**Risk Management and Evaluation (Continue)**

**Assess the Risks or Opportunities to the Community and Implement Corresponding Measures**

To effectively quantify the benefits brought about by community services, UMC referred to the community investment assessment system established by "Business for Social Impact". Accurate records were kept of the investments made in terms of time, cost, material donations, and management expenses to assess the favorable outcomes resulting from these investments. Outputs of community services include reductions in costs, generation of benefits, and intangible influences such as positive corporate image, becoming a benchmark of corporate social responsibility, protect the ecological environment, establishing positive value systems amongst school children, and helping to compensate for the inadequacy of educational resources for school children living in remote areas.

- Set up supplementary classes for disadvantaged children  
 UMC has sponsored a total of 110 foster children to help alleviate the impact of economic factors on these underprivileged families for 20 years, as well as to help children from underprivileged or disadvantaged families with the assistance of professional social workers. In addition, UMC colleagues also serve as letter writing volunteers to provide care and encouragement to the foster children. This enables UMC's "tech-savvy employees" to manifest their kindness and give back to the community. With the Company's "Funding from Company, Endeavors from Staff" approach, love and hope can be linked up with the simplest and the realest companionship. UMC has been working with different social welfare organizations in Hsinchu and Tainan to set up after-class tutorial classes. Additionally, UMC used the advantage of service learning in local universities to recruit students from National Tsing Hua University, National Yang Ming Chiao Tung University, and National University of Tainan to serve the children from disadvantaged families as tutors and tutorial class volunteers. In 2022, the volunteer service hours for the tutoring class were 9,349.5 hours, benefiting 3,111 person-times students.

- Protecting the Ecological Environment - Initiating UMC Eco Echo Award to Help Communities, NPO and the Youth  
 UMC was well aware of the huge impact it can have on society and the environment before the climate change issue was widely recognized. After completing the first EPA (Environmental Protection Administration)-approved carbon emissions trading in 2014 in Taiwan, UMC donated the trading yield to launch the "Eco Echo Ecological Conservation Hope Project" in order to promote environmental and biodiversity conservation, restore species and ecosystems, and enhance the public awareness of environmental protection.

In 2016, the UMC Eco Echo Award was established to solicit high-quality ecological conservation projects, including "Large-scale Ecological Conservation projects" and "Youth Environmental Action Award" with the aim to encourage young students to turn their enthusiasm and creativity for environmental protection into practical actions and further bring changes to the environment. The 7th Eco Echo Award has expanded its sponsorship and added a new "Green Innovation Award" in addition to the existing ecological conservation awards. This new award covers two major issues, climate change and circular economy, and the total prize money has been increased from NT\$3 million to 4 million, making it the highest award in the field of ecological conservation initiated by businesses in Taiwan. In the seven years since the inception of the UMC Eco Echo Award, a total of 53 ecological conservation projects and youth environmental actions have been implemented across Taiwan. In addition to our own effort, UMC has also linked resources from various parties and combined the power of supply chain partners to realize more outstanding ecological conservation projects. In 2022, 8 of UMC's supply chain partners joined in this effort. UMC expects the UMC Eco Echo Award to achieve the co-prosperity of enterprises and the environment, and to be the powerful guardian of Taiwan's ecological environment.

**Other Significant Risks**

None.

Note: The analysis and valuation of Risk Items shown above include the data during 2022 and as of the Annual Report Printing Date.

**Other Necessary Supplements**

None.

# Corporate Sustainable Development

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## Description of Sustainable Management

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 Sustainable Development Best Practice Principles.

Currently, through the Corporate Sustainability Committee, UMC stays up to date on the development of domestic and international sustainable development standards and changes in the corporate environment. UMC regularly reviews and improves its sustainable development practices, systems and management policies to improve the effectiveness of its sustainable development implementations.

As of 2022, UMC has been listed as one of the Dow Jones Sustainability World Index for 15 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.

The sustainable awards granted to UMC in 2022 are listed below:

- Selected as a member of Dow Jones Sustainability Indices (DJSI) World Index for the fifteenth straight year and also named a constituent of Emerging Markets Index;
- Rated at "A" in MSCI ESG Ratings and selected as component of MSCI ACWI ESG Leaders Index and MSCI Emerging Markets ESG Leaders Index;
- Selected as component of FTSE4Good All-World Index and FTSE4Good Emerging Index for eighth consecutive year, and FTSE4Good TIP Taiwan ESG Index since the launch of the index in 2017;
- Rated "Prime" by ISS ESG Corporate Rating for sixth consecutive year;
- Received a rating of "low risk" from the Sustainalytics ESG Risk Rating;
- Recognized in CDP's "A List" for environmental transparency and action on both climate change and water security;
- Awarded "Corporate Sustainability Report Award" for fifteenth consecutive year and the highest Platinum award for the fifth time;
- Awarded "Top 10 Taiwanese Companies Sustainability Model Award" for the fourth time and received third place in manufacturing enterprise category this year;
- Awarded "Excellence in Corporate Social Responsibility" for the ninth time and received sixth place in large enterprise category this year;

These honors and recognitions indicate that, after long-term dedication to sustainability, UMC's actions, transparency and completeness of information disclosure have all reached the international level, such that it has become a global benchmark enterprise.

Member of

### Dow Jones Sustainability Indices

Powered by the S&P Global CSA



FTSE4Good  
TIP Taiwan ESG Index



2022 MSCI ESG Leaders  
Indexes Constituent

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 2010, 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 2021, UMC is ardently responding to the Paris Climate Agreement goal and announced its pledge to reach net zero emissions by 2050. In the meantime, UMC become the second semiconductor foundry to join RE100, the global corporate renewable energy initiative, and committed to use 100% renewable energy by 2050 by setting progressive goals of 25% by 2025 and 50% by 2030.

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 2022, 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 and 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

**Description of Sustainable Management (Continue)**

resource reuse, recycling and reducing to achieve green products with lower environmental impact. In 2022, UMC has launched the Supply Chain Greenhouse Gas (GHG) Inventory Initiative. By providing tools and resources for measuring and managing emissions, UMC aims to assist 500 suppliers in completing their GHG inventories, striving towards its goal of 20% reduction in supply chain emissions by 2030. 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.

**Sustainable Governance Structure of UMC**

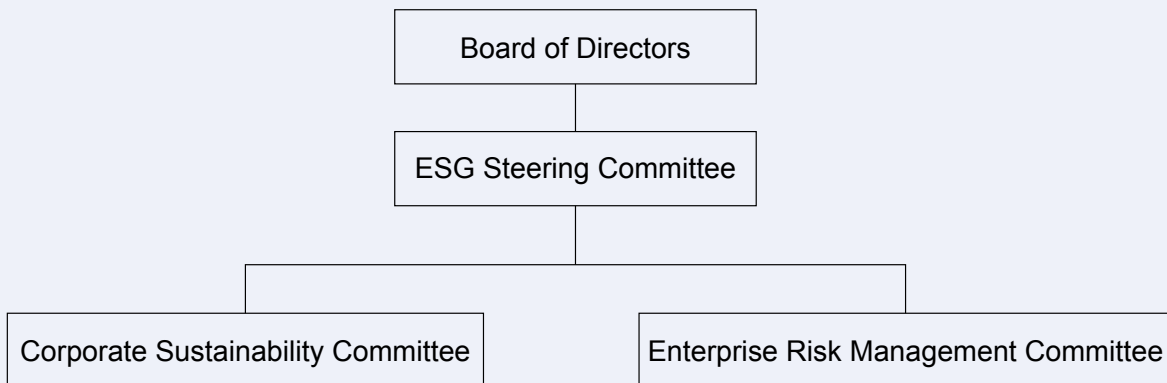
UMC's sustainable governance structure includes the Board of Directors (including the Nominating Committee), the ESG Steering Committee, the Corporate Sustainability Committee, and the Enterprise Risk Management Committee.

In 2020, UMC reorganized its sustainable governance structure and established ESG Steering Committee, consisting of core operating executives, and appointed the Co-Presidents as the Chairmen. The ESG Steering Committee meets every quarter to be in charge of determining UMC's sustainable governance strategy and goals, and reports to the Nomination Committee and the Board of Directors annually on the sustainable performance and plans, as well as key issues and countermeasures that stakeholders are concerned about. The Board of Directors also plays a supervisory and coaching role to determine the likelihood of success of the strategy, regularly review the progress of the strategy, and drive the management team to make adjustments

as needed. The main points of the proposal reported to the Board of Directors in 2022 include (1) ESG activities and achievements; (2) stakeholder communication; and (3) future focus. The achievement of employee's remuneration linked to ESG KPI was also approved by Nomination Committee and the Board of Directors in this meeting. UMC has achieved the ESG targets and the allocation of employee profit sharing percentage would be increased accordingly. Other annual resolutions of the Board of Directors related to sustainability include issuing Restricted Stock Awards (RSA) which set MSCI ESG ratings achieved A or above as one of the performance indicators, "Donation to the UMC Science and Culture Foundation" and the green investment in the "Capital Budget Execution".

The Corporate Sustainability Committee was established in 2008 and responsible for stipulating the direction and goals of corporate sustainability. The Committee reviews the performance and target achievements of eight functional groups, including Corporate Governance, Customer Relationship Management, Responsible Supply Chain Management, Sustainable Innovation, Environmental Planning and Management, Green Operation, Human Rights and Employee Development/Welfare, and Social Participation. The representative of the Corporate Sustainability Committee reports promotion results and plans to the ESG Steering Committee quarterly. The scope of the report includes the management and review of material issues in the area of economics/governance, environment and society.

The sustainable governance structure of UMC is shown in the following figure:



**Materiality Analysis of Sustainable Issues**

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 and communication with various stakeholders. In accordance with the Universal Standard and the rules of Material Topics published by Global Reporting Initiative (GRI), UMC assess the significance impacts the sustainable issue has on the economy, the environment, and people at UMC fabs in Taiwan, Singapore, Japan and China. The management approach and results of material topics were disclosed through the Sustainability Reports and company websites.

GRI Standards, ISO 26000 Guidance on Social Responsibility, UN Global Compact, industry-related special issues, and concerned items in domestic/international sustainability evaluation, etc., are used as the basis for collection of sustainability issues. UMC analyze 20 sustainable issues and identify its actual and potential impacts, and assess the significance of the impacts through materiality analysis workshop. Through the process of discuss and review, the Company identify 12 material topics and formulates corresponding risk management strategy and measures:

**Description of Sustainable Management (Continue)**

Dimension	Material Topics	Positive Impact	Negative Impact	Risk Management Strategy and Measures
Governance & Economic	Procurement and Supplier Management	Building Sustainable Supply Chain	Insufficient Supplier Management	<ol style="list-style-type: none"> <li>Promote the Low-Carbon Supply Chain Project, including GHG emission inventory of the supply chain to enhance the supply chain's resilience.</li> <li>Implement third-party risk assessment to reduce supply chain risks.</li> <li>Formulate "Supplier Code of Conduct" based on Responsible Business Alliance (RBA) Code of Conduct to require all supplier to comply with ethical and social responsibility standards.</li> </ol>
	Innovation Management and Intellectual Property Rights Protection	Technology and Product Innovation	Intellectual Property Infringement	<ol style="list-style-type: none"> <li>Implement important R&amp;D projects based on the Company's development policy through regular KPI reviews, with accountability of vice presidents or above. Relevant departments conduct patent map analysis and brainstorming meetings to identify intellectual property layout opportunities and analyze potential infringement risks.</li> <li>Develop sustainable technology and product R&amp;D plans and review KPIs regularly.</li> <li>Set the direction for intellectual property development with dual-track protection for patents and trade secrets, and promote steady growth in the number of patented rights and registered key trade secrets.</li> <li>Enhance employee awareness of intellectual property protection by regularly conducting related courses.</li> </ol>
	Customer Service Quality	Strength Partnership with Customers	Damage to Customers Rights	<ol style="list-style-type: none"> <li>Continuous quality control based on the quality management system for all products.</li> <li>Dedicated sales and customer service window to maintain contact with customers and provide service at any time.</li> <li>An online real-time customer response system (Voice of Customer, VOC) to collect customer feedback, with dedicated personnel for order processing, and to enhance two-way communication with customers.</li> </ol>
	Product Liability and Lifecycle Assessment	Sustainable and Eco-Friendly Products	Failure to Product Responsibility Management	<ol style="list-style-type: none"> <li>Establish Hazardous Substance Process Management Procedure.</li> <li>The process design strives to streamline the process, save materials, and achieve high efficiency and low power consumption as much as possible.</li> <li>Research and develop green chemicals and actively implement replacement plans for hazardous materials, reducing the impact of chemicals on the environment by replacing them at the source of control.</li> <li>Regular assessments of product carbon footprint, product water footprint, and product life cycle are carried out to identify the environmental impact of products.</li> <li>Require suppliers to provide alternative products that meet the process requirements and comply with environmental regulations, and complete product certification in the process.</li> <li>In addition to complying with all applicable laws and standards, use stricter self-requirements and give priority to hazardous substances that can be replaced.</li> </ol>
Environmental	Climate Strategy and Action	Climate-related Opportunities	Climate Action Failure	<ol style="list-style-type: none"> <li>Promoting 3 resolution to achieve Net Zero: reducing direct emissions, expanded use of renewable energy, and investment in net-zero technologies.</li> <li>Join climate-related initiatives or organizations such as RE100, Association of Taiwan Net Zero Emissions and Taiwan Climate Partnership to grasp the trend of international climate issues.</li> <li>Regularly identify the risks and opportunities of climate change, and develops adaptation and mitigation countermeasures.</li> <li>Set carbon reduction target which are officially approved by Science Based Targets initiative (SBTi). Check and verify KPIs of GHG reduction and Renewable energy usage on a quarterly basis. Steadily plan and achieve phased goals for reducing GHG emissions to carry out the net-zero pathway.</li> <li>Carry out ISO 14064-1 GHG inventory and ISO 14067 product carbon footprint inventory to grasp GHG emissions hotspots and reduction potential.</li> </ol>



## Description of Sustainable Management (Continue)

Dimension	Material Topics	Positive Impact	Negative Impact	Risk Management Strategy and Measures
	Energy Management	Renewable Energy Deployment	Energy Resource Depletion	<ol style="list-style-type: none"> <li>1. Replace old equipment to improve energy efficiency.</li> <li>2. Promote various energy-saving measures.</li> <li>3. Introduce ISO 50001 Energy Management System.</li> <li>4. Install solar photovoltaic system and replace older models with high efficiency ones.</li> <li>5. Promote the purchase of renewable energy and expand the use of renewable energy.</li> </ol>
	Water and Wastewater Management	Water Resource Management	Water Resource Depletion	<ol style="list-style-type: none"> <li>1. Develop and utilize diverse water sources, such as reclaimed water and seawater.</li> <li>2. Multi-pronged approach to increase the amount of water recycling and investment of recycling technology.</li> <li>3. Continue to strengthen and implement water-saving measures.</li> <li>4. Invest in R&amp;D of wastewater treatment technology, and effluent quality monitoring and optimization.</li> <li>5. Participate in public affairs, cooperate with the government and other organizations in communication and exchange counseling of water resource management.</li> </ol>
	Waste and Resource Utilization Efficiency	Circular Economy	Improper Waste Management	<ol style="list-style-type: none"> <li>1. Collaborate with global partners to carry out resource reutilization, achieving the goal of waste recycling and reuse.</li> <li>2. Monitor developments in environmental trends around the world, assess related opportunities and risks, implement waste management, utilize energy and resources effectively, and promote a circular economy.</li> <li>3. Establish a low-carbon circular business model.</li> <li>4. Promote manufacturing process improvement and implement source management measures to reduce the use of raw materials and waste generation.</li> </ol>
Social	Employee Diversity and Inclusiveness	Equal opportunity and diversity in workplace	-	<ol style="list-style-type: none"> <li>1. Announce the "Diversity and Inclusion Statement" and regularly review the performance.</li> <li>2. Set targets for the proportion of female managers and hold sharing sessions on female empowerment to enhance gender equality.</li> <li>3. Measures to build a happy workplace.</li> </ol>
	Talent Attraction and Retention	Enhancing Business Competitiveness and Providing Decent Jobs	Lose Talents	<ol style="list-style-type: none"> <li>1. Regularly review the progress and results of the talent development plan.</li> <li>2. Establish an employee care mechanism to give early warning to employees who intend to leave.</li> <li>3. Conduct market competitiveness analysis at least once a year.</li> <li>4. Join the remuneration surveys of well-known worldwide enterprises, annual review and analyze the Company's compensation policy based on compensation survey results and adjust the policy if necessary.</li> <li>5. Provide differentiated salary and introduce multiple long-term incentive reward tools.</li> </ol>
	Employee Safety and Health	Healthy and Safety Workplace	Occupational Disaster	<ol style="list-style-type: none"> <li>1. Pass the ISO 45001 Occupational health and safety management system certification every year.</li> <li>2. Provide annual health check and special hazards operational health screening, etc.</li> <li>3. Provide employee assistance program (EAP) and on-site Physician Consultation Service.</li> <li>4. Hold series of Health Promotion Activities, provide knowledge of hygiene and sanitation to colleagues and employee-paid influenza vaccination.</li> </ol>
	Human Rights	-	Human Rights Violations	<ol style="list-style-type: none"> <li>1. Formulate "UMC Anti-Discrimination and Anti-Harassment Policy".</li> <li>2. Establish multiple grievance channels for worker to issue illegal violation or workplace violence and regularly implement related training.</li> <li>3. Regularly conduct human rights risk assessment, and regularly conduct RBA self-assessment (SAQ).</li> <li>4. Participate in "Validated Audit Process (VAP)" conducted by third-party agencies to check RBA compliance.</li> </ol>

UMC's Sustainability Report issued in 2022 was composed by referring to the GRI Standards, the Semiconductors Sustainability Accounting Standard 2018 issued by the Sustainability Accounting Standards Board (SASB), and the Task Force on Climate-related Financial Disclosures (TCFD), and the content of this report was verified by SGS Taiwan Ltd. according to Account Ability 1000 Assurance Standard v3 Type 2, High level assurance. In the same year, the Sustainability Report published by UMC was awarded the Corporate Sustainability Report Award for the 15th consecutive year.

## 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 encouraging colleagues to serve as volunteers to participate in various public welfare activities. Summary of key implementations in 2022:

### •Spreading the Seeds of Hope and Cultivate Future Competitiveness

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. It is hoped that through the long-term sponsorship and adoption of enterprises and calling on scientific and technological people to show love, students from disadvantaged families can receive better education and cultivate their future competitiveness, so as to escape the cycle of poverty. This project is funded by the foundation. Cooperative units in Hsinchu and Tainan provide venues as supplementary classrooms, hire college students as part-time supplementary teachers, and provide free tutoring for students who are economically disadvantaged and need to strengthen their schoolwork. For more than ten years, this program has not only been a lesson plan, but a public welfare platform that connects social volunteers and college students to serve with actions.

### •Supporting Diverse Education Programs

The Foundation cooperates with other public welfare units to support the diversified development and adaptive learning of young people. For example, the long-term sponsorship of high school students' drama creation contest "In the Mood for Love National Youth Drama Festival" sponsored by the Youth Performing Arts Alliance is a type of art education as well as a civic and life education. The Foundation also supports the popular science program of the Program the World Association, and the promotion of art education in Chengjheng High School for correction education. The Foundation also supports the TECO Technology Foundation "Indigenous People's Sustainable Education Program" to assist in the transfer of indigenous people's culture and work together to deepen local art education.

In physical education, the foundation has long supported the Nantou Karate team led by coach Huang Taiji and Liao Delan. Through karate, both coaches accompany many disadvantaged students to rebuild their confidence and discover new directions in life. In 2022, UMC keeps the Chiayi National Tung-Shih Senior High School baseball team sponsorship program to expand support for the cultivation of domestic sports talents.

In addition, the long-term exclusively sponsored program "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 to exert the positive influence of the media. The Foundation has long sponsored the Mandarin Daily newspaper education project, providing students with broader reading resources.

In terms of family education, the foundation has chronically sponsored a total of 110 family-supported school children, providing disadvantaged families with stable financial supports so that children can grow up under the care of their families of origin. In addition, employees are also linked to serve as letter-care volunteers to give care and encouragement to adopted children. As one of the simplest concepts of companionship, the program connects love and hope.

- For more information on charity events, please refer to the UMC Science and Culture Foundation webpage.

### •UMC LOHAS Education Foundation

"UMC LOHAS Education Foundation" was established in 2009, and has continued to promote national sports and social welfare over the years and has operated its own recreation center in the Hsinchu Science Park. At present, it focuses on providing a good sports environment for citizens and employees in the park, and assists in handling various activities in the park and the city government.

Summary of key implementation outcomes in 2022:

### •Free Consultation for Health Promotion

Recreation center provides free exercise knowledge training on site or over the phone. Professionals in the gym teach how to use retraining equipment and help answer any questions about exercise. In addition, the recreation center provides body composition analysis. The machine can analyze body composition in a comprehensive manner, such as body fat rate, muscle mass, basal metabolic rate, etc. Professionals introduce the meaning of the measured data and exercise suggestions to users, and establish correct exercise information. Through the stable operation of the sports hall, a safe and modern sports environment is provided for citizens and park employees, and a healthy sports concept is introduced.

### •Integrated Online System of UMC Recreation Center

In 2022, UMC Recreation center updated its sales system to integrate various services such as membership application, venue reservation, course registration/reservation, etc., which can be operated through the linked web page, replace manual work with systematic systematization, increase the convenience of citizens and Science Park employees, and increase the flexibility of course selection, so as to improve the speed and quality of services.

### •Promoting UMC Volunteer Culture

UMC is keen to participate in social welfare activities. In order to encourage employees to engage in social welfare work, UMC offers incentives and official leave hours for employees to participate in volunteer services.

UMC's commitment and participation in the social welfare work is a testament to the importance UMC places on building a volunteer culture and to the mobility, love and selflessness of UMC's volunteers. By adopting a comprehensive employee social club's evaluation system, UMC provides funding to top-performing clubs based on the annual evaluation results to encourage employees to participate in social club activities and call on different clubs to join in the social welfare work. In addition, when planning annual corporate events, UMC co-organizes the events with the related clubs according to the nature and purpose of the events, in order to intertwine the corporate event planning with clubs and social welfare activities, thereby creating all-inclusive synergy.

To enhance energy efficiency and expand the benefits of our core business functions, UMC has established the "UMC Energy Conservation Service Team" with "energy saving and safety" as the core. By stepping out the foundry fabs, the Team allows UMC employees to bring their experiences and expertise to bear on diagnosing and improving energy conservation and fire safety for underprivileged social welfare organizations, assisting in building renovation, and enhancing

## About Social Charity (Continue)

safety and comfort in residential areas, so as to reduce unnecessary energy consumption of these organizations and help them to use their precious resources more effectively.

Charity services provided by clubs and the Energy Conservation Service Team in 2022:

Clubs	Services
Candlelight Club	Hualien Mennonite Hospital Foundation, Boyo Social Welfare Foundation, St. Joseph Social Welfare Foundation, Eden Social Welfare Foundation, St. Raphael Opportunity center, etc.
Ukelele Club	Teaching (Nan-he Elementary School, Fu-sing Elementary School and Xin-xing Elementary School in Hsinchu County) Free performances (Huier Coffee House, Qianxinyuan Nursing Home, etc.)
UMC Drum Club	Charity performances (The Catholic Church Hsinchu Diocese Affiliated Marginal Youth Service Center)
Music Fellow Club	Free performances (Charity event of Southern Taiwan Science Park Bureau)
Energy Conservation Service Team	Free repairs (Good Shepherd Social Welfare Foundation, Dongshi High School, Kindergarten Nursery, Tainan home of philanthropy)
Tennis Club	Movie appreciation event for tennis players
Swimming Club	Nanliao beach cleanup
UMC Fire Brigade	Fire safety, disaster prevention and firefighting training

### •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.

By cooperating with key universities, the semiconductor process practicum courses 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 their knowledge into their career, thereby achieving talent cultivation for Taiwan's semiconductor industry. In 2022, a total of more than 43 million was invested.

Summary of key implementation outcomes in 2022:

	Key Items	Outcome
Industry-University	Semiconductor Processing Practicum Courses and Nano Generation Course	Offered semiconductor processing practicum courses and Nano Generation course with four key universities in 2022. About 622 students enrolled.
Campus Cultivation	Summer Internship	Provide a specific number of internship opportunities each summer vacation. In 2022, a total of 19 interns were recruited.
	Equipment Intern	Provide student internship opportunities at UMC. Cooperate with 11 key universities. In 2022, a total of 74 interns were accepted.
	Enterprise Visitations	Provide enterprise visitation opportunity for schools. In order to cooperate with the anti-epidemic policy in 2022, only key universities and specific program were provided. About 309 students enrolled.
	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 220 students with physical disabilities were provided with work study opportunities, and in 2022, 45 students were still employed.
	Campus Relationship Development (Including Technical Career lectures)	Helped arrange a series of brand image cultivation activities, including book discussion, career sharing, internship cooperation, and exhibits for semiconductor display. In 2022, 15 book discussion sessions were held, with a total of more than 791 participants.
	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 11 years, with more than 310 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.
	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, 5,483 students have been recruited and 485 prospects are still in school.

## About Social Charity (Continue)

### •Supporting Art and Cultural Activities

UMC supporting Art and Cultural Activities, for example empowerment Artistic and donate building art and culture center. Since 2011, UMC Science and Culture Foundation has been supporting the What's Young Association to organize the "Fancy Years - National Youth Drama Festival", which leads sustainable development to teenagers through drama education and artistic creation. This program guides high school students to learn what society is with dramas and helps them develop creativity, teamwork skills and empathy as well as encourages them to learn through different ways of thinking. Since 2021, collaborates with TECO Technology Foundation to sponsor Taitung County Changbin Junior High School "Changbin Amis Traditional Music and Dance Team" and Hualien County Gang-kou Primary School's "Magu-Daai Amis Ancient Ballad Team" by supporting these schools in learning and passing on traditional tribal songs and dances, and assisting tribal schools in inheriting indigenous traditional culture, through which the indigenous groups can trace back their roots and enhance their self-identity. UMC Science and Culture Foundation sponsored the "Drama Education Program for At-risk Teens" launched by Studio Q Performance Art Theatre and PUMUSIC, through which professional education in drama creation, dancing and performing arts are brought into corrective schools for teenagers to obtain more diverse life experiences and broader perspectives.

In order to push of "Go" culture, UMC sponsored the Taiwan Chess Academy in 2020 to hold the UMC Cup Professional Go Tournament. The holding of this tournament is a rare blessing for professional chess players, Go enthusiasts and fans. The playing environment of the Go world and the promotion of Go culture are of great benefit, allowing chess players to have more space and opportunities to play, promoting the Taiwanese chess world to improve, enhancing the thickness and strength of Taiwanese chess players, and providing more opportunities for entering the world chess world.

Based on the belief of "take from society and give back to society," UMC establishes the art and culture field. In early 2019, NTHU (National Tsing Hua University) announced a plan to convert the Main Auditorium into a world-class concert hall in honor of former president Shen Chun-Shan, who passed away in 2018. For this purpose, UMC donated NT\$70 million that UMC owes a debt of gratitude to NTHU, which for many years has been a primary source of outstanding personnel for Taiwan's semiconductor industry. Upon completion, Chun-Shan UMC Concert Hall will be a professional concert hall with a capacity of 1,200 spectators, which can be used for large-scale symphony orchestras and future performances by world-class orchestras and performers.

### •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, educational and academic units. Under the severe epidemic situation, UMC also donated medical supplies and protective equipment over NT\$7 million to hospitals and fire stations to establish the strongest epidemic prevention line for the frontline medical staff and the public.

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

## Environmental Protection, Safety and Health Management

In terms of environmental protection, safety and health, UMC has set the objective 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, safety and health management.

Achievement status of UMC's Important ESH Objectives/Targets in 2022:

Objective	Target	Achievement Status
Eliminating major accidents and continuously promoting "Safety First. No Compromise on Safety. Safety Is Above Production"	1. Zero serious occupational safety incidents	Zero occupational safety incidents throughout the year
	2. Fewer than 6 minor (or above) accidents	A total of 4 incidents throughout the year
Reducing the negative environmental impact of products and greenhouse gas (GHG) emissions	1. Water consumption per unit product: 12% reduction*	-22.81%
	2. Electricity consumption per unit product: 12% reduction*	-23.39%
	3. Waste generated per unit product: 22% reduction*	-30.6%
	4. Build a carbon management platform	Completed the development of carbon management platform

Note: \*With 2015 as the base year.



**Environmental Protection, Safety and Health Management (Continue)****Environmental Protection****GHG Reduction and Management**

Facing the issues of climate change and worsening global warming, UMC has already prepared and implemented responsive 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 (F-GHG). 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 F-GHG to be promoted include:

- Measuring the utilization rates of process tools using F-GHG 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 F-GHG in order to understand the GHG 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 F-GHG emissions control technologies, the selection, assessment, and investment have been applied for installation of high-performance F-GHG abatement systems in order to reduce the emission of F-GHG year by year.

In 2007 and 2011, UMC led the industry in completing the 2-Phase F-GHG 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 GHG emissions and its impact on global warming. After years of effort, UMC has achieved the objectives of the "Carbon Reduction 333" project, the "369+ Energy and Resources Productivity Enhancement Project" and the "Green 2020" project in 2012, 2015 and 2020, respectively. The Company has also formulated the "Green 2025" project to commit to goals of water and power saving, and waste reduction based on more stringent self-requirement standards and more active spontaneous actions. Furthermore, as UMC's GHG Offset Project has passed the Taiwan EPA review in 2020, we can build ten years of carbon assets according to our GHG reduction efforts in Taiwan fabs through this project. In 2021, UMC is ardently responding to the Paris Climate Agreement goal and announced its pledge to reach net zero emissions by 2050. In the meantime, UMC has obtained admission into RE100, becoming the second semiconductor wafer foundry in this initiative, and committed to use 100% renewable energy by 2050 by setting progressive goals of 25% by 2025 and 50% by 2030. In 2022, the Science Based Targets initiative (SBTi) has approved UMC's emissions reduction targets, making the Company the first semiconductor foundry globally to obtain SBTi validation of climate goals. With 2020 as the base year, UMC targets 25% reduction in direct GHG emissions (Scope 1) and indirect emissions from electricity consumption (Scope 2) by 2030. The Company also aims to lower emissions from its value chain (Scope 3)

by 12.3% in the same period.

UMC has constructed the UMC Climate Change Risk and Opportunity Assessment tool based on multiple data points: TCFD (Task Force on Climate-related Financial Disclosures), ISO 14090 Adaptation to Climate Change, and the assessment procedure in the UK Climate Impact Programme (UKCIP). The Climate Change Risk and Opportunity Assessment Team conducts assessments every year. The assessment is based on the aspects such as policies, regulations, transition of market and technology, reputation and physical risk. The assessment result and related countermeasures are submitted to the Corporate Sustainability Committee for approval. Since 2021, UMC met the TCFD performance assessment at management level of "Pioneer" for second consecutive year, which was verified by SGS Taiwan Ltd., endorsing that UMC's climate change risk assessment system and associated financial disclosure data are highly credible and transparent. For details of potential risks and opportunities of climate change, and related management and responding measures, please refer to the Company's Sustainability Report.

**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 GHG 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 GHG 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.

## Environmental Protection, Safety and Health Management (Continue)

### 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 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 equipments 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 management targets for important indicators such as GHG emissions, water consumption and waste generation. At the same time, UMC also disclosed the data of the last 4 years in the Sustainability Report and through third-party verification to confirm the latest information and verify the reduction outcome every year.

#### UMC GHG Emissions in Recent Two Years

Year		2021	2022
GHG Emission (tCO <sub>2</sub> e)	Scope 1	712,639	591,781
	Scope 2	1,298,439	1,373,914
GHG Emission Intensity (tCO <sub>2</sub> e/wafer-m <sup>2</sup> )	Scope 1&2	8.25	7.91

Note 1: The statistics covers UMC's fabs in Taiwan and Singapore, among which Fab 12A P6 was included in the calculation starting from 2022.

Note 2: The data on GHG emission is based on ISO 14064-1:2018 standards and verified by DNV GL Business Assurance Co. Ltd. Taiwan.

#### UMC Water Usage in Recent Two Years

Year	2021	2022
Total Water Usage (ton)	16,213,000	17,409,000
Water Intensity (t/wafer-m <sup>2</sup> )	66.54	70.07

Note: The statistics covers UMC's fabs in Taiwan and Singapore, among which Fab 12A P6 was included in the calculation starting from 2022.

#### UMC Outsourced Waste in Recent Two Years

Year	2021	2022
Hazardous Waste (ton)	25,091	25,146
General Waste (ton)	18,963	20,686
Waste Intensity (t/wafer-m <sup>2</sup> )	0.181	0.184

Note: The statistics covers UMC's fabs in Taiwan and Singapore, among which Fab 12A P6 was included in the calculation starting from 2022.

On the other hand, UMC was also invited to participate in the international CDP organization's climate change and water security disclosure project, and further disclosed the identification results of risks and opportunities and related management information. In 2022, UMC was recognized in CDP's highest "A List" for transparency and action on both climate change and water security, and the Company is the only semiconductor firm globally to achieve a double "A" score. It shows that UMC has been recognized by international investment institutions for its environmental 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

**Environmental Protection, Safety and Health Management (Continue)**

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. 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 the 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 every year, 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



## Environmental Protection, Safety and Health Management (Continue)

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 accident 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 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 tool box 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 training can be divided into three categories:

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

"Safety First. No Compromise on Safety. Safety Is Above Production" is UMC's commitment to employees, and to undertake planning and implementation of necessary safety and health education and training for work and prevention of disasters. According to the level from top to bottom, it is divided into company-wide general education courses, factory-run courses and department-specific courses, so that employees can develop a safety culture, awareness and ability of safety, and reduce accidents caused by unsafe behavior. Every year, in addition to the courses in the plan, for specific events or major cases, safety-related training courses is adopted. In 2022, UMC fabs in Taiwan and Singapore have offered 2,287 classes, attracting a total of 47,451 participants. The courses included e-learning courses so that employees can learn safety and health knowledge without being limited by the schedule of physical courses.

### • 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 treasures employees as 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.

**Environmental Protection, Safety and Health Management (Continue)**

**• 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 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 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 objective 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 objective and target 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 an automatic inspection system, ISO 14001 and 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 occupational 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 2022 are as shown below:

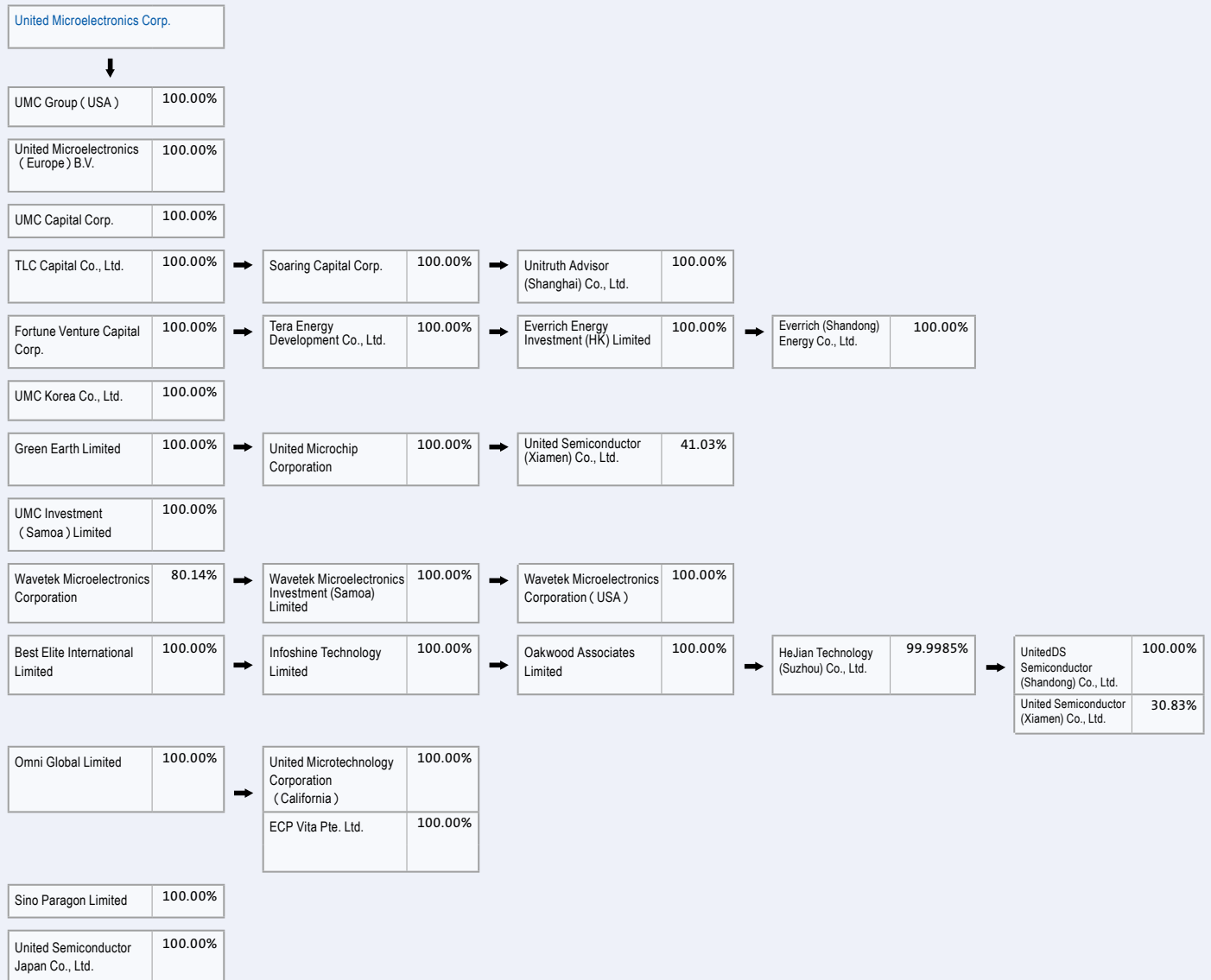
- "National Enterprise Environmental Protection Award" by the Environmental Protection Administration of Executive Yuan, R.O.C. (Fab 8A, Fab 8S)
- "The Best Participation of Green Procurement for Enterprises" by the Environmental Protection Administration of Executive Yuan, R.O.C.
- "Excellent Occupational Safety and Health Executive Organization" by the Hsinchu Science Park, National Science and Technology Council (Fab 8F)
- "Excellent Occupational Safety and Health Executive Organization" by the Southern Taiwan Science Park, National Science and Technology Council (Fab 12A)
- "Excellent Occupational Safety and Health Organization" by the Ministry of Labor (Fab 8E, Fab 12A)

## Special Disclosures

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# Summary of Affiliated Enterprises

## Affiliated Organization Chart



Note: UMC holds 79.50% of Wavetek Microelectronics Corporation (Wavetek); Fortune Venture Capital Corp. holds 0.64% of Wavetek, and the comprehensive shareholding ratio is 80.14%.

## Summary of Affiliated Enterprises (Continue)

## Basic Data of Affiliated Enterprises

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	NT\$489,771,750	IC Sales
United Microelectronics ( Europe ) B.V.	1989.05.23	De Entree77, 1101BH, Amsterdam Zuidoost, The Netherlands	NT\$115,468,715	Marketing support activities
UMC Capital Corp.	2001.01.16	One Nexus Way, Camana Bay, Grand Cayman KY1-9005, Cayman Islands	NT\$2,135,270,063	Investment holding
UMC Korea Co., Ltd.	2013.04.12	1117, Hanshin Intervals 24, 322, Teheran-ro, Gangnam-gu, Seoul, Korea	NT\$12,760,000	Marketing support activities
TLC Capital Co., Ltd.	2005.10.14	5F, No.17, Lane 120, Neihu Road Section 1, Taipei, Taiwan 114743, R.O.C.	NT\$4,339,423,400	Venture capital
Fortune Venture Capital Corp.	1993.09.21	5F, No.17, Lane 120, Neihu Road Section 1, Taipei, Taiwan 114743, R.O.C.	NT\$6,074,847,480	Consulting and planning for venture capital
Green Earth Limited	2009.09.09	Maystar Chambers, P.O. Box 3269, Apia, Samoa	NT\$29,988,444,000	Investment holding
UMC Investment ( Samoa ) Limited	2011.03.30	Maystar Chambers, P.O. Box 3269, Apia, Samoa	NT\$43,519,120	Investment holding
ECP Vita Pte. Ltd.	2012.05.10	8 Marina View, #09-05 Asia Square Tower one, Singapore 018960	NT\$268,164,000	Insurance
Soaring Capital Corp.	2008.03.25	Unit 25, 2nd Floor, Nia Mall, Saleufi Street, Apia Samoa	NT\$27,351,000	Investment holding
Unitruth Advisor (Shanghai) Co., Ltd.	2008.10.16	No.1468, Nanjing Road West, Suite 2908 Shanghai, China	NT\$23,836,800	Investment holding and advisory
Tera Energy Development Co., Ltd.	2011.07.19	1F., No.1, Jinshan 8th St., Hsinchu, Taiwan 300063, R.O.C.	NT\$78,000,000	Energy technical services
Everrich Energy Investment (HK) Limited	2009.12.16	Room 2702-03, CC Wu Building, 302-8 Hennessy Road, Wanchai, Hong Kong	NT\$25,988,211	Investment holding
Everrich (Shandong) Energy Co., Ltd.	2009.11.02	Office Building, Guangyutang National Pharmaceutical Industrial Park, No. 369, Haichuan Road, Jiezhuang Street, High-tech Zone, Jining City, Shandong Province, China	NT\$22,347,000	Solar engineering integrated design services

**Summary of Affiliated Enterprises (Continue)**

<b>Name of Corporation</b>	<b>Date of Establishment</b>	<b>Address</b>	<b>Capital</b>	<b>Major Business / Production Items</b>
Wavetek Microelectronics Corporation	2010.10.18	3F.,No. 10, Innovation 1st Road, Hsinchu Science Park, Hsinchu County, Taiwan, 300092 R.O.C.	NT\$1,863,087,350	Sales and manufacturing of integrated circuits
Wavetek Microelectronics Investment (Samoa) Limited	2013.08.28	Le Sanalele Complex, Ground Floor, Vaea Street, Saleufi, Apia, Samoa	NT\$50,833,500	Investment holding
Wavetek Microelectronics Corporation ( USA )	2013.09.26	488 De Guigne Drive, Sunnyvale, CA 94085, USA	NT\$1,787,760	Marketing service
Best Elite International Limited	2001.07.12	Commerce House, Wickhams Cay 1, P.O. Box 3140, Road Town, Tortola, B.V.I. VG1110	NT\$7,120,518,467	Investment holding
Infoshine Technology Limited	2002.02.12	Commerce House, Wickhams Cay 1, P.O. Box 3140, Road Town, Tortola, B.V.I. VG1110	NT\$10,547,784,000	Investment holding
Oakwood Associates Limited	2002.02.12	Commerce House, Wickhams Cay 1, P.O. Box 3140, Road Town, Tortola, B.V.I. VG1110	NT\$10,547,784,000	Investment holding
HeJian Technology (Suzhou) Co., Ltd.	2001.11.23	No. 333, Xinghua Street, Suzhou Industrial Park, Suzhou, Jiangsu Province, China	NT\$13,908,802,453	Sales and manufacturing of integrated circuits
UnitedDS Semiconductor (Shandong) Co., Ltd.	2014.03.25	21th Floor, Artificial Intelligence Building, Hanyu Finance Valley, Jingshi Road, Jinan, Shandong Province, China	NT\$132,663,000	Design support of integrated circuits
Omni Global Limited	2013.07.02	Maystar Chambers, P.O. Box 3269, Apia, Samoa	NT\$130,160,000	Investment holding
United Microtechnology Corporation ( California )	2014.12.10	488 De Guigne Drive, Sunnyvale, CA 94085, USA	NT\$29,796,000	Research & development
United Semiconductor (Xiamen) Co., Ltd.	2014.10.01	No. 899, Wan Jia Chun Road, Xiang An, Xiamen, Fujian Province, China	NT\$69,417,214,847	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	NT\$29,874,878,250	Investment holding
Sino Paragon Limited	2016.06.06	Maystar Chambers, P.O. Box 3269, Apia, Samoa	NT\$83,204,400	Investment holding
United Semiconductor Japan Co., Ltd.	2014.09.18	2000, Mizono, Tado-cho, Kuwana, Mie, Japan	NT\$2,276,000,000	Sales and manufacturing of integrated circuits

Note: The data is dated December 31, 2022.

**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 Korea Co., Ltd.	Director	Carissa Tseng	—	—
TLC Capital Co., Ltd.	Chairman	United Microelectronics Corporation	433,942,340	100.00
		Representative: Stan Hung	—	—
	Director	United Microelectronics Corporation	433,942,340	100.00
		Representative: SC Chien	—	—
	Director	United Microelectronics Corporation	433,942,340	100.00
		Representative: Jason Wang	—	—
	Director	United Microelectronics Corporation	433,942,340	100.00
		Representative: Chitung Liu	—	—
	Director	United Microelectronics Corporation	433,942,340	100.00
		Representative: Chih Chiang Peng	—	—
	Supervisor	United Microelectronics Corporation	433,942,340	100.00
		Representative: Jinhong Lin	—	—



## Summary of Affiliated Enterprises (Continue)

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
Fortune Venture Capital Corp.	Chairman	United Microelectronics Corporation	607,484,748	100.00
		Representative: Stan Hung	—	—
	Director	United Microelectronics Corporation	607,484,748	100.00
		Representative: SC Chien	—	—
	Director	United Microelectronics Corporation	607,484,748	100.00
		Representative: Jason Wang	—	—
	Director	United Microelectronics Corporation	607,484,748	100.00
		Representative: Chitung Liu	—	—
	Director and President	United Microelectronics Corporation	607,484,748	100.00
		Representative: Chih Chiang Peng	—	—
	Supervisor	United Microelectronics Corporation	607,484,748	100.00
		Representative: Bellona Chen	—	—
Green Earth Limited	Director	Chitung Liu	—	—
UMC Investment ( Samoa ) Limited	Director	United Microelectronics Corporation	1,520,000	100.00
ECP Vita Pte. Ltd.	Director	Chitung Liu	—	—
	Director	Bellona Chen	—	—
	Director	Vic Yen	—	—
	Director	Sofia Wang	—	—

**Summary of Affiliated Enterprises (Continue)**

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
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.	7,800,000	100.00
		Representative: Chih Chiang Peng	—	—
	Director	Fortune Venture Capital Corp.	7,800,000	100.00
		Representative: Su Ying Shih	—	—
	Director	Fortune Venture Capital Corp.	7,800,000	100.00
		Representative: Jinhong Lin	—	—
Everrich Energy Investment (HK) Limited	Supervisor	Fortune Venture Capital Corp.	7,800,000	100.00
		Representative: Tachih Lung	—	—
	Director	Tera Energy Development Co., Ltd.	750,000	100.00
Everrich (Shandong) Energy Co., Ltd.	Director	Jinhong Lin	—	—
	Executive Director	Chih Chiang Peng	—	—
	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	148,112,434	79.50
		Representative: M C Lai	—	—
	Director	United Microelectronics Corporation	148,112,434	79.50
		Representative: G C Hung	—	—
	Director	United Microelectronics Corporation	148,112,434	79.50
		Representative: Jinhong Lin	—	—
	Director	United Microelectronics Corporation	148,112,434	79.50
		Representative: James W Wang	—	—
	Director	United Microelectronics Corporation	148,112,434	79.50
		Representative: Hp Wu	—	—
	Supervisor	Hsun Chieh Investment Co., Ltd.	1,664,591	0.89
		Representative: Mark Hsu	—	—
Supervisor	Chih Chiang Peng	15,001	0.01	
Wavetek Microelectronics Investment (Samoa) Limited	Director	M C Lai	—	—
Wavetek Microelectronics Corporation (USA)	Director	Mao Jwo	—	—
Best Elite International Limited	Director	Victor Yu	—	—
	Director	Jeremy Wang	—	—
	Director	Eric Chen	—	—
	Director	Jinhong Lin	—	—
Infoshine Technology Limited	Director	Victor Yu	—	—
Oakwood Associates Limited	Director	Victor Yu	—	—

**Summary of Affiliated Enterprises (Continue)**

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
HeJian Technology (Suzhou) Co., Ltd.	Chairman	Chitung Liu	—	—
	Director and General Manager	M C Gao	—	—
	Director	M C Lai	—	—
	Director	Victor Yu	—	—
	Director	Jinhong Lin	—	—
	Supervisor	Angel Sun	—	—
	Supervisor	I Cheng Lu	—	—
	Supervisor	Yann Wei Chen	—	—
UnitedDS Semiconductor(Shandong) Co., Ltd.	Executive Director	Stan Hung	—	—
	Supervisor	Wesley Chu	—	—
Omni Global Limited	Director	Jinhong Lin	—	—
United Microtechnology Corporation (California)	Director	Jason Wang	—	—
	Director	Megan Su	—	—

## Summary of Affiliated Enterprises (Continue)

Name of Corporation	Title	Name or Representative	Shareholding	
			Shares	%
United Semiconductor (Xiamen) Co., Ltd.	Chairman	Chitung Liu	—	—
	Vice Chairman	C C Hsu	—	—
	Director	Jinhong Lin	—	—
	Director	Wayne Tan	—	—
	Director	T C Chen	—	—
	Director	Victor Yu	—	—
	Director	Yi Yan Hong	—	—
	Director	Jia Ling Fu	—	—
	Director	Liang Yi Xia	—	—
	Supervisor	Rong Fang Li	—	—
	Supervisor	Angel Sun	—	—
United Microchip Corporation	Director	Chitung Liu	—	—
Sino Paragon Limited	Director	Jinhong Lin	—	—
United Semiconductor Japan Co., Ltd.	Chairman	S F Tzou	—	—
	Director	Ming Hsu	—	—
	Director	Chitung Liu	—	—
	Director	Yen Huang	—	—
	Director	Michiari Kawano	—	—
	Director	Koichi Onomura	—	—
	Director	Tatsuya Deguchi	—	—
	Independent Director	Masanori Suzuki	—	—
Supervisor	Angel Sun	—	—	

Note: The data is dated December 31, 2022.

## Summary of Affiliated Enterprises (Continue)

## Summarized Operation Results of UMC Subsidiaries

In Thousand NT\$

Company	Capital	Assets	Liabilities	Net Worth	Operating Revenues	Operating Income (Loss)	Net Income (Loss)	Earnings (Loss) Per Share (NT\$)
UMC Group (USA)	489,772	13,871,122	11,870,714	2,000,408	76,496,013	95,564	100,308	6.10
United Microelectronics (Europe) B.V.	115,469	171,059	31,080	139,979	62,542	4,572	1,268	140.83
UMC Capital Corp.	2,135,270	5,061,941	420	5,061,521	(680,571)	(697,137)	(684,710)	(9.55)
UMC Korea Co., Ltd.	12,760	33,798	11,375	22,423	34,750	3,032	1,877	17.06
TLC Capital Co., Ltd.	4,339,423	5,125,473	169,074	4,956,399	693,527	336,678	290,738	0.68
Fortune Venture Capital Corp.	6,074,847	6,620,720	78,484	6,542,236	475,716	(662,917)	(701,144)	(1.27)
Green Earth Limited	29,988,444	12,563,053	-	12,563,053	-	-	1,061,810	1.09
UMC Investment (Samoa) Limited	43,519	42,895	-	42,895	-	-	4,030	2.65
ECP Vita Pte. Ltd.	268,164	770,649	98,680	671,969	67,012	51,565	51,397	5.71
Soaring Capital Corp.	27,351	9,719	-	9,719	0	2,408	2,423	2.69
Unitruth Advisor (Shanghai) Co., Ltd.	23,837	10,897	1,184	9,713	13,256	2,541	2,453	NA
Tera Energy Development Co., Ltd.	78,000	177,152	60,365	116,787	180,294	31,755	36,293	4.65
Everrich Energy Investment (HK) Limited	25,988	46,345	44	46,301	-	(46)	2,669	3.56
Everrich (Shandong) Energy Co., Ltd.	22,347	55,896	9,455	46,441	7,132	2,328	2,695	NA

## Summary of Affiliated Enterprises (Continue)

In Thousand NT\$

Company	Capital	Assets	Liabilities	Net Worth	Operating Revenues	Operating Income (Loss)	Net Income (Loss)	Earnings (Loss) Per Share (NT\$)
Wavetek Microelectronics Corporation	1,863,087	4,214,533	2,486,496	1,728,037	3,440,742	566,457	579,486	3.11
Wavetek Microelectronics Investment (Samoa) Limited	50,834	2,968	-	2,968	-	-	(13)	(0.01)
Wavetek Microelectronics Corporation (USA)	1,788	2,850	-	2,850	193	10	(17)	(0.28)
Best Elite International Limited	7,120,518	32,092,719	1,290	32,091,429	-	(5,334)	8,372,540	12.59
Infoshine Technology Limited	10,547,784	32,036,736	-	32,036,736	-	-	8,372,192	NA
Oakwood Associates Limited	10,547,784	32,036,736	-	32,036,736	-	-	8,372,192	NA
HeJian Technology (Suzhou) Co., Ltd.	13,908,802	36,448,259	4,902,539	31,545,720	17,468,913	7,849,378	8,290,178	2.64
UnitedDS Semiconductor (Shandong) Co., Ltd.	132,663	1,209,183	411,346	797,837	1,684,850	369,639	371,318	NA
Omni Global Limited	130,160	749,679	-	749,679	-	-	54,871	12.76
United Microtechnology Corporation (California)	29,796	41,191	1,569	39,622	31,039	1,757	1,733	43,326.58
United Semiconductor (Xiamen) Co., Ltd.	69,417,215	56,083,649	25,687,750	30,395,899	25,260,866	3,222,784	2,332,148	NA
United Microchip Corporation	29,874,878	12,535,675	-	12,535,675	-	-	1,059,106	1.09
Sino Paragon Limited	83,204	127,018	-	127,018	-	-	(11,202)	(4.31)
United Semiconductor Japan Co., Ltd.	2,276,000	33,340,743	8,710,770	24,629,973	23,699,984	9,513,236	7,159,811	61.59

Note: US\$:NT\$=1:29.796, JPY:NT\$=1:0.2276, EUR:NT\$=1:31.366, RMB:NT\$=1:4.4221, KRW:NT\$=1:0.0232

## Issuance of Private Placement Securities

None.

## Acquisition or Disposal of UMC Shares by Subsidiaries

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	In Thousand NT\$, Shares	
								As of Annual Report Printing Date	
								Shares	Amount
Fortune Venture Capital Corp.	6,074,847	New shares for cash	100.00	2023	None	None	None	None	None
				2022	None	None	None	None	None
				2021	None	Shares: 16,078,737 Amount: 920,443	815,329	None	None
	4,447,521								

Note: (1) Annual report printing date: February 22, 2023.

(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.

(5) The disposal of shares is due to the share exchange transaction with Chipbond approved by Fortune's Board of Directors' meeting on September 3, 2021.

## Other Necessary Supplements

None.

## Disclosure 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 2022 and as of the Annual Report Printing Date

None.



## Financial Review

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# Condensed Balance Sheets

## Condensed Balance Sheets-Consolidated

In Thousand NT\$

Item		2022	2021	2020	2019	2018
Current assets		252,371,038	233,273,433	164,305,911	153,757,141	141,193,432
Property, plant and equipment		170,982,066	129,941,703	132,774,663	150,374,096	172,846,595
Intangible assets		4,275,200	3,644,933	4,877,913	5,198,247	2,991,804
Other assets		105,423,788	97,566,702	75,557,888	60,857,881	47,573,075
Total assets		533,052,092	464,426,771	377,516,375	370,187,365	364,604,906
Current liabilities	Before distribution	108,565,165	105,453,729	78,243,526	72,714,322	49,899,337
	After distribution	*	142,900,099	98,119,368	82,479,477	56,815,442
Non-current liabilities		89,035,988	77,770,158	63,499,747	90,258,621	108,169,078
Total liabilities	Before distribution	197,601,153	183,223,887	141,743,273	162,972,943	158,068,415
	After distribution	*	220,670,257	161,619,115	172,738,098	164,984,520
Equity attributable to the parent company		335,107,260	280,979,703	235,659,746	206,804,357	206,069,723
Capital		125,047,490	124,832,476	124,224,015	117,575,798	124,243,187
Additional paid-in capital	Before distribution	12,377,833	47,898,093	43,211,214	39,550,394	40,399,363
	After distribution	*	10,451,723	43,211,214	39,550,394	40,399,363
Retained earnings	Before distribution	202,247,024	115,375,789	80,176,360	60,820,280	61,588,543
	After distribution	*	115,375,789	60,300,518	51,055,125	54,672,438
Other components of equity		(4,565,087)	(7,126,655)	(11,832,042)	(11,022,314)	(14,513,940)
Treasury stock		-	-	(119,801)	(119,801)	(5,647,430)
Non-controlling interests		343,679	223,181	113,356	410,065	466,768
Total equity	Before distribution	335,450,939	281,202,884	235,773,102	207,214,422	206,536,491
	After distribution	*	243,756,514	215,897,260	197,449,267	199,620,386

Note 1: \*Subject to change based on resolutions of the 2023 shareholders' meeting.

Note 2: The company listed on the TWSE or traded on the TPEX shall include in its disclosures the most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the publication date of the annual report: None.

## Condensed Balance Sheets-Parent Company

In Thousand NT\$

Item		2022	2021	2020	2019	2018
Current assets		180,046,419	173,934,887	122,967,977	107,866,299	101,335,770
Property, plant and equipment		127,926,250	76,105,085	66,640,272	79,486,445	101,115,727
Intangible assets		3,245,419	3,323,995	4,167,373	4,082,826	2,886,159
Other assets		178,348,910	150,987,914	125,122,444	111,315,394	93,849,564
Total assets		489,566,998	404,351,881	318,898,066	302,750,964	299,187,220
Current liabilities	Before distribution	86,600,204	68,328,684	29,622,014	43,764,772	26,797,263
	After distribution	*	105,775,054	49,497,856	53,529,927	33,713,368
Non-current liabilities		67,859,534	55,043,494	53,616,306	52,181,835	66,320,234
Total liabilities	Before distribution	154,459,738	123,372,178	83,238,320	95,946,607	93,117,497
	After distribution	*	160,818,548	103,114,162	105,711,762	100,033,602
Capital		125,047,490	124,832,476	124,224,015	117,575,798	124,243,187
Additional paid-in capital	Before distribution	12,377,833	47,898,093	43,211,214	39,550,394	40,399,363
	After distribution	*	10,451,723	43,211,214	39,550,394	40,399,363
Retained earnings	Before distribution	202,247,024	115,375,789	80,176,360	60,820,280	61,588,543
	After distribution	*	115,375,789	60,300,518	51,055,125	54,672,438
Other components of equity		(4,565,087)	(7,126,655)	(11,832,042)	(11,022,314)	(14,513,940)
Treasury stock		-	-	(119,801)	(119,801)	(5,647,430)
Total equity	Before distribution	335,107,260	280,979,703	235,659,746	206,804,357	206,069,723
	After distribution	*	243,533,333	215,783,904	197,039,202	199,153,618

Note 1: \* Subject to change based on resolutions of the 2023 shareholders' meeting.

Note 2: The company listed on the TWSE or traded on the TPEX shall include in its disclosures the most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the publication date of the annual report: None.

# Condensed Statements of Comprehensive Income

## Condensed Statements of Comprehensive Income-Consolidated

In Thousand NT\$

Item	2022	2021	2020	2019	2018
Operating revenues	278,705,264	213,011,018	176,820,914	148,201,641	151,252,571
Gross profit	125,764,377	72,049,629	38,997,101	21,314,972	22,840,027
Operating income	104,292,225	51,686,286	22,007,407	4,689,850	5,797,232
Non-operating income and expenses	1,805,012	10,117,118	5,918,772	1,045,787	(3,612,833)
Income from continuing operations before income tax	106,097,237	61,803,404	27,926,179	5,735,637	2,184,399
Net income	88,018,251	55,112,010	27,180,412	6,128,767	2,643,052
Other comprehensive income (loss), net of tax	2,437,539	4,131,555	4,685,534	3,408,785	949,944
Total comprehensive income (loss)	90,455,790	59,243,565	31,865,946	9,537,552	3,592,996
Net income attributable to shareholders of the parent	87,198,291	55,780,255	29,189,489	9,707,614	7,072,990
Net income attributable to non-controlling interests	819,960	(668,245)	(2,009,077)	(3,578,847)	(4,429,938)
Comprehensive income attributable to shareholders of the parent	89,635,822	59,911,829	33,748,370	13,131,612	8,126,828
Comprehensive income attributable to non-controlling interests	819,968	(668,264)	(1,882,424)	(3,594,060)	(4,533,832)
Earnings per share (NT\$)	7.09	4.57	2.42	0.82	0.58

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

Note 2: The company listed on the TWSE or traded on the TPEX shall include in its disclosures the most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the publication date of the annual report: None.

## Condensed Statements of Comprehensive Income-Parent Company

In Thousand NT\$

Item	2022	2021	2020	2019	2018
Operating revenues	210,083,555	159,222,834	135,280,403	123,622,436	132,834,602
Gross profit	102,567,440	62,195,577	39,052,266	27,161,230	30,548,191
Operating income	82,726,305	43,396,863	23,459,030	10,281,974	12,790,237
Non-operating income and expenses	18,294,167	17,284,085	6,375,642	(1,148,875)	(6,581,581)
Income from continuing operations before income tax	101,020,472	60,680,948	29,834,672	9,133,099	6,208,656
Net income	87,198,291	55,780,255	29,189,489	9,707,614	7,072,990
Other comprehensive income (loss), net of tax	2,437,531	4,131,574	4,558,881	3,423,998	1,053,838
Total comprehensive income	89,635,822	59,911,829	33,748,370	13,131,612	8,126,828
Earnings per share (NT\$)	7.09	4.57	2.42	0.82	0.58

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

Note 2: The company listed on the TWSE or traded on the TPEX shall include in its disclosures the most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the publication date of the annual report: None.

## Auditors' Opinions from 2018 to 2022

Year	CPA	Audit Opinion
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
2020	Wan-Ju Chiu, Hsin-Min Hsu	Unqualified Opinion with Emphasis of Matter Paragraphs or Other Matter Paragraphs
2021	Wan-Ju Chiu, Hsin-Min Hsu	Unqualified Opinion with Emphasis of Matter Paragraphs or Other Matter Paragraphs
2022	Wan-Ju Chiu, Hsin-Min Hsu	Unqualified Opinion with Emphasis of Matter Paragraphs or Other Matter Paragraphs

# Financial Analysis

## Financial Analysis- Consolidated

Item	2022	2021	2020	2019	2018	
Capital structure	Debt ratio (%)	37.07	39.45	37.55	44.02	43.35
	Long-term funds to property, plant and equipment (%)	219.51	247.06	196.23	169.65	158.30
Liquidity	Current ratio (%)	232.46	221.21	209.99	211.45	282.96
	Quick ratio (%)	200.58	196.55	177.36	172.13	222.80
	Times interest earned (times)	60.37	34.08	14.93	2.96	1.79
Operating performance	Average receivables turnover (times)	7.72	6.82	6.67	5.98	6.75
	Days sales outstanding	47	54	55	61	54
	Average inventory turnover (times)	5.66	6.19	6.23	6.36	7.04
	Average payables turnover (times)	17.63	17.37	16.47	16.19	19.26
	Average inventory turnover days	64	59	59	57	52
	Property, plant and equipment turnover (times)	1.85	1.62	1.25	0.92	0.80
	Total assets turnover (times)	0.56	0.51	0.47	0.40	0.40
	Profitability	Return on assets (%)	17.93	13.45	7.70	2.31
	Return on stockholders' equity attributable to the parent company (%)	28.31	21.59	13.19	4.70	3.37
	Pre-tax income to paid-in capital (%)	84.19	50.04	24.10	7.92	5.32
	Net profit margin (%)	31.58	25.87	15.37	4.14	1.75
	Earnings per share (NT\$)	7.09	4.57	2.42	0.82	0.58
Cash Flow	Cash flow ratio (%)	134.35	85.68	84.03	75.51	102.08
	Cash flow adequacy ratio (%)	139.90	145.64	111.10	96.56	86.78
	Cash flow reinvestment ratio (%)	8.32	5.93	5.12	4.54	4.03
Leverage	Operating leverage	2.17	3.22	5.98	23.16	19.11
	Financial leverage	1.02	1.04	1.10	2.67	1.91

Analysis of change over 20% from 2021 to 2022:

1. Times interest earned: Due to increase in income before interest and tax.
2. Return on assets, Net profit margin: Due to increase in net income.
3. Return on shareholders' equity attributable to the parent company, Earnings per share: Due to increase in net income attributable to shareholders of the parent company.
4. Pre-tax income to paid-in capital: Due to increase in income before tax attributable to shareholders of the parent company.
5. Cash flow ratio, Cash flow reinvestment ratio: Due to increase in net cash provided by operating activities and property, plant and equipment.
6. Operating leverage: Due to increase in operating income.

## Financial Analysis (Continue)

Note 1: The calculation of EPS was based on weighted average number of 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) / 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 sales / 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 property, plant and equipment

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

### 4. Profitability

(1) Return on assets = [net income + interest expenses x (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 shareholders of the parent – preferred shares dividends) / weighted average number of shares outstanding

### 5. Cash flow

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

(2) Cash flow adequacy ratio = five-year sum of 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 = (operating revenues – 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 most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the publication date of the annual report: None.

**Financial Analysis (Continue)**
**Financial Analysis- Parent Company**

Item	2022	2021	2020	2019	2018	
Capital structure	Debt ratio (%)	31.55	30.51	26.10	31.69	31.12
	Long-term funds to property, plant and equipment (%)	281.67	403.84	389.93	288.59	242.91
Liquidity	Current ratio (%)	207.91	254.56	415.12	246.47	378.16
	Quick ratio (%)	179.68	228.16	352.97	204.33	313.86
	Times interest earned (times)	157.16	111.73	54.08	12.16	9.14
Operating performance	Average receivables turnover (times)	7.83	6.88	6.80	5.95	6.02
	Days sales outstanding	47	53	54	61	61
	Average inventory turnover (times)	5.75	5.95	5.81	6.12	6.73
	Average payables turnover (times)	18.25	17.47	16.70	16.41	18.60
	Average inventory turnover days	63	61	63	60	54
	Property, plant and equipment turnover (times)	2.06	2.23	1.85	1.37	1.16
	Total assets turnover (times)	0.47	0.44	0.44	0.41	0.43
Profitability	Return on assets (%)	19.62	15.55	9.54	3.44	2.47
	Return on equity (%)	28.31	21.59	13.19	4.70	3.37
	Pre-tax income to paid-in capital (%)	80.79	48.61	24.02	7.77	5.00
	Net profit margin (%)	41.51	35.03	21.58	7.85	5.32
	Earnings per share (NT\$)	7.09	4.57	2.42	0.82	0.58
Cash Flow	Cash flow ratio (%)	124.99	97.95	176.05	106.12	182.12
	Cash flow adequacy ratio (%)	133.28	182.32	189.18	155.16	135.24
	Cash flow reinvestment ratio (%)	6.03	4.36	4.18	4.09	4.20
Leverage	Operating leverage	2.08	2.86	4.29	8.88	7.82
	Financial leverage	1.01	1.01	1.02	1.09	1.06

Analysis of change over 20% from 2021 to 2022:

1. Long-term funds to property, plant and equipment: Due to increase in property, plant and equipment.
2. Quick ratio: Due to increase in payables on equipment.
3. Times interest earned, Return on assets, Return on equity, Pre-tax income to paid-in capital, and Earnings per share: Due to increase in income before tax and net income.
4. Cash flow ratio, and Cash flow reinvestment ratio: Due to increase in net cash provided by operating activities.
5. Cash flow adequacy ratio: Due to increase in five-year sum of capital expenditures.
6. Operating leverage: Due to increase 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) / 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 sales / 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 property, plant and equipment

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

### 4. Profitability

(1) Return on assets = [net income + interest expenses x (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 = (operating revenues – variable operating costs and expenses) / operating income

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

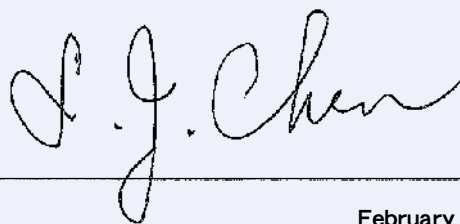
Note 3: The company listed on the TWSE or traded on the TPEx shall include in its analysis the most recent financial data which were audited or reviewed by a certified public accountant for the period closest to the publication date of the annual report: None.

## Audit Committee's Review Report

The Board of Directors has prepared and submitted to us the Company's 2022 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 2023 Annual General Shareholders' Meeting

Chairman of the Audit Committee: Lih J. Chen

A handwritten signature in black ink, reading "L. J. Chen", is positioned above a solid horizontal line.

February 22, 2023

**UNITED MICROELECTRONICS CORPORATION  
AND SUBSIDIARIES  
CONSOLIDATED FINANCIAL STATEMENTS  
WITH REPORT OF INDEPENDENT AUDITORS  
FOR THE YEARS ENDED  
DECEMBER 31, 2022 AND 2021**

**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, 2022 and 2021, and the related consolidated statements of comprehensive income, changes in equity and cash flows for the years ended December 31, 2022 and 2021, 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, 2022 and 2021, and their consolidated financial performance and cash flows for the years ended December 31, 2022 and 2021, 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 the Standards on Auditing of 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.

Address: No. 3 Li-Hsin 2nd Road, Hsinchu Science Park, Hsinchu, 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 2022 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, 2022, the Company's net inventories amounted to NT\$31,070 million. As the semiconductor industry is characterized by rapid changes in technology, management has 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 the judgmental nature of 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, evaluate the appropriateness of management's methodology to determine inventory aging and inventory reserve percentages, compare slow-moving inventories reserve to historical usage and write-off activities, and test the accuracy and completeness of the underlying data used in such determination. 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\$25,801 million and NT\$39,806 million, representing 4.84% and 8.57% of consolidated total assets as of December 31, 2022 and 2021, respectively. The related shares of profit or loss from the associates and joint ventures under the equity method amounted to NT\$(2,553) million and NT\$8,380 million, representing (2.41)% and 13.56% of the consolidated income before tax for the years ended December 31, 2022 and 2021, respectively, and the related shares of other comprehensive income from the associates and joint ventures under the equity method amounted to NT\$22 million and NT\$3,247 million, representing 0.02% and 5.48% of the consolidated total comprehensive income for the years ended December 31, 2022 and 2021, 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 the Standards on Auditing of the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

As part of an audit in accordance with the Standards on Auditing of 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 2022 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, 2022 and 2021.

/s/Chiu, Wan-Ju

/s/Hsu, Hsin-Min

Ernst & Young, Taiwan

February 22, 2023

## 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 Standards on Auditing of 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, 2022 and 2021  
 (Expressed in Thousands of New Taiwan Dollars)

	As of December 31,	
	2022	2021
<b>Current assets</b>		
Cash and cash equivalents	\$ 173,818,777	\$ 132,622,131
Financial assets at fair value through profit or loss, current	705,918	945,021
Financial assets at fair value through other comprehensive income, current	3,213,057	8,482,334
Financial assets measured at amortized cost, current	861,817	28,854,684
Contract assets, current	373,318	319,621
Accounts receivable, net	36,444,510	34,624,109
Accounts receivable-related parties, net	530,577	566,338
Other receivables	1,807,999	857,233
Current tax assets	40,256	2,597
Inventories, net	31,069,960	23,011,183
Prepayments	2,783,945	2,376,024
Other current assets	720,904	612,158
<b>Total current assets</b>	<b>252,371,038</b>	<b>233,273,433</b>
<b>Non-current assets</b>		
Financial assets at fair value through profit or loss, noncurrent	17,784,651	19,501,274
Financial assets at fair value through other comprehensive income, noncurrent	11,976,543	11,353,331
Financial assets measured at amortized cost, noncurrent	7,491	8,786
Investments accounted for under the equity method	35,086,289	41,692,084
Property, plant and equipment	170,982,066	129,941,703
Right-of-use assets	7,611,991	7,126,845
Intangible assets	4,275,200	3,644,933
Deferred tax assets	5,051,369	5,395,993
Prepayment for equipment	19,439,559	8,322,874
Refundable deposits	2,749,691	2,358,549
Other noncurrent assets-others	5,716,204	1,806,966
<b>Total non-current assets</b>	<b>280,681,054</b>	<b>231,153,338</b>
<b>Total assets</b>	<b>\$ 533,052,092</b>	<b>\$ 464,426,771</b>

(continued)

English Translation of Consolidated Financial Statements Originally Issued in Chinese  
**UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES**  
CONSOLIDATED BALANCE SHEETS  
December 31, 2022 and 2021  
(Expressed in Thousands of New Taiwan Dollars)

	As of December 31,	
	2022	2021
<b>Liabilities and Equity</b>		
<b>Current liabilities</b>		
Short-term loans	\$	1,924,124
Financial liabilities at fair value through profit or loss, current		2,380,599
Contract liabilities, current	438,397	3,441,754
Accounts payable	3,546,815	8,364,158
Other payables	8,982,418	21,417,215
Payables on equipment	31,279,208	7,875,927
Current tax liabilities	18,632,245	4,254,042
Lease liabilities, current	15,407,351	557,873
Other financial liabilities, current	537,314	12,718,616
Current portion of long-term liabilities	17,226,490	37,331,970
Other current liabilities	7,586,644	5,187,451
<b>Total current liabilities</b>	<b>108,565,165</b>	<b>105,453,729</b>
<b>Non-current liabilities</b>		
Contract liabilities, noncurrent	438,188	641,386
Bonds payable	23,083,096	23,077,699
Long-term loans	16,794,289	16,751,896
Deferred tax liabilities	3,372,512	1,763,159
Lease liabilities, noncurrent	5,199,781	4,510,881
Net defined benefit liabilities, noncurrent	2,869,402	3,877,321
Guarantee deposits	30,518,585	14,261,029
Other noncurrent liabilities-others	6,760,135	12,886,787
<b>Total non-current liabilities</b>	<b>89,035,988</b>	<b>77,770,158</b>
<b>Total liabilities</b>	<b>197,601,153</b>	<b>183,223,887</b>
<b>Equity attributable to the parent company</b>		
<b>Capital</b>		
Common stock	125,047,490	124,832,476
<b>Additional paid-in capital</b>		
Premiums	3,215,160	39,889,798
Treasury stock transactions	4,531,955	4,531,955
The differences between the fair value of the consideration paid or received from acquiring or disposing subsidiaries and the carrying amounts of the subsidiaries	466,457	466,457
Share of changes in net assets of associates and joint ventures accounted for using equity method		
Restricted stock for employees	196,359	87,889
Other	2,221,709	2,238,128
<b>Retained earnings</b>	1,746,193	683,866
Legal reserve		
Special reserve		
Unappropriated earnings	21,566,986	15,734,416
<b>Other components of equity</b>	4,914,214	8,164,648
Exchange differences on translation of foreign operations	175,765,824	91,476,725
Unrealized gains or losses on financial assets measured at fair value through other comprehensive income	(6,516,198)	(16,629,547)
Unearned employee compensation	3,782,141	11,715,333
<b>Treasury stock</b>	(1,831,030)	(2,212,441)
<b>Total equity attributable to the parent company</b>	<b>335,107,260</b>	<b>280,979,703</b>
<b>Non-controlling interests</b>	343,679	223,181
<b>Total equity</b>	<b>335,450,939</b>	<b>281,202,884</b>
<b>Total liabilities and equity</b>	<b>\$ 533,052,092</b>	<b>\$ 464,426,771</b>

**Financial Review**

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



UNITED MICROELECTRONICS CORPORATION AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

For the years ended December 31, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings per Share)

	Notes	For the years ended December 31,	
		2022	2021
<b>Operating revenues</b>	4, 6(21), 7	\$ 278,705,264	\$ 213,011,018
<b>Operating costs</b>	4, 6(6), 6(10), 6(15), 6(20), 6(21), 6(22), 7	(152,940,887)	(140,961,389)
<b>Gross profit</b>		125,764,377	72,049,629
<b>Operating expenses</b>	4, 6(5), 6(10), 6(15), 6(20), 6(22), 7		
Sales and marketing expenses		(4,182,929)	(4,671,599)
General and administrative expenses		(9,672,613)	(7,989,860)
Research and development expenses		(12,953,534)	(12,934,836)
Expected credit impairment gains (losses)		(2,723)	6,121
Subtotal		(26,811,799)	(25,590,174)
Net other operating income and expenses	4, 6(16), 6(23)	5,339,647	5,226,831
<b>Operating income</b>		104,292,225	51,686,286
<b>Non-operating income and expenses</b>			
Interest income	4	2,022,314	575,719
Other income	4	2,163,043	1,653,006
Other gains and losses	4, 6(24)	(1,185,093)	871,554
Finance costs	6(24)	(1,866,329)	(1,962,930)
Share of profit or loss of associates and joint ventures	4, 6(7)	(1,851,767)	8,495,043
Exchange gain, net	4	2,522,844	484,726
Subtotal		1,805,012	10,117,118
<b>Income from continuing operations before income tax</b>		106,097,237	61,803,404
<b>Income tax expense</b>	4, 6(26)	(18,078,986)	(6,691,394)
<b>Net income</b>		88,018,251	55,112,010
<b>Other comprehensive income (loss)</b>	6(25)		
<b>Items that will not be reclassified subsequently to profit or loss</b>			
Remeasurements of defined benefit pension plans	4, 6(15)	296,804	(197,477)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	4	(4,646,064)	5,811,342
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss		(2,983,802)	3,361,023
Income tax related to items that will not be reclassified subsequently	4, 6(26)	(342,756)	(104,643)
<b>Items that may be reclassified subsequently to profit or loss</b>			
Exchange differences on translation of foreign operations		9,292,308	(4,741,016)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss		91,676	(24,474)
Income tax related to items that may be reclassified subsequently	4, 6(26)	729,373	26,800
<b>Total other comprehensive income (loss)</b>		2,437,539	4,131,555
<b>Total comprehensive income (loss)</b>		\$ 90,455,790	\$ 59,243,565
<b>Net income (loss) attributable to:</b>			
Shareholders of the parent		\$ 87,198,291	\$ 55,780,255
Non-controlling interests		819,960	(668,245)
		\$ 88,018,251	\$ 55,112,010
<b>Comprehensive income (loss) attributable to:</b>			
Shareholders of the parent		\$ 89,635,822	\$ 59,911,829
Non-controlling interests		819,968	(668,264)
		\$ 90,455,790	\$ 59,243,565
<b>Earnings per share (NTD)</b>	4, 6(27)		
Earnings per share-basic		\$ 7.09	\$ 4.57
Earnings per share-diluted		\$ 6.87	\$ 4.48

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, 2022, and 2021  
(Expressed in Thousands of New Taiwan Dollars)

	Notes	Equity Attributable to the Parent Company										Total Equity	
		Common Stock	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	Unearned Employee Compensation	Treasury Stock	Total		Non-Controlling Interests
Balance as of January 1, 2021	6(19)	\$ 124,224,015	\$ 43,211,214	\$ 12,536,526	\$ 11,022,314	\$ 56,617,520	\$ (11,890,876)	\$ 3,726,229	\$ (3,667,395)	\$ (119,801)	\$ 235,659,746	\$ 113,356	\$ 235,773,102
Appropriation and distribution of 2020 retained earnings	6(19)	-	-	3,197,890	-	(3,197,890)	-	-	-	-	-	-	-
Cash dividends		-	-	-	-	(19,875,842)	-	-	-	-	(19,875,842)	-	(19,875,842)
Special reserve reversed		-	-	-	(2,857,666)	2,857,666	-	-	-	-	-	-	-
Net income (loss) for the year ended December 31, 2021	6(19)	-	-	-	-	55,780,255	-	-	-	-	55,780,255	(668,245)	55,112,010
Other comprehensive income (loss) for the year ended December 31, 2021	6(19), 6(25)	-	-	-	-	(148,768)	(4,738,671)	9,019,013	-	-	4,131,574	(19)	4,131,555
Total comprehensive income (loss)		-	-	-	-	55,631,487	(4,738,671)	9,019,013	-	-	59,911,829	(668,264)	59,243,565
Share-based payment transaction		(2,617)	293,374	-	-	-	-	-	1,454,954	-	1,745,711	-	1,745,711
Share of changes in net assets of associates and joint ventures accounted for using equity method	4, 6(20)	-	(5,991)	-	-	1,029,909	-	(1,029,909)	-	-	(5,991)	-	(5,991)
Changes in subsidiaries' ownership	4, 6(19)	-	-	-	-	(1,009,440)	-	-	-	-	(1,009,440)	(11,126)	(1,020,566)
Adjustments for dividends subsidiaries received from parent company		-	25,724	-	-	-	-	-	-	-	25,724	-	25,724
Non-Controlling Interests	6(19)	-	-	-	-	-	-	-	-	-	-	23,430	23,430
Share exchange	6(19)	611,078	3,930,986	-	-	-	-	-	-	119,801	4,661,865	-	4,661,865
Others	6(19)	-	442,786	-	-	(576,685)	-	-	-	-	(133,899)	765,785	631,886
Balance as of December 31, 2021	6(19)	124,832,476	47,898,093	15,734,416	8,164,648	91,476,725	(16,629,547)	11,715,333	(2,212,441)	-	280,979,703	223,181	281,202,884
Impact of retroactive applications	3, 6(19)	-	-	-	-	(153,843)	-	-	-	-	(153,843)	(66,089)	(219,932)
Adjusted balance as of January 1, 2022	6(19)	124,832,476	47,898,093	15,734,416	8,164,648	91,322,882	(16,629,547)	11,715,333	(2,212,441)	-	280,825,860	157,092	280,982,952
Appropriation and distribution of 2021 retained earnings	6(19)	-	-	5,832,570	-	(5,832,570)	-	-	-	-	-	-	-
Legal reserve		-	-	-	-	-	-	-	-	-	-	-	-
Special reserve reversed		-	-	-	(3,250,434)	3,250,434	-	-	-	-	-	-	-
Cash distributed from additional paid-in capital	6(19)	-	(37,446,370)	-	-	-	-	-	-	-	(37,446,370)	-	(37,446,370)
Net income for the year ended December 31, 2022	6(19)	-	-	-	-	87,198,291	-	-	-	-	87,198,291	819,960	88,018,251
Other comprehensive income (loss) for the year ended December 31, 2022	6(19), 6(25)	-	-	-	-	(258,171)	10,113,349	(7,933,989)	-	-	2,437,531	8	2,437,539
Total comprehensive income (loss)		-	-	-	-	87,456,462	10,113,349	(7,933,989)	-	-	89,635,822	819,968	90,455,790
Share-based payment transaction		215,014	755,313	-	-	(1,490)	-	-	381,411	-	1,350,248	1,490	1,351,738
Share of changes in net assets of associates and joint ventures accounted for using equity method	4, 6(20)	-	108,470	-	-	(797)	-	797	-	-	108,470	-	108,470
Changes in subsidiaries' ownership	4, 6(19)	-	-	-	-	(429,097)	-	-	-	-	(429,097)	(1,339)	(430,436)
Non-Controlling Interests	6(19)	-	-	-	-	-	-	-	-	-	-	5,456	5,456
Others	6(19)	-	1,062,327	-	-	-	-	-	-	-	1,062,327	(638,988)	423,339
Balance as of December 31, 2022	6(19)	\$ 125,047,490	\$ 12,377,833	\$ 21,566,986	\$ 4,914,214	\$ 175,765,824	\$ (6,516,198)	\$ 3,782,141	\$ (1,831,030)	\$ -	\$ 335,107,260	\$ 343,679	\$ 335,450,939

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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2022	2021
Cash flows from operating activities:		
Net income before tax	\$ 106,097,237	\$ 61,803,404
Adjustments to reconcile net income before tax to net cash provided by operating activities:		
Depreciation	41,328,374	44,179,632
Amortization	2,841,334	2,894,942
Expected credit impairment losses (gains)	2,723	(6,121)
Net loss (gain) of financial assets and liabilities at fair value through profit or loss	1,247,962	(2,892,470)
Interest expense	1,785,311	1,868,089
Interest income	(2,022,314)	(575,719)
Dividend income	(2,163,043)	(1,653,006)
Share-based payment	1,351,738	1,745,745
Share of loss (profit) of associates and joint ventures	1,851,767	(8,495,043)
Gain on disposal of property, plant and equipment	(482,983)	(143,735)
Loss on disposal of investments	-	10,964
Loss on repurchases of bonds	203,851	-
Exchange loss (gain) on financial assets and liabilities	2,436,159	(505,434)
Loss (gain) on lease modification	(1,162)	6
Amortization of deferred government grants	(4,163,746)	(4,069,055)
Others	-	243,447
Income and expense adjustments	44,215,971	32,602,242
Changes in operating assets and liabilities:		
Financial assets and liabilities at fair value through profit or loss	14,825	119,904
Contract assets	(47,842)	(81,887)
Accounts receivable	(1,115,482)	(8,590,622)
Other receivables	(914,736)	134,111
Inventories	(7,637,528)	(871,589)
Prepayments	(4,041,038)	(299,418)
Other current assets	-	71,566
Contract fulfillment costs	(97,027)	(71,828)
Contract liabilities	(252,594)	1,637,105
Accounts payable	490,949	688,652
Other payables	9,230,484	4,092,040
Other current liabilities	791,279	(506,837)
Net defined benefit liabilities	(711,115)	(482,809)
Other noncurrent liabilities-others	(8,039)	71,430
Cash generated from operations	146,015,344	90,315,464
Interest received	1,852,783	505,379
Dividend received	4,132,529	3,006,829
Interest paid	(1,422,337)	(1,539,069)
Income tax paid	(4,717,790)	(1,936,712)
Net cash provided by operating activities	145,860,529	90,351,891

(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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2022	2021
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	\$ (1,041,792)	\$ (921,916)
Proceeds from disposal of financial assets at fair value through profit or loss	773,318	439,145
Acquisition of financial assets measured at amortized cost	(1,682,788)	(37,141,310)
Proceeds from redemption of financial assets measured at amortized cost	30,179,933	22,132,639
Increase in prepayment for investments	-	(5,025)
Proceeds from capital reduction and liquidation of investments	-	42,150
Disposal of subsidiary	-	714,358
Acquisition of property, plant and equipment	(80,127,628)	(48,034,633)
Proceeds from disposal of property, plant and equipment	669,282	216,314
Increase in refundable deposits	(558,491)	(274,015)
Decrease in refundable deposits	186,175	220,750
Acquisition of intangible assets	(2,756,155)	(1,924,924)
Government grants related to assets acquisition	173,909	2,498,984
Increase in other noncurrent assets-others	(243,084)	(125,917)
Decrease in other noncurrent assets-others	55	-
Net cash used in investing activities	(54,427,266)	(62,163,400)
Cash flows from financing activities:		
Increase in short-term loans	228,980	7,205,015
Decrease in short-term loans	(2,194,664)	(16,179,231)
Proceeds from bonds issued	-	25,760,800
Bonds issuance costs	-	(57,108)
Redemption of bonds	(13,305,050)	(2,000,000)
Proceeds from long-term loans	2,319,371	15,560,661
Repayments of long-term loans	(21,135,630)	(11,472,124)
Increase in guarantee deposits	15,823,396	14,812,963
Decrease in guarantee deposits	(838,455)	(593,555)
Cash payments for the principal portion of the lease liability	(712,854)	(699,680)
Cash dividends and cash distributed from additional paid-in capital	(37,445,300)	(19,871,129)
Change in non-controlling interests	5,456	23,430
Others	-	65
Net cash provided by (used in) financing activities	(57,254,750)	12,490,107
Effect of exchange rate changes on cash and cash equivalents	7,018,133	(2,104,503)
Net increase in cash and cash equivalents	41,196,646	38,574,095
Cash and cash equivalents at beginning of year	132,622,131	94,048,036
Cash and cash equivalents at end of year	\$ 173,818,777	\$ 132,622,131

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, 2022 and 2021

(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 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 2nd Road, Hsinchu Science Park, Hsinchu, Taiwan. The principal operating activities of UMC and its subsidiaries (collectively as "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 22, 2023.

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, 2022. Except for the standards and interpretations disclosed below, there are no newly adopted or revised ones that have a material impact on the Company's financial position and performance.

- a. Onerous Contracts - Cost of Fulfilling a Contract (Amendments to IAS 37)  
 The amendments clarify what costs a company should include as the cost of fulfilling a contract when assessing whether a contract is onerous, which specifying that the cost of fulfilling a contract comprises the costs that relate directly to the contract. The amendments are effective for contracts for which the Company has not yet fulfilled all its obligations on or after January 1, 2022 (the date of initial application). In accordance with the transitional provisions of IAS 37, the Company did not restate the comparative information and recognized the cumulative effect of initially applying the amendments, which resulted in an increase in other current liabilities of NT\$220 million, a decrease in retained earnings of NT\$154 million and a decrease in non-controlling interest of NT\$66 million, respectively, as of January 1, 2022.

(2) Standards issued by International Accounting Standards Board ("IASB") which are endorsed by FSC, but not yet adopted by the Company are listed below:

New, Revised or Amended Standards and Interpretations	Effective Date issued by IASB
Amendments to IAS 1 "Presentation of Financial Statements" - Disclosure Initiative - Accounting Policies	January 1, 2023
Amendments to IAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors" - Definition of Accounting Estimates	January 1, 2023
Amendment to IAS 12 "Income Taxes" - Deferred Tax related to Assets and Liabilities arising from a Single Transaction	January 1, 2023

a. IAS 1 "Presentation of Financial Statements" ("IAS 1") - Disclosure Initiative - Accounting Policies (Amendment)

The amendments improve accounting policy disclosures that to provide more useful information to investors and other primary users of the financial statements.

b. IAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors" ("IAS 8") - Definition of Accounting Estimates (Amendment)

The amendments introduce the definition of accounting estimates and included other amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors to help companies distinguish changes in accounting estimates from changes in accounting policies.

c. IAS 12 "Income Taxes" ("IAS 12") - Deferred Tax related to Assets and Liabilities arising from a Single Transaction (Amendment)

The amendments narrow the scope of the recognition exemption in paragraphs 15 and 24 of IAS 12 so that it no longer applies to transactions that, on initial recognition, give rise to equal taxable and deductible temporary differences.

The abovementioned standards and interpretations were issued by IASB and endorsed by FSC so that they are applicable for annual periods beginning on or after January 1, 2023. The standards and interpretations listed (a) - (c) have no material impact on the Company's financial position and performance.

(3) Standards issued by IASB but not yet endorsed by FSC (the effective dates are to be determined by FSC) are listed below:

New, Revised or Amended Standards and Interpretations	Effective Date issued by IASB
IFRS 10 “Consolidated Financial Statements” and IAS 28 “Investments in Associates and Joint Ventures” - Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures	To be determined by IASB
IFRS 17 “Insurance Contracts”	January 1, 2023
Amendments to IAS 1 “Presentation of Financial Statements” - Classification of Liabilities as Current or Non-current	January 1, 2024
Amendments to IFRS 16 “Leases” - Lease Liability in a Sale and Leaseback	January 1, 2024
Amendments to IAS 1 “Presentation of Financial Statements” - Non-current Liabilities with Covenants	January 1, 2024

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:

a. 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 “Business Combinations” (“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.

b. IFRS 17 “Insurance Contracts” (“IFRS 17”)

IFRS 17 provides a comprehensive model for insurance contracts, covering all relevant accounting aspects (including recognition, measurement, presentation and disclosure requirements). The core of IFRS 17 is the General (building block) Model, under this model, on initial recognition, an entity shall measure a group of insurance contracts at the total of the fulfilment cash flows and the contractual service margin. The carrying amount of a group of insurance contracts at the end of each reporting period shall be the sum of the liability for remaining coverage and the liability for incurred claims.

Other than the General Model, the standard also provides a specific adaptation for contracts with direct participation features (the Variable Fee Approach) and a simplified approach (Premium Allocation Approach) mainly for short-duration contracts.

IFRS 17 was issued in May 2017 and it was amended in 2020 and 2021. The amendments include deferral of the date of initial application of IFRS 17 by two years to annual beginning on or after 1 January 2023 (from the original effective date of 1 January 2021); provide additional transition reliefs; simplify some requirements to reduce the costs of applying IFRS 17 and revise some requirements to make the results easier to explain. IFRS 17 replaces an interim Standard - IFRS 4 Insurance Contracts - from annual reporting periods beginning on or after 1 January 2023.

c. IAS 1 “Presentation of Financial Statements” (“IAS 1”) - Classification of Liabilities as Current or Non-current (Amendment)

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.

d. IFRS 16 “Leases” (“IFRS 16”) - Lease Liability in a Sale and Leaseback (Amendment)  
 The amendments add seller-lessee additional requirements for the sale and leaseback transactions in IFRS 16, thereby supporting the consistent application of the standard.

e. IAS 1 “Presentation of Financial Statements” (“IAS 1”) - Non-current Liabilities with Covenants (Amendment)

The amendments improved the information companies provide about long-term debt with covenants. The amendments specify that covenants to be complied within twelve months after the reporting period do not affect the classification of debt as current or non-current at the end of the reporting period.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (a) - (e) 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 shareholders 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, 2022 and 2021

Investor	Subsidiary	Business nature	Percentage of ownership (%)	
			2022	2021
UMC	UMC GROUP (USA)	IC Sales	100.00	100.00
UMC	UNITED MICROELECTRONICS (EUROPE) B.V.	Marketing support activities	100.00	100.00
UMC	UMC CAPITAL CORP.	Investment holding	100.00	100.00
UMC	GREEN EARTH LIMITED (GE)	Investment holding	100.00	100.00
UMC	TLC CAPITAL CO., LTD. (TLC)	Venture capital	100.00	100.00
UMC	UMC INVESTMENT (SAMOA) LIMITED	Investment holding	100.00	100.00
UMC	FORTUNE VENTURE CAPITAL CORP. (FORTUNE)	Consulting and planning for venture capital	100.00	100.00
UMC	UMC KOREA CO., LTD.	Marketing support activities	100.00	100.00
UMC	OMNI GLOBAL LIMITED (OMNI)	Investment holding	100.00	100.00
UMC	SINO PARAGON LIMITED	Investment holding	100.00	100.00
UMC	BEST ELITE INTERNATIONAL LIMITED (BE)	Investment holding	100.00	100.00
UMC	UNITED SEMICONDUCTOR JAPAN CO., LTD.	Sales and manufacturing of integrated circuits	100.00	100.00
UMC and FORTUNE	WAVETEK MICROELECTRONICS CORPORATION (WAVETEK)	Sales and manufacturing of integrated circuits	80.14	80.37
TLC	SOARING CAPITAL CORP.	Investment holding	100.00	100.00
SOARING CAPITAL CORP.	UNITRUTH ADVISOR (SHANGHAI) CO., LTD.	Investment holding and advisory	100.00	100.00
GE	UNITED MICROCHIP CORPORATION	Investment holding	100.00	100.00
FORTUNE	TERA ENERGY DEVELOPMENT CO., LTD. (TERA ENERGY)	Energy technical services	100.00	100.00
TERA ENERGY	EVERRICH ENERGY INVESTMENT (HK) LIMITED (EVERRICH-HK)	Investment holding	100.00	100.00



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.

Investor	Subsidiary	Business nature	Percentage of ownership (%)	
			As of December 31, 2022	2021
EVERRICH-HK	EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	100.00	100.00
OMNI	UNITED MICROTECHNOLOGY CORPORATION (CALIFORNIA)	Research and development	100.00	100.00
OMNI	ECP VITA PTE. LTD.	Insurance	100.00	100.00
WAVETEK	WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED (WAVETEK-SAMOA)	Investment holding	100.00	100.00
WAVETEK-SAMOA	WAVETEK MICROELECTRONICS CORPORATION (USA)	Marketing service	100.00	100.00
BE	INFOSHINE TECHNOLOGY LIMITED (INFOSHINE)	Investment holding	100.00	100.00
INFOSHINE	OAKWOOD ASSOCIATES LIMITED (OAKWOOD)	Investment holding	100.00	100.00
OAKWOOD	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD. (HEJIAN)	Sales and manufacturing of integrated circuits	99.9985	99.9985
HEJIAN	UNITEDBDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Integrated circuits	100.00	100.00
UNITED MICROCHIP CORPORATION and HEJIAN	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. (USCXM)	design services Sales and manufacturing of integrated circuits	71.86	69.95

#### (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.

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).

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) 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.

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.

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 resulting in decrease in 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 or other appropriate account(s). 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.

(12) Property, Plant and Equipment

Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any. The cost of an item of property, plant and equipment comprises the acquisition cost, the costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management, and the initial estimate of costs for dismantling, removing the item and restoring the site on which it is located. 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.

(11) 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.

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 depreciation of the assets is calculated mainly over the following estimated useful lives: buildings - 20 to 56 years; machinery and equipment - 6 years; transportation equipment - 6 years; furniture and fixtures - 6 years; leasehold improvement - the shorter of lease terms or useful lives.

(13) Lease

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 of:
  - 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.

(14) 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.



**(15) 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.

**(16) 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.

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.

(17) 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.

(18) 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.

(19) Decommissioning Liabilities

The amount of the decommissioning liability, arising from dismantling, removing the items of property, plant and equipment and restoring the site on which they are located, are provided at the present value of expected costs to settle the obligation using estimated cash flows, while the decommissioning costs are recognized as part of the cost of the particular items. The discount rate shall be a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the decommissioning liability. The periodic unwinding of the discount shall be recognized in profit or loss as a finance cost as it occurs. The estimated future costs of decommissioning are reviewed at the end of each reporting period and adjusted as appropriate. Changes in the estimated future costs or in the discount rate applied are added to or deducted from the cost of the items of property, plant and equipment.

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.

Exchangeable bonds

In accordance with IFRS 9, if the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host, the derivative financial instruments embedded in exchangeable bonds would be separated from the host and accounted for as financial assets or liabilities at fair value through profit or loss.

UMC has issued exchangeable bonds where the bondholders may exchange the bonds into ordinary shares of certain public entities which UMC holds as financial assets ("reference shares"). When exchangeable bondholders exercise their right to exchange their bonds for reference shares, the carrying amount of the bonds and the related assets or liabilities accounts will be derecognized, and the difference will be recognized in profit or loss.

Both the host and embedded derivative financial instrument in exchangeable bonds are classified as current liabilities as the bondholders have the right to demand settlement by exercising the exchange option of the bonds within 12 months.

## (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

### Equity-settled share-based payment transactions

The compensation cost of equity-settled transactions between the Company and its employees is measured at the fair value of the equity instruments on the grant date, and is recognized as expense, together with a corresponding increase in equity, over the vesting period. When issuing restricted stocks for employees, the unvested restricted stocks issued on the grant date for employees are recognized in unearned employee compensation as a transitional contra equity account and such account shall be amortized as compensation expense over the vesting period. The cumulative expense recognized for equity-settled transactions at each reporting date until the vesting 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 movement in cumulative cost recognized at the beginning and end of the period is recognized through profit or loss for the period.

No expense is recognized for awards that do not ultimately vest, except for equity-settled transactions where vesting is conditional upon a market or non-vesting condition. The Company shall recognize the services received in expense irrespective of whether or not 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.

## Cash-settled share-based payment transactions

The compensation cost of cash-settled share-based payment transactions between the Company and its employees is measured at the fair value of the liability incurred and recognized as expense with corresponding liability over the vesting period. The fair value of the liability is remeasured at the end of each reporting period and at the settlement date with the movement in fair value recognized through profit or loss for the period until the liability is settled.

## (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.

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 shareholders 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 shareholders' 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.



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. Given the global economic climate and unforeseen effects from COVID-19 pandemic, the process of estimation has become more challenging. Actual results could differ from those estimates, and as such, differences may be material to the consolidated financial statements.

(1) The Fair Value of Level 3 Financial Instruments

Where the fair values of the level 3 financial assets recorded on the balance sheet cannot be derived from active markets, they are determined by the application of an appropriate valuation method which was mainly the market approach. The valuation of these financial assets involves significant judgments such as the selection of comparable companies or equity transaction prices and the application of assumptions such as discounts for lack of marketability, 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(6). 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.

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.

(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 shares outstanding is adjusted retroactively for stock dividends and employee stock compensation issues.

## 6. CONTENTS OF SIGNIFICANT ACCOUNTS

(1) Cash and Cash Equivalents

	As of December 31,	
	2022	2021
Cash on hand and petty cash	\$6,023	\$5,684
Checking and savings accounts	42,422,443	33,738,883
Time deposits	125,467,386	88,876,572
Repurchase agreements collateralized by government bonds and corporate notes	5,922,925	10,000,992
Total	<u>\$173,818,777</u>	<u>\$132,622,131</u>

(2) Financial Assets at Fair Value through Profit or Loss

	As of December 31,	
	2022	2021
Financial assets mandatorily measured at fair value through profit or loss		
Common stocks	\$10,275,563	\$13,289,438
Preferred stocks	2,939,939	2,602,622
Funds	5,044,702	3,862,932
Convertible bonds	230,365	691,303
Total	<u>\$18,490,569</u>	<u>\$20,446,295</u>
Current	\$705,918	\$945,021
Non-current	17,784,651	19,501,274
Total	<u>\$18,490,569</u>	<u>\$20,446,295</u>

UMC's subsidiary, FORTUNE VENTURE CAPITAL CORP., exchanged shares with CHIPBOND TECHNOLOGY CORPORATION (CHIPBOND) on November 5, 2021, and obtained 14 million common shares newly issued by CHIPBOND. Please refer to Note 6(19) for further information.

(3) Financial Assets at Fair Value through Other Comprehensive Income

	As of December 31,	
	2022	2021
Equity instruments		
Common stocks	\$15,007,053	\$19,683,806
Preferred stocks	182,547	151,859
Total	<u>\$15,189,600</u>	<u>\$19,835,665</u>
Current	\$3,213,057	\$8,482,334
Non-current	11,976,543	11,353,331
Total	<u>\$15,189,600</u>	<u>\$19,835,665</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. UMC exchanged shares with CHIPBOND on November 5, 2021, and obtained 53 million common shares newly issued by CHIPBOND for the strategic cooperation between the Company and CHIPBOND. Please refer to Note 6(19) for further information.

b. Dividend income recognized in profit or loss from equity instruments designated as fair value through other comprehensive income were listed below:

	For the years ended December 31,	
	2022	2021
Held at end of period	\$1,431,931	\$465,679
Derecognized during the period	-	-
Total	<u>\$1,431,931</u>	<u>\$465,679</u>

c. UMC issued unsecured exchangeable bonds where the bondholders may exchange the bonds at any time on or after October 8, 2021 and prior to June 27, 2026 into NOVATEK common shares which UMC holds and accounts for as equity instruments investments measured at fair value through other comprehensive income. Please refer to Note 6(13) for the Company's unsecured exchangeable bonds.

(4) Financial assets measured at amortized cost

	As of December 31,	
	2022	2021
Financial assets measured at amortized cost		
Time deposits with original maturities over three months	\$849,308	\$28,843,470
Bonds	20,000	20,000
Total	<u>\$869,308</u>	<u>\$28,863,470</u>

(5) Accounts Receivable, Net

	As of December 31,	
	2022	2021
Accounts receivable	\$36,653,611	\$34,818,600
Less: loss allowance	(209,101)	(194,491)
Net	<u>\$36,444,510</u>	<u>\$34,624,109</u>

Aging analysis of accounts receivable:

	As of December 31,	
	2022	2021
Neither past due	\$30,545,437	\$30,758,397
Past due:		
≤ 30 days	5,303,765	3,294,617
31 to 60 days	130,408	138,854
61 to 90 days	3,247	8,026
91 to 120 days	7,886	43,413
≥ 121 days	662,868	575,293
Subtotal	6,108,174	4,060,203
Total	\$36,653,611	\$34,818,600

Movement of loss allowance for accounts receivable:

	For the years ended December 31,	
	2022	2021
Beginning balance	\$194,491	\$206,084
Net recognition (reversal) for the period	14,610	(11,593)
Ending balance	\$209,101	\$194,491

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 the receivables past due within 60 days, including not past due, the Company estimates an expected credit loss rate to calculate ECLs. For the years ended December 31, 2022 and 2021, the expected credit loss rates were not greater than 0.2%. The rate is determined based on the Company's historical credit loss experience and customer's current financial condition, adjusted for forward-looking factors such as customer's economic environment. For the receivables past due over 60 days, the Company applies the aforementioned rate and assesses individually whether to recognize additional expected credit losses by considering customer's operating condition and debt-paying ability.

(6) Inventories, Net

	As of December 31,	
	2022	2021
Raw materials	\$6,335,428	\$3,371,520
Supplies and spare parts	7,161,216	5,106,770
Work in process	14,897,926	14,043,143
Finished goods	2,675,390	489,750
Total	\$31,069,960	\$23,011,183

a. For the years ended December 31, 2022 and 2021, the Company recognized NT\$145,979 million and NT\$135,856 million, respectively, in operating costs, of which NT\$98 million was related to write-down of inventories and NT\$426 million was related to reversal of write-down of inventories.

b. None of the aforementioned inventories were pledged.

(7) Investments Accounted for Under the Equity Method

a. Details of investments accounted for under the equity method are as follows:

	As of December 31,		
	2022	2021	Percentage of ownership or voting rights
<b>Listed companies</b>			
FARADAY TECHNOLOGY CORP. (FARADAY) (Note A)	\$1,874,131	\$1,779,618	13.78
UNIMICRON TECHNOLOGY CORP. (UNIMICRON) (Note B)	13,460,838	10,418,777	13.27
<b>Unlisted companies</b>			
MTIC HOLDINGS PTE. LTD. (Note C)	-	-	45.44
UNITECH CAPITAL INC.	426,070	976,559	42.00
TRIKNIGHT CAPITAL CORPORATION	2,117,678	4,122,087	40.00
HSUN CHIEH CAPITAL CORP.	210,690	229,598	40.00
PURIUMFIL INC.	14,840	7,253	44.45
HSUN CHIEH INVESTMENT CO., LTD.	9,530,916	14,092,662	36.49
YANN YUAN INVESTMENT CO., LTD.	7,299,414	9,741,234	26.78
UNITED LED CORPORATION HONG KONG LIMITED	97,156	98,954	25.14
VSENSE CO., LTD. (Note C)	-	-	23.98
TRANSLINK CAPITAL PARTNERS I, L.P. (Note D)	54,556	225,342	10.38
Total	\$35,086,289	\$41,692,084	

Financial Review

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: Beginning from June 2020, the Company accounts for its investment in UNIMICRON as an associate given the fact that the Company obtained the ability to exercise significant influence over UNIMICRON through representation on its Board of Directors.

Note C: When the Company's share of losses of an associate equals or exceeds its interest in that associate, the Company discontinues recognizing its share of further losses. Additional losses and liabilities are recognized only to the extent that the Company has incurred legal or constructive obligations or made payments on behalf of that associate.

Note D: 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\$15,335 million and NT\$12,198 million, as of December 31, 2022 and 2021, respectively. The fair value of these investments were NT\$28,416 million and NT\$53,491 million as of December 31, 2022 and 2021, respectively.

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\$(2,553) million and NT\$8,380 million for the years ended December 31, 2022 and 2021, respectively. Share of other comprehensive income of these associates and joint ventures amounted to NT\$22 and NT\$3,247 million for the years ended December 31, 2022 and 2021, respectively. The balances of investments accounted for under the equity method were NT\$25,801 million and NT\$39,806 million as of December 31, 2022 and 2021, respectively.

Although the Company is the largest shareholder of some associates, after comprehensive assessment, the Company does not own the major voting rights as the remaining voting rights holders are able to align and prevent the Company from ruling the relevant operation. Therefore, the Company does not control but owns significant influence over the aforementioned associates.

None of the aforementioned associates were pledged.

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, 2022 and 2021 were NT\$103 million and NT\$(30) million, respectively, which were not included in the following table.

The aggregate amount of the Company's share of all its individually immaterial associates that are accounted for using the equity method were as follows:

	For the years ended December 31,	
	2022	2021
Income (loss) from continuing operations	\$(1,851,767)	\$8,495,043
Other comprehensive income (loss)	(2,995,563)	3,367,033
Total comprehensive income (loss)	\$(4,847,330)	\$11,862,076

c. One of UMC's associates, HSUN CHIEH INVESTMENT CO., LTD., held 441 million shares of UMC's stock as of December 31, 2022 and 2021. Another associate, YANN YUAN INVESTMENT CO., LTD., held 193 million shares and 160 million shares of UMC's stock as of December 31, 2022 and 2021, respectively.

(8) Property, Plant and Equipment

a. 2022

Assets Used by the Company:

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Leasehold improvement	Construction in progress and equipment	Total
As of January 1, 2022	\$1,491,343	\$36,827,480	\$897,806,699	\$55,959	\$7,305,174	\$61,282	\$22,856,033	\$966,403,970
Additions	-	325,943	-	-	-	-	72,270,938	72,596,881
Disposals	-	(69,897)	(6,391,003)	-	(27,782)	(2,414)	(69,640)	(6,560,736)
Transfers and reclassifications	-	219,666	46,548,734	8,154	730,317	421	(39,772,778)	7,734,514
Exchange effect	(21,127)	294,577	15,855,258	810	54,284	3,786	79,390	16,266,978
As of December 31, 2022	\$1,470,216	\$37,597,769	\$953,819,688	\$64,923	\$8,061,993	\$63,075	\$55,363,943	\$1,056,441,607

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, 2022	\$-	\$21,184,969	\$810,904,881	\$47,108	\$6,222,383	\$55,125	\$-	\$838,414,466
Depreciation	-	1,443,545	38,565,229	3,946	456,017	2,816	-	40,471,553
Disposals	-	(69,489)	(6,331,532)	-	(27,421)	(2,404)	-	(6,430,846)
Transfers and reclassifications	-	161	(4,913)	-	(176)	-	-	(4,928)
Exchange effect	-	172,320	14,604,120	543	46,714	3,846	-	14,827,543
As of December 31, 2022	\$-	\$22,731,506	\$857,737,785	\$51,597	\$6,697,517	\$59,383	\$-	\$887,277,788
Net carrying amount:								
As of December 31, 2022	\$1,470,216	\$14,866,263	\$96,081,903	\$13,326	\$1,364,476	\$3,692	\$55,363,943	\$169,163,819

Assets Subject to Operating Leases:

Cost:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2022	\$549,010	\$2,422,389	\$-	\$1,312,703	\$4,284,102
Disposals	-	-	-	(660)	(660)
Transfers and reclassifications	-	(1,226)	6,345	15,562	20,681
Exchange effect	(3,223)	22,084	-	6,686	25,547
As of December 31, 2022	\$545,787	\$2,443,247	\$6,345	\$1,334,291	\$4,329,670

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2022	\$-	\$1,095,113	\$-	\$1,236,790	\$2,331,903
Depreciation	-	94,644	-	60,229	154,873
Disposals	-	-	-	(660)	(660)
Transfers and reclassifications	-	(161)	6,345	211	6,395
Exchange effect	-	13,216	-	5,696	18,912
As of December 31, 2022	\$-	\$1,202,812	\$6,345	\$1,302,266	\$2,511,423
Net carrying amount:					
As of December 31, 2022	\$545,787	\$1,240,435	\$-	\$32,025	\$1,818,247

b. 2021

Assets Used by the Company:

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, 2021	\$1,690,613	\$37,257,510	\$871,569,325	\$54,898	\$6,908,778	\$63,774	\$16,529,296	\$934,074,194
Additions	-	-	-	-	-	-	38,284,083	38,284,083
Disposals	-	(20,455)	(3,587,695)	(791)	(5,010)	-	(22,822)	(3,636,773)
Transfers and reclassifications	(96,439)	114,081	35,718,256	2,158	433,504	204	(31,692,267)	4,479,497
Exchange effect	(102,831)	(523,656)	(5,893,187)	(306)	(32,098)	(2,696)	(242,257)	(6,797,031)
As of December 31, 2021	\$1,491,343	\$36,827,480	\$897,806,699	\$55,959	\$7,905,174	\$61,282	\$22,856,033	\$966,403,970

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, 2021	\$-	\$19,851,288	\$777,687,345	\$42,732	\$5,715,339	\$49,963	\$-	\$803,346,667
Depreciation	-	1,474,241	41,329,061	5,310	531,085	7,247	-	43,346,944
Disposals	-	(20,455)	(3,580,477)	(791)	(5,003)	-	-	(3,606,726)
Transfers and reclassifications	-	1,645	125,413	-	-	-	-	127,058
Exchange effect	-	(121,750)	(4,656,461)	(143)	(19,038)	(2,085)	-	(4,799,477)
As of December 31, 2021	\$-	\$21,184,969	\$810,904,881	\$47,108	\$6,222,383	\$55,125	\$-	\$838,414,466
Net carrying amount:								
As of December 31, 2021	\$1,491,343	\$15,642,511	\$86,901,818	\$8,851	\$1,082,791	\$6,157	\$22,856,033	\$127,989,504

Assets Subject to Operating Leases:

Cost:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2021	\$459,622	\$2,451,311	\$125,413	\$1,315,633	\$4,351,979
Transfers and reclassifications	96,439	(18,542)	(125,413)	-	(47,516)
Exchange effect	(7,051)	(10,380)	-	(2,930)	(20,361)
As of December 31, 2021	\$549,010	\$2,422,389	\$-	\$1,312,703	\$4,284,102

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2021	\$-	\$1,007,545	\$125,413	\$1,171,885	\$2,304,843
Depreciation	-	94,130	-	67,347	161,477
Transfers and reclassifications	-	(1,645)	(125,413)	-	(127,058)
Exchange effect	-	(4,917)	-	(2,442)	(7,359)
As of December 31, 2021	\$-	\$1,095,113	\$-	\$1,236,790	\$2,331,903
Net carrying amount:	\$549,010	\$1,327,276	\$-	\$75,913	\$1,952,199

c. Details of interest expense capitalized were as follows:

	For the years ended December 31,	
	2022	2021
Interest expense capitalized	\$1,661	\$-
Interest rates applied	1.44% - 1.61%	-

d. Please refer to Note 8 for property, plant and equipment pledged as collateral.

(9) 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,	
	2022	2021
Land (including land use right)	\$5,714,166	\$4,877,702
Buildings	124,420	284,011
Machinery and equipment	1,748,244	1,940,084
Transportation equipment	21,485	18,704
Other equipment	3,676	6,344
Net	\$7,611,991	\$7,126,845

	For the years ended December 31,	
	2022	2021
Depreciation	\$359,007	\$325,268
Land (including land use right)	119,641	121,373
Buildings	206,445	210,188
Machinery and equipment	12,287	9,858
Transportation equipment	4,568	4,524
Other equipment	\$701,948	\$671,211
Total		

i. For the years ended December 31, 2022 and 2021, the Company's addition to right-of-use assets amounted to NT\$1,130 million and NT\$207 million, respectively.

ii. Please refer to Note 8 for right-of-use assets pledged as collateral.

(b) Lease Liabilities

	As of December 31,	
	2022	2021
Current	\$537,314	\$557,873
Non-current	5,199,781	4,510,881
Total	\$5,737,095	\$5,068,754

Please refer to Note 6(24) 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(8) for relevant disclosure of property, plant and equipment for operating leases.

(10) Intangible Assets

2022

Cost:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2022	\$15,012	\$4,845,037	\$4,491,164	\$3,348,071	\$12,699,284
Additions	-	2,713,534	-	480,880	3,194,414
Write-off	-	(1,857,289)	(1,344,682)	(869,940)	(4,071,911)
Reclassifications	-	(10,721)	-	-	(10,721)
Exchange effect	-	(20,774)	275,950	(5,027)	250,149
As of December 31, 2022	\$15,012	\$5,669,787	\$3,422,432	\$2,953,984	\$12,061,215

Accumulated Amortization and Impairment:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2022	\$7,398	\$2,913,824	\$3,324,667	\$2,808,462	\$9,054,351
Amortization	-	1,656,765	475,870	556,965	2,689,600
Write-off	-	(1,857,289)	(1,344,682)	(869,940)	(4,071,911)
Exchange effect	-	(23,903)	141,658	(3,780)	113,975
As of December 31, 2022	\$7,398	\$2,689,397	\$2,597,513	\$2,491,707	\$7,786,015
Net carrying amount:					
As of December 31, 2022	\$7,614	\$2,980,390	\$824,919	\$462,277	\$4,275,200

2021

Cost:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2021	\$15,012	\$4,264,558	\$4,530,465	\$3,497,252	\$12,307,287
Additions	-	1,333,882	56,331	330,976	1,721,189
Write-off	-	(587,102)	-	(458,295)	(1,045,397)
Reclassifications	-	(758)	-	-	(758)
Exchange effect	-	(165,543)	(95,632)	(21,862)	(283,037)
As of December 31, 2021	\$15,012	\$4,845,037	\$4,491,164	\$3,348,071	\$12,699,284

Accumulated Amortization and Impairment:

	Goodwill	Software	Patents and technology license fees	Others	Total
As of January 1, 2021	\$7,398	\$2,035,028	\$2,852,037	\$2,534,911	\$7,429,374
Amortization	-	1,566,948	538,874	747,617	2,853,439
Write-off	-	(587,102)	-	(458,295)	(1,045,397)
Exchange effect	-	(101,050)	(66,244)	(15,771)	(183,065)
As of December 31, 2021	\$7,398	\$2,913,824	\$3,324,667	\$2,808,462	\$9,054,351
Net carrying amount:					
As of December 31, 2021	\$7,614	\$1,931,213	\$1,166,497	\$539,609	\$3,644,933

The amortization amounts of intangible assets were as follows:

	For the years ended December 31,	
	2022	2021
Operating costs	\$1,329,850	\$798,011
Operating expenses	\$1,359,750	\$2,055,428

(11) Short-Term Loans

	As of December 31,	
	2022	2021
Unsecured bank loans	\$-	\$1,924,124
Interest rates applied	For the years ended December 31,	
	2022	2021
	0.33% - 3.60%	0.15% - 3.60%

210 (12) Financial Liabilities at Fair Value through Profit or Loss, Current

	As of December 31,	
	2022	2021
Embedded derivatives in exchangeable bonds	\$438,397	\$2,380,599
(13) Bonds Payable		
	As of December 31,	
	2022	2021
Unsecured domestic bonds payable	\$23,100,000	\$31,300,000
Unsecured exchangeable bonds payable	5,757,373	10,817,047
Less: Discounts on bonds payable	(672,686)	(1,580,389)
Total	28,184,687	40,536,658
Less: Current or exchangeable portion due within one year	(5,101,591)	(17,458,959)
Net	\$23,083,096	\$23,077,699

a. UMC issued domestic unsecured corporate bonds. The terms and conditions of the bonds are as follows:

Term	Issuance date	Issued amount	Coupon rate	Repayment
Seven-year	In mid-June 2014	NT\$2,000 million	1.70%	Interest was paid annually and the principal was fully repaid in June 2021.
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 was paid annually and the principal was fully repaid in March 2022.
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 was paid annually and the principal was fully repaid in October 2022.
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.

Term	Issuance date	Issued amount	Coupon rate	Repayment
Five-year	In late April 2021	NT\$3,500 million	0.57%	Interest will be paid annually and the principal will be repayable in April 2026 upon maturity.
Seven-year	In late April 2021	NT\$2,000 million	0.63%	Interest will be paid annually and the principal will be repayable in April 2028 upon maturity.
Ten-year (green bond)	In late April 2021	NT\$2,100 million	0.68%	Interest will be paid annually and the principal will be repayable in April 2031 upon maturity.
Five-year	In mid-December 2021	NT\$5,000 million	0.63%	Interest will be paid annually and the principal will be repayable in December 2026 upon maturity.

b. On July 7, 2021, UMC issued SGX-ST listed currency linked zero coupon exchangeable bonds. In accordance with IFRS 9, the value of the exchange right, call option and put option (together referred to as Option) of the exchangeable bonds was separated from the host and accounted for as “financial liabilities at fair value through profit or loss, current”. The effective rate of the host bond was 3.49%. The terms and conditions of the bonds are as follows:

- i. Issue Amount: US\$400 million
- ii. Period: July 7, 2021 - July 7, 2026 (Maturity Date)
- iii. Redemption:
  - (i) UMC may, at its option, redeem in whole or in part at the principal amount of the bonds with an interest calculated at the rate of -0.625% per annum (the Early Redemption Amount) at any time after the third anniversary from the issue date and prior to the Maturity Date, if the closing price of the common shares of NOVATEK MICROELECTRONICS CORPORATION (“NOVATEK”) on the Taiwan Stock Exchange (the “TWSE”), converted into U.S. dollars at the prevailing exchange rate, for 20 out of 30 consecutive trading days prior to the publication of the redemption notice is at least 130% of the quotient of the Early Redemption Amount multiplied by the then exchange price (converted into U.S. dollars at the Fixed Exchange Rate), divided by the principal amount of the bonds. The Early Redemption Amount will be converted into NTD based on the Fixed Exchange Rate (NTD 27.902=USD 1.00), and this fixed NTD amount will then be converted using the prevailing exchange at the time of redemption for payment in USD.



- (ii) UMC may redeem the outstanding bonds in whole, but not in part, at the Early Redemption Amount, in the event that over 90% of the bonds have been previously redeemed, repurchased and cancelled or exchanged.
- (iii) In the event of any change in ROC taxation resulting in increase of tax obligation or the necessity to pay additional interest expense or increase of additional costs to UMC, UMC may redeem the outstanding bonds in whole, but not in part, at the Early Redemption Amount. Bondholders may elect not to have their bonds redeemed but with no entitlement to any additional amounts or reimbursement of additional taxes.
- (iv) All or any portion of the bonds will be redeemable at put price at the option of bondholders on July 7, 2024 at 98.14% of the principal amount.
- (v) In the event that the common shares of NOVATEK cease to be listed or are suspended from trading for a period equal to or exceeding 30 consecutive trading days on the TWSE, each bondholder shall have the right to require UMC to redeem the bonds, in whole but not in part, at the Early Redemption Amount.
- (vi) Upon the occurrence of a change of control (as defined in the indenture) of UMC, each bondholder 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 Exchange:

- (i) Underlying Securities: Common Shares of NOVATEK
- (ii) Exchange Period: The bonds are exchangeable at any time on or after October 8, 2021 and prior to June 27, 2026, into NOVATEK common shares. If for any reason UMC does not have sufficient NOVATEK common shares to deliver upon the exchange of any bond, then, UMC will pay to the exchanging bondholder an amount in U.S. dollars equal to the product of the volume-weighted average closing price per NOVATEK common share on the TWSE for five consecutive trading days starting from and including the applicable exercise date (as defined in the indenture) (or such fewer number of trading days as are available within ten days starting from and including the applicable exercise date) each converted into USD at the prevailing rate on the day preceding the applicable trading day and the number of NOVATEK common shares that UMC is unable to deliver. 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) Exchange Price and Adjustment: The exchange price was originally NT\$731.25 per NOVATEK common share. The exchange price will be subject to adjustments upon the occurrence of certain events set out in the indenture. The exchange price was NT\$583.3 per NOVATEK common share on December 31, 2022.

v. Redemption on the Maturity Date:

- The bonds will be redeemed with 96.92% principal amount on the maturity date unless:
- (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 exchange right before maturity; or
- (iii) The bonds shall have been redeemed or repurchased by UMC and cancelled.

For the year ended December 31, 2022, the Company has repurchased and cancelled the outstanding principal amount of exchangeable bonds totaling US\$187.1 million with derecognition of the related derivative financial liabilities. The difference between the repurchased amount and the carrying amount recognized in non-operating other gains and losses was immaterial.

(14) Long-Term Loans

- a. Details of long-term loans as of December 31, 2022 and 2021 were as follows:

Lenders	As of December 31,		Redemption
	2022	2021	
Secured Long-Term Loan from Mega International Commercial Bank (1)	\$9,732	\$14,598	Repayable quarterly from October 24, 2019 to October 24, 2024 with monthly interest payments. Interest-only payment for the first year.
Secured Long-Term Loan from Mega International Commercial Bank (2)	18,000	-	Repayable quarterly from February 23, 2022 to February 22, 2027 with monthly interest payments. Interest-only payment for the first year.
Secured Long-Term Loan from Mega International Commercial Bank (3)	60,500	-	Repayable quarterly from December 22, 2022 to February 23, 2027 with monthly interest payments. Interest-only payment for the first year.
Secured Long-Term Loan from Taiwan Cooperative Bank (1)	35,676	47,568	Repayable quarterly from October 19, 2015 to October 19, 2025 with monthly interest payments. Interest-only payment for the first year.
Secured Long-Term Loan from Taiwan Cooperative Bank (2)	4,375	13,125	Repayable monthly from May 31, 2019 to May 31, 2023 with monthly interest payments.



Note A: USCXM, the subsidiary of UMC failed to comply with the loan covenant to maintain its financial ratio at certain level and therefore the loan was reclassified to current liabilities as of December 31, 2021. As of February 7, 2022, the bank exemption of 2021 have been obtained and the loan was reclassified to non-current liabilities.

Note B: 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. As of December 31, 2021, the line of credit was fully used. The expiration date of the agreement was April 16, 2022.

Note C: UMC entered into a 5-year loan agreement with Taipei Fubon Bank, effective from February 9, 2018. The agreement offered UMC a revolving line of credit of NT\$2 billion. This line of credit will be reduced starting from the end of the two years after the first use and every twelve months thereafter, with a total of four adjustments. The expiration date of the agreement is August 9, 2023. As of December 31, 2022 and 2021, the unused line of credit were NT\$0.5 billion and NT\$0.8 billion, respectively.

Note D: 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. As of December 31, 2021, the unused line of credit was NT\$0.8 billion. The expiration date of the agreement was October 27, 2022.

Note E: UMC entered into a 5-year loan agreement with KGI Commercial Bank, effective from May 10, 2021. 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 second year after the first use and every twelve months thereafter, with a total of four adjustments. The expiration date of the agreement is August 10, 2026. As of December 31, 2022 and 2021, the unused line of credit were NT\$3 billion and NT\$2.5 billion, respectively.

Note F: First Commercial Bank approved the 1-year credit loan on January 18, 2021, which offered UMC a revolving line of credit of NT\$2 billion starting from the approval date to January 17, 2022. As of December 31, 2021, the unused line of credit was NT\$1.2 billion.

Note G: First Commercial Bank approved the 1-year credit loan on April 14, 2022, which offered UMC a revolving line of credit of NT\$2 billion starting from the approval date to April 13, 2023. As of December 31, 2022, the unused line of credit was NT\$1.2 billion.

Note H: UMC entered into a 5-year loan agreement with Yuanta Commercial Bank, effective from March 3, 2021. The agreement offered UMC a revolving line of credit of NT\$4 billion. This line of credit will be reduced starting from the end of the second year after the contract date and every twelve months thereafter, with a total of four adjustments. The expiration date of the agreement is March 2, 2026. As of December 31, 2022 and 2021, the unused line of credit were NT\$4 billion and NT\$3 billion, respectively.

b. Please refer to Note 8 for property, plant and equipment and right-of-use assets pledged as collateral for long-term loans.

#### (15) 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, 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\$1,880 million and NT\$1,636 million were contributed by the Company for the years ended December 31, 2022 and 2021, 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, 2022 and 2021, total pension expenses of NT\$34 million and NT\$23 million, respectively, were recognized by the Company.

ii. Movements in present value of defined benefit obligation and fair value of plan assets were as follows:

	For the years ended	
	December 31, 2022	2021
Defined benefit obligation at beginning of year	\$ (5,458,333)	\$ (5,561,999)
Items recognized as profit or loss:		
Service cost	(9,911)	(11,009)
Interest cost	(33,842)	(16,130)
Subtotal	(43,753)	(27,139)
Remeasurements recognized in other comprehensive income (loss):		
Arising from changes in demographic assumptions	-	(4,537)
Arising from changes in financial assumptions	227,790	(123,140)
Experience adjustments	(56,959)	(91,268)
Subtotal	170,831	(218,945)
Benefits paid	224,632	349,750
Defined benefit obligation at end of year	\$ (5,106,623)	\$ (5,458,333)

Movements in fair value of plan assets during the year:

	For the years ended	
	December 31, 2022	2021
Beginning balance of fair value of plan assets	\$ 1,581,012	\$ 1,399,345
Items recognized as profit or loss:		
Interest income on plan assets	9,802	4,059
Contribution by employer	745,066	505,890
Benefits paid	(224,632)	(349,750)
Remeasurements recognized in other comprehensive income (loss):		
Return on plan assets, excluding amounts included in interest income	125,973	21,468
Fair value of plan assets at end of year	\$ 2,237,221	\$ 1,581,012

The actual returns on plan assets of the Company for the years ended December 31, 2022 and 2021 were NT\$136 million and NT\$26 million, respectively.

iii. The defined benefit plan recognized on the consolidated balance sheets were as follows:

	As of December 31,	
	2022	2021
Present value of the defined benefit obligation	\$ (5,106,623)	\$ (5,458,333)
Fair value of plan assets	2,237,221	1,581,012
Funded status	(2,869,402)	(3,877,321)
Net defined benefit liabilities, noncurrent recognized on the consolidated balance sheets	\$ (2,869,402)	\$ (3,877,321)

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,	
	2022	2021
Cash	20%	24%
Equity instruments	47%	43%
Debt instruments	22%	23%
Others	11%	10%

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,	
	2022	2021
Discount rate	1.24%	0.62%
Rate of future salary increase	4.25%	4.25%

vi. Expected future benefit payments are as follows:

Year	As of December 31, 2022
2023	\$481,492
2024	450,628
2025	466,474
2026	454,835
2027	454,663
2028 and thereafter	3,270,344
Total	\$5,578,436

The Company expects to make pension fund contribution of NT\$337 million in 2023. The weighted-average durations of the defined benefit obligation were 7 years and 8 years as of December 31, 2022 and 2021, respectively.

vii. Sensitivity analysis:

	As of December 31, 2022	
	Discount rate	Rate of future salary increase
	0.5%	0.5%
	increase	decrease
	decrease	increase
Decrease (increase) in defined benefit obligation	\$172,801	\$(182,478)
	\$151,050	\$145,000

	As of December 31, 2021	
	Discount rate	Rate of future salary increase
	0.5%	0.5%
	increase	decrease
	decrease	increase
Decrease (increase) in defined benefit obligation	\$207,999	\$(220,561)
	\$(184,551)	\$176,567

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.

(16) Deferred Government Grants

	As of December 31,	
	2022	2021
Beginning balance	\$8,543,798	\$10,207,109
Arising during the period	174,352	2,498,990
Recorded in profit or loss:		
Other operating income	(4,164,189)	(4,069,055)
Exchange effect	123,483	(93,246)
Ending balance	\$4,677,444	\$8,543,798
Current (classified under other current liabilities)	\$2,681,842	\$4,096,742
Non-current (classified under other noncurrent liabilities-others)	1,995,602	4,447,056
Total	\$4,677,444	\$8,543,798

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.

(17) Refund Liabilities (classified under other current liabilities)

	As of December 31,	
	2022	2021
Refund liabilities	\$1,139,227	\$724,207

(18) Decommissioning liabilities (classified under other noncurrent liabilities-others)

	As of December 31,	
	2022	2021
Decommissioning liabilities	\$366,863	\$-

Under certain applicable agreement, the Company is obligated to dismantling and removing the items of property, plant and equipment and restoring the site on which they are located. Accordingly, the Company recognized the liability pursuant to the present value of the estimated decommissioning and restoration cost for the year ended December 31, 2022.



(19) Equity

a. Capital stock:

- i. UMC had 26,000 million common shares authorized to be issued as of December 31, 2022 and 2021, of which 12,505 million shares and 12,483 million shares were issued as of December 31, 2022 and 2021, respectively, each at a par value of NT\$10.
- ii. UMC had 135 million and 149 million ADSs, which were traded on the NYSE as of December 31, 2022 and 2021, respectively. The total number of common shares of UMC represented by all issued ADSs were 674 million shares and 746 million shares as of December 31, 2022 and 2021, respectively. One ADS represents five common shares.
- iii. On December 5, 2022 and June 9, 2021, UMC issued restricted stocks for its employees in a total of 23 million shares and 1 million shares with a par value of NT\$10 each, respectively. The aforementioned issuance of new shares was approved by the competent authority and the registration was completed. Please refer to Note 6(20) for the information of restricted stocks.
- iv. For the years ended December 31, 2022 and 2021, UMC has recalled and cancelled 2 million shares and 2 million shares, respectively of unvested restricted stocks issued for employees according to the issuance plan. The aforementioned reduction of capital was approved by the competent authority and the registration was completed.
- v. On September 3, 2021, the Board of Directors' meeting approved the share exchange transaction with CHIPBOND. UMC issued 61 million common shares with a par value of NT\$10 and obtained 53 million common shares newly issued by CHIPBOND. The aforementioned issuance of new shares was approved by the competent authority and the change in share registration was completed. The share exchanged date was November 5, 2021. Please refer to Note 6(3) for further information.

b. Treasury stock:

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. On September 3, 2021, the share exchange transaction with CHIPBOND was approved by FORTUNE's Board of Directors' meeting. The 16 million shares of UMC held by FORTUNE were exchanged for 14 million common shares newly issued by CHIPBOND.

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, if applicable, may be distributed preferentially as preferred shares dividends for the current year, and if there is still a remaining balance, in addition to the previous year's unappropriated earnings, UMC shall distribute it according to the distribution plan proposed by the Board of Directors according to the dividend policy and submitted to the shareholders' 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 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%.

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 appropriation of earnings for 2021 was approved by the shareholders' meeting held on May 27, 2022, while the appropriation of earnings for 2022 was proposed by the Board of Directors' meeting on February 22, 2023. The details of appropriation were as follows:

	Appropriation of earnings (in thousand NT dollars)		Cash dividend per share (NT dollars)	
	2022	2021	2022	2021
Legal reserve	\$8,905,139	\$5,832,570		
Special reserve	(2,180,156)	(3,250,434)		
Cash dividends	45,017,096	-	\$3.60	\$-

In addition, the shareholders' meeting held on May 27, 2022 approved to distribute cash from additional paid-in capital of NT\$37,446 million, at NT\$3 per share.

The aforementioned 2021 appropriation approved by shareholders' meeting was consistent with the resolutions of the Board of Directors' meeting held on February 24, 2022.

The appropriation of 2022 unappropriated retained earnings has not yet been approved by the shareholders' meeting as of the reporting date. Information relevant to the Board of Directors' meeting resolutions and shareholders' meeting approval can be obtained from the "Market Observation Post System" on the website of the TWSE.

Please refer to Note 6(22) for information on the employees and directors' compensation.

d. Non-controlling interests:

	For the years ended December 31,	
	2022	2021
Balance as of January 1	\$223,181	\$113,356
Impact of retroactive applications	(66,089)	-
Adjusted balance as of January 1	157,092	113,356
Attributable to non-controlling interests:		
Net income (loss)	819,960	(668,245)
Other comprehensive income (loss)	8	(19)
Share-based payment transactions	1,490	-
Changes in subsidiaries' ownership	(1,339)	(11,126)
Non-controlling interests	5,456	23,430
Others	(638,988)	765,785
Ending balance	\$343,679	\$223,181

(20) Share-Based Payment

a. Treasury stock plan for employees

In September 2020, the Company executed a compensation plan to offer 105 million shares of treasury stock to qualified employees of the Company. The compensation cost for the share-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 UMC's shares on the grant date was NT\$21.45 per share. For the stocks vested on the date of grant, the Company recognized the entire compensation cost once granted, whereas for the stocks with requisite service conditions to vest at the end of one year from the date of grant, the Company recognizes the compensation cost over the period in which the services conditions are fulfilled, together with a corresponding increase in equity. The compensation plan had expired in September 2021. For the year ended December 31, 2021, the compensation costs of NT\$226 was recognized in expenses by the Company.

b. Restricted stock plan for employees

On May 27, 2022, the shareholders approved a compensation plan in their meeting to issue restricted stocks to qualified employees of the Company without consideration. The maximum shares to be issued are 50 million common shares. UMC is authorized to issue restricted stocks in one tranche or in installments, under the custody of trust institution, within two years from the date of receiving the effective declaration from the competent authority.

The issuance plan was authorized for effective registration by the Securities and Futures Bureau of the FSC and accordingly, 23 million shares of restricted stock for employees were issued without consideration on December 5, 2022. The life of the plan is four years. Beginning from the end of two years since the date of grant, those employees who fulfill both service period and performance conditions set by UMC are gradually eligible to the vested restricted stocks at certain percentage and time frame. For those employees who fail to fulfill the vesting conditions, UMC will recall and cancel their stocks without consideration. During the vesting period, the restricted stock holders are entitled the same rights as those of common stock holders including the right to receive dividends, but are restricted to sell, pledge, set guarantee, transfer, grant, or dispose the restricted stocks in any other ways. Related information can be obtained from the "Market Observation Post System" on the website of the TWSE.

On June 10, 2020, the shareholders approved a compensation plan in their meeting to issue restricted stocks to qualified employees of UMC without consideration. The maximum shares to be issued are 233 million common shares. UMC is authorized to issue restricted stocks in one tranche or in installments, under the custody of trust institution, within one year from the date of receiving the effective declaration from the competent authority.

The issuance plan was authorized for effective registration by the Securities and Futures Bureau of the FSC and accordingly, 1 million shares and 200 million shares of restricted stock for employees were issued without consideration on June 9, 2021 and September 1, 2020, respectively. The life of the plan is four years. Beginning from the end of two years since the date of grant, those employees who fulfill both service period and performance conditions set by UMC are gradually eligible to the vested restricted stocks at certain percentage and time frame. For those employees who fail to fulfill the vesting conditions, UMC will recall and cancel their stocks without consideration. During the vesting period, the restricted stock holders are entitled the same rights as those of common stock holders including the right to receive dividends, but are restricted to sell, pledge, set guarantee, transfer, grant, or dispose the restricted stocks in any other ways. Related information can be obtained from the “Market Observation Post System” on the website of the TWSE.

The aforementioned compensation costs for the equity-settled share-based payment issued in 2022 and 2020 were measured at fair value based on the closing quoted market price of the shares on the grant date, NT\$44.4, NT\$53.0 and NT\$21.8 per share, respectively. The unvested restricted stocks issued on the grant date for employees are recognized in unearned employee compensation as a transitional contra equity account and such account shall be amortized as compensation expense over the vesting period. For the years ended December 31, 2022 and 2021, the compensation costs of NT\$1,352 million and NT\$1,520 million, respectively, were recognized in expenses by the Company.

c. Stock appreciation right plan for employees

In June 2021 and September 2020, the Company executed a compensation plan to grant 1 million units and 26 million units of cash-settled stock appreciation right to qualified employees of the Company without consideration, respectively. One unit of stock appreciation right to employees represents a right to the intrinsic value of one common share of UMC. The life of the plan is four years. Beginning from the end of two years since the date of grant, those employees who fulfill both service period and performance conditions set by the Company are gradually eligible to the vested stock appreciation right at certain percentage and time frame. For those employees who fail to fulfill the vesting conditions, the Company will withdraw their rights without consideration. During the vesting period, the holders of the stock appreciation right are not entitled the same rights as those of common stock holders of UMC.

The compensation cost for the cash-settled share-based payment was measured at fair value initially by using Black-Scholes Option Pricing Model and will be remeasured at the end of each reporting period until settlement. As of December 31, 2022, the assumptions used are as follows:

	Granted in June 2021	Granted in September 2020
Share price of measurement date (NT\$/ per share)	\$40.70	\$40.70
Expected volatility	36.35% - 44.77%	38.96% - 40.38%
Expected life	0.44 - 2.44 years	0.67 - 1.67 years
Expected dividend yield	5.50%	5.50%
Risk-free interest rate	0.92% - 1.13%	0.95% - 1.08%

For the years ended December 31, 2022 and 2021, the compensation costs of NT\$210 million and NT\$271 million, respectively, were recognized in expenses by the Company. The liabilities for stock appreciation right recognized which were classified under other payables and other noncurrent liabilities-others amounted to NT\$340 million and NT\$352 million as of December 31, 2022 and 2021, respectively. The intrinsic value for the liabilities of vested rights was nil.

(21) Operating Revenues

a. Disaggregation of revenue

i. By Product

	For the years ended December 31,	
	2022	2021
Wafer	\$265,600,173	\$204,594,399
Others	13,105,091	8,416,619
<b>Total</b>	<b>\$278,705,264</b>	<b>\$213,011,018</b>

ii. By geography

	For the years ended December 31,	
	2022	2021
Taiwan	\$87,500,215	\$80,655,096
Singapore	39,093,439	29,068,748
China (includes Hong Kong)	46,146,545	31,176,136
Japan	17,667,412	13,705,192
USA	35,175,569	24,270,210
Europe	8,831,645	5,628,998
Others	44,290,439	28,506,638
<b>Total</b>	<b>\$278,705,264</b>	<b>\$213,011,018</b>





(23) Net Other Operating Income and Expenses

	For the years ended December 31,	
	2022	2021
Government grants	\$5,058,658	\$5,269,412
Rental income from property, plant and equipment	192,833	187,166
Gain on disposal of property, plant and equipment	482,983	143,735
Others	(394,827)	(373,482)
Total	\$5,339,647	\$5,226,831

(24) Non-Operating Income and Expenses

a. Other gains and losses

	For the years ended December 31,	
	2022	2021
Gain (loss) on valuation of financial assets and liabilities at fair value through profit or loss	\$ (1,247,962)	\$ 2,892,470
Loss on disposal of investments	-	(10,964)
Others	62,869	(2,009,952)
Total	\$ (1,185,093)	\$ 871,554

Others included the one-time payment to MICRON TECHNOLOGY, INC. (MICRON) due to the worldwide settle agreement between UMC and MICRON (Please refer to Note 9(7)) and the losses of financial instrument transaction recognized in 2021.

b. Finance costs

	For the years ended December 31,	
	2022	2021
Interest expenses	\$486,079	\$437,055
Bonds payable	1,100,840	1,285,708
Bank loans	166,928	145,187
Lease liabilities	31,464	139
Others	81,018	94,841
Financial expenses	\$1,866,329	\$1,962,930
Total		

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 0.2% 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 shareholders' meeting for such distribution.

The Company recognized the employees and directors' compensation in the profit or loss with corresponding other payables during the periods when earned for the years ended December 31, 2022 and 2021. 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 2021 were reported to the shareholders' meeting on May 27, 2022, while the distributions of employees and directors' compensation for 2022 were approved through the Board of Directors' meeting on February 22, 2023. The details of distribution were as follows:

	2022	2021
Employees' compensation – Cash	\$9,160,485	\$4,770,909
Directors' compensation	45,000	25,264

The aforementioned employees and directors' compensation for 2021 reported during the shareholders' meeting was consistent with the resolutions of the Board of Directors' meeting held on February 24, 2022.

Information relevant to the aforementioned employees and directors' compensation can be obtained from the "Market Observation Post System" on the website of the TWSE.

## (25) Components of Other Comprehensive Income (Loss)

For the year ended December 31, 2021

	For the year ended December 31, 2022				For the year ended December 31, 2021					
	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss), before tax	Income tax effect	Other comprehensive income (loss), net of tax	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss), before tax	Income tax effect	Other comprehensive income (loss), net of tax
Items that will not be reclassified subsequently to profit or loss:										
Remeasurements of defined benefit pension plans	\$296,804	\$-	\$296,804	\$(59,361)	\$237,443	\$(197,477)	\$-	\$(197,477)	\$39,495	\$(157,982)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	(4,646,064)	-	(4,646,064)	(283,395)	(4,929,459)	5,811,342	-	5,811,342	(144,138)	5,667,204
Share of other comprehensive income (loss) of associates and joint ventures which will not be reclassified subsequently to profit or loss	(2,983,802)	-	(2,983,802)	-	(2,983,802)	3,361,023	-	3,361,023	-	3,361,023
Items that may be reclassified subsequently to profit or loss:										
Exchange differences on translation of foreign operations	9,292,308	-	9,292,308	750,060	10,042,368	(4,743,299)	2,283	(4,741,016)	20,782	(4,720,234)
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss	91,676	-	91,676	(20,687)	70,989	(24,080)	(394)	(24,474)	6,018	(18,456)
Total other comprehensive income (loss)	\$2,050,922	\$-	\$2,050,922	\$386,617	\$2,437,539	\$4,207,509	\$1,889	\$4,209,398	\$(77,843)	\$4,131,555

Financial Review

(26) Income Tax

a. The major components of income tax expense (benefit) for the years ended December 31, 2022 and 2021 were as follows:

	For the years ended December 31,	
	2022	2021
i. Income tax expense (benefit) recorded in profit or loss		
a. The major components of income tax expense (benefit) for the years ended December 31, 2022 and 2021 were as follows:		
i. Income tax expense (benefit) recorded in profit or loss		
Current income tax expense (benefit):		
Current income tax charge	\$16,334,130	\$5,530,942
Adjustments in respect of current income tax of prior periods	(585,941)	(150,260)
Deferred income tax expense (benefit):		
Deferred income tax related to origination and reversal of temporary differences	2,276,015	407,280
Deferred income tax related to recognition and derecognition of tax losses and unused tax credits	60,178	1,054,445
Adjustment of prior year's deferred income tax	8,611	(130,841)
Deferred income tax arising from write-down or reversal of write-down of deferred tax assets	(14,007)	(20,172)
Income tax expense recorded in profit or loss	<u>\$18,078,986</u>	<u>\$6,691,394</u>

ii. Deferred 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,	
	2022	2021
Remeasurements of defined benefit pension plans	\$(59,361)	\$39,495
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	(283,395)	(144,138)
Income tax related to items that will not be reclassified subsequently to profit or loss	<u>\$(342,756)</u>	<u>\$(104,643)</u>

(ii) Items that may be reclassified subsequently to profit or loss:

	For the years ended December 31,	
	2022	2021
Exchange differences on translation of foreign operations	\$750,060	\$20,782
Share of other comprehensive income (loss) of associates and joint ventures which may be reclassified subsequently to profit or loss	(20,687)	6,018
Income tax related to items that may be reclassified subsequently to profit or loss	<u>\$729,373</u>	<u>\$26,800</u>

iii. Income tax charged directly to equity

	For the years ended December 31,	
	2022	2021
Current income tax expense (benefit):		
Disposal of parent company's stock by subsidiary recognized as treasury stock transactions		\$-
Deferred income tax expense (benefit):		
Adjustments of changes in net assets of associates and joint ventures accounted for using equity method		(196)
Income tax charged directly to equity	<u>\$(196)</u>	<u>\$(203)</u>

b. A reconciliation between income tax expense (benefit) and income before tax at UMC's applicable tax rate were as follows:

	For the years ended December 31,	
	2022	2021
Income before tax	\$106,097,237	\$61,803,404
At UMC's statutory income tax rate	21,219,447	12,360,681
Adjustments in respect of current income tax of prior periods	(585,941)	(150,260)
Net changes in loss carry-forward and investment tax credits	(465,152)	(514,094)
Adjustment of deferred tax assets/liabilities for write-downs/reversals and different jurisdictional tax rates	(281,319)	183,123

	For the years ended	
	December 31,	2021
	2022	2021
Tax effect of non-taxable income and non-deductible expenses:		
Tax exempt income	\$(4,384,566)	\$(3,258,695)
Investment loss (gain)	2,533,508	(2,050,272)
Dividend income	(423,027)	(171,725)
Others	(340,745)	6,463
Effect of different tax rates applicable to UMC and its subsidiaries	605,929	116,174
Taxes withheld in other jurisdictions	35,979	43,443
Others	164,873	126,556
Income tax expense recorded in profit or loss	<u>\$18,078,986</u>	<u>\$6,691,394</u>
c. Significant components of deferred income tax assets and liabilities were as follows:		
	As of December 31,	
	2022	2021
Deferred income tax assets		
Depreciation	\$2,056,568	\$2,155,961
Loss carry-forward	94	62,367
Pension	569,193	770,847
Refund liabilities	138,617	140,861
Allowance for inventory valuation losses	507,621	433,630
Investment loss	299,538	267,518
Unrealized profit on intercompany sales	906,793	1,125,370
Others	572,945	439,439
Total deferred income tax assets	<u>5,051,369</u>	<u>5,395,993</u>
Deferred income tax liabilities		
Unrealized exchange gain	(534,541)	(580,191)
Depreciation	(70,133)	(78,792)
Investment gain	(2,459,065)	(793,982)
Bonds	(10,322)	(6,353)
Amortizable assets	(298,451)	(303,841)
Total deferred income tax liabilities	<u>(3,372,512)</u>	<u>(1,763,159)</u>
Net deferred income tax assets	<u>\$1,678,857</u>	<u>\$3,632,834</u>
d. Movement of deferred tax	For the years ended	
	December 31,	2021
	2022	2021
Balance as of January 1	\$3,632,834	\$5,201,252
Amounts recognized in profit or loss during the period	(2,330,797)	(1,310,712)
Amounts recognized in other comprehensive income (loss)	386,617	(77,843)
Amounts recognized in equity	(196)	-
Exchange adjustments	(9,601)	(179,863)
Balance as of December 31	<u>\$1,678,857</u>	<u>\$3,632,834</u>
e. The Company is subject to taxation in Taiwan and other foreign jurisdictions. As of December 31, 2022, income tax returns of UMC and its subsidiaries in Taiwan have been examined by the tax authorities through 2020, while in other foreign jurisdictions, relevant tax authorities have completed the examination through 2012.		
f. UMC's branch in Singapore obtained two tax incentives granted by the Singapore government for a period of five years from August 2020. The qualifying incomes are either tax-exempt or taxed at concessionary tax rate. The incentive period will end in July 2025.		
g. The information of the unused tax loss carry-forward for which no deferred income tax assets have been recognized were as follows:		
	As of December 31,	
	2022	2021
Expiry period		
1-5 years	\$35,263,925	\$38,562,420
6-10 years	1,995,256	2,730,567
Total	<u>\$37,259,181</u>	<u>\$41,292,987</u>
h. As of December 31, 2022 and 2021, deductible temporary differences for which no deferred income tax assets have been recognized amounted to NT\$3,001 million and NT\$4,433 million, respectively.		

(28) Reconciliation of Liabilities Arising from Financing Activities

For the year ended December 31, 2022:

Items	Non-cash changes			As of December 31, 2022
	As of January 1, 2022	Cash Flows	Foreign exchange	
Short-term loans	\$1,924,124	\$(1,965,684)	\$41,560	\$-
Long-term loans (current portion included)	36,624,907	(18,816,259)	1,470,694	19,279,342
Bonds payable (current portion included)	40,536,658	(13,305,050)	-	28,184,687
Guarantee deposits (current portion included)	14,369,769	14,984,941	1,402,291	30,757,001 (Note D)
Lease liabilities	5,068,754	(712,854)	153,406	5,737,095 (Note E)
Other financial liabilities (Note C)	20,966,209	-	306,902	21,449,487

For the year ended December 31, 2021:

Items	Non-cash changes			As of December 31, 2021
	As of January 1, 2021	Cash Flows	Foreign exchange	
Short-term loans	\$11,057,132	\$(8,974,216)	\$(158,792)	\$1,924,124
Long-term loans (current portion included)	33,066,106	4,088,537	(529,736)	36,624,907
Bonds payable (current portion included)	18,690,384	23,703,692	-	40,536,658 (Note B)
Guarantee deposits (current portion included)	235,992	14,219,408	(85,631)	14,369,769 (Note D)
Lease liabilities	5,576,864	(699,680)	(144,419)	5,068,754
Other financial liabilities (Note C)	20,746,624	-	(163,387)	20,966,209

Note A: Other non-cash changes mainly consisted of discount amortization measured by the effective interest method.

Note B: Please refer to Note 6(13) for the Company's exchangeable bonds.

Note C: Please refer to Note 9(6) for more details on other financial liabilities.

Note D: Guarantee deposits mainly consisted of deposits of capacity reservation.

Note E: Mainly due to the increase in land lease.

- i. As of December 31, 2022 and 2021, the taxable temporary differences of unrecognized deferred tax liabilities associated with investments in subsidiaries amounted to NT\$21,658 million and NT\$14,904 million, respectively.

(27) Earnings Per Share

- a. Earnings per share-basic

	For the years ended	
	December 31, 2022	2021
Net income attributable to the parent company	\$87,198,291	\$55,780,255
Weighted-average number of ordinary shares for basic earnings per share (thousand shares)	12,305,519	12,218,347
Earnings per share-basic (NTD)	\$7.09	\$4.57

- b. Earnings per share-diluted

	For the years ended	
	December 31, 2022	2021
Net income attributable to the parent company	\$87,198,291	\$55,780,255
Weighted-average number of ordinary shares for basic earnings per share (thousand shares)	12,305,519	12,218,347
Effect of dilution		
Restricted stocks for employees	156,098	159,478
Employees' compensation	238,242	80,243
Weighted-average number of ordinary shares after dilution (thousand shares)	12,699,859	12,458,068
Earnings per share-diluted (NTD)	\$6.87	\$4.48

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
UNIMICRON TECHNOLOGY CORP.	Associate
SILICON INTEGRATED SYSTEMS CORP.	The Company's director
PHOTONICS DNP MASK CORPORATION	Other related parties

(2) Significant Related Party Transactions

a. Operating transactions

Operating revenues

	For the years ended December 31,	
	2022	2021
Associates	\$5,744,098	\$2,778,544
Others	40,474	38,797
Total	<u>\$5,784,572</u>	<u>\$2,817,341</u>

Accounts receivable, net

	As of December 31,	
	2022	2021
Associates	\$529,525	\$555,064
Others	1,052	11,274
Total	<u>\$530,577</u>	<u>\$566,338</u>

The sales price to the above related parties was determined through mutual agreement in reference to market conditions. The collection periods for domestic sales to related parties were month-end 30 - 60 days, while the collection periods for overseas sales were month-end 30 - 60 days.

Refund liabilities (classified under other current liabilities)

	As of December 31,	
	2022	2021
Associates	\$1,545	\$1,841
Others	7	27
Total	<u>\$1,552</u>	<u>\$1,868</u>

b. Significant asset transactions

Acquisition of financial assets at fair value through profit or loss, noncurrent

For the year ended December 31, 2022: None.

	Trading Volume (In thousands of shares)	Transaction underlying	Purchase price
Associates	82	Stock of ARTERY TECHNOLOGY CORPORATION	\$13,929

Acquisition of intangible assets

	Purchase price	
	For the years ended December 31,	
	2022	2021
Associates	\$266,053	\$181,254

c. Others

Mask expenditure

	For the years ended December 31,	
	2022	2021
Others	\$2,581,409	\$1,861,438

Other payables of mask expenditure

	As of December 31,	
	2022	2021
Others	\$812,185	\$560,042

d. Key management personnel compensation

	For the years ended December 31,	
	2022	2021
Short-term employee benefits	\$2,047,118	\$562,117
Post-employment benefits	2,782	2,322
Share-based payment	719,786	1,035,401
Others	649	578
Total	<u>\$2,770,335</u>	<u>\$1,600,418</u>



9. SIGNIFICANT CONTINGENCIES AND UNRECOGNIZED CONTRACT COMMITMENTS

- (1) As of December 31, 2022, amounts available under unused letters of credit for importing machinery and equipment were NT\$1.2 billion.
- (2) As of December 31, 2022, the Company entrusted financial institutes to open performance guarantee, mainly related to the litigations and customs tax guarantee, amounting to NT\$2 billion.
- (3) The Company entered into several patent license agreements and development contracts of intellectual property for a total contract amount of approximately NT\$3.3 billion. As of December 31, 2022, the portion of royalties and development fees not yet recognized was NT\$1.1 billion.
- (4) The Company entered into several construction contracts for the expansion of its operations. As of December 31, 2022, these construction contracts amounted to approximately NT\$69.2 billion and the portion of the contracts not yet recognized was approximately NT\$42 billion.
- (5) The Company entered into several wafer-processing contracts with its customers. According to the contracts, the Company shall provide agreed production capacity with the customers.
- (6) 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. The Company obtained R.O.C. government authority's approval for the investment and invested RMB 8.3 billion in USCXM in instalments from January 2015 to September 2018, according to the agreement that the Company obtained the ability to exercise control. Furthermore, based on the agreement, UMC recognized a financial liability in other financial liabilities, current and other noncurrent liabilities-others, respectively for the purchase from the other investors of their investments in USCXM at their original investment cost plus interest totally amounting to RMB 4.9 billion, beginning from the seventh year (2022) following the last instalment 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.

 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
	2022	2021		
Refundable Deposits (Time deposit)	\$812,248	\$811,660	Customs	Customs duty guarantee
Refundable Deposits (Time deposit)	236,587	234,304	Science Park Bureau	Collateral for land lease
Refundable Deposits (Time deposit)	29,371	20,619	Science Park Bureau	Collateral for dormitory lease
Refundable Deposits (Time deposit)	64,950	-	National Property Administration, Ministry of Finance	Guarantee for the application of national non-public use land for development
Refundable Deposits (Time deposit)	8,118	-	Bureau of Land Administration, Tainan City Government	Guarantee for the application of national non-public use land for development
Refundable Deposits (Time deposit)	34,100	26,600	Liquefied Natural Gas Business Division, CPC Corporation, Taiwan	Energy resources guarantee
Refundable Deposits (Time deposit)	1,043,840	1,151,200	Bank of China and Agricultural Bank of China	Bank performance guarantee
Refundable Deposits (Time deposit)	459,750	-	CTBC Bank Singapore Branch	Collateral for letter of credit
Refundable Deposits (Bank deposit)	-	6,711	Shanghai Commercial Bank	Collateral for letter of credit
Buildings	4,828,597	5,014,814	Taiwan Cooperative Bank and Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Machinery and equipment	14,066,044	25,189,533	Taiwan Cooperative Bank, Mega International Commercial Bank, KGI Bank, First Commercial Bank, Shanghai Commercial Bank and Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Transportation equipment	592	1,802	Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Furniture and fixtures	46,823	161,604	Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Right-of-use assets	278,230	280,697	Secured Syndicated Loans from China Development Bank and 6 others	Collateral for long-term loans
Total	\$21,909,250	\$32,899,544		



On April 27, 2022, the Board of Directors of UMC approved an investment to increase capital of RMB 4.12 billion or equivalent US dollars (approximately US\$0.66 billion) in its Cayman Islands subsidiary, UNITED MICROCHIP CORPORATION, for its Samoa subsidiary, GE, to purchase the shares of USCXM from XIAMEN JINYUAN INDUSTRIAL DEVELOPMENT CO., LTD.; in addition, the Company's subsidiary, HEJIAN, plans to purchase shares of USCXM with RMB 0.74 billion or equivalent US dollars (approximately US\$0.12 billion) from FUJIAN ELECTRONICS & INFORMATION INDUSTRY ENTREPRENEURSHIP INVESTMENT LIMITED PARTNERSHIP. As a result, the total investment amount is RMB 4.9 billion. The transaction will be completed in three times from 2022 to 2025 at the ratio of 60%, 20% and 20%, respectively.

(7) 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") and of MICRON MEMORY TAIWAN CO., LTD.. On June 12, 2020, an adverse ruling issued by the District Court of Taichung in a suit alleged that UMC, two of its current employees and a former employee engaged in the misappropriation of trade secrets. UMC appealed against the sentence. On November 26, 2021, UMC and MICRON announced a settlement agreement between the two companies for all legal proceedings worldwide (the "Settlement Agreement"). Accordingly, MICRON submitted a motion to withdraw the case. On January 27, 2022, the Intellectual Property and Commercial Court announced its ruling of this case and UMC was sentenced to a fine of NT\$20 million, subject to a two-year term of probation.

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. In accordance with the Settlement Agreement, the court issued a dismissal of the case with prejudice in January 2022.

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 question, 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 approved withdrawal of one of the patent infringement actions on our motion while the other two actions are still on trial. In accordance with the Settlement Agreement, UMC submitted a motion to withdraw the case, and the motion is currently pending.

The amounts of aforementioned fine from ruling of the Intellectual Property and Commercial Court and the worldwide settlement between UMC and MICRON were recorded in non-operating other losses and have no material financial and operational effect on UMC's business for the years presented.

#### 10. SIGNIFICANT DISASTER LOSS

None.

#### 11. SIGNIFICANT SUBSEQUENT EVENTS

None.

#### 12. OTHERS

##### (1) Categories of financial instruments

	As of December 31,	
	2022	2021
<b>Financial Assets</b>		
Financial assets at fair value through profit or loss	\$18,490,569	\$20,446,295
Financial assets at fair value through other comprehensive income	15,189,600	19,835,665
Financial assets measured at amortized cost		
Cash and cash equivalents (cash on hand excluded)	173,812,754	132,616,447
Receivables	38,783,086	36,047,680
Refundable deposits	2,749,691	2,358,549
Other financial assets	869,308	28,863,470
<b>Total</b>	<b>\$249,895,008</b>	<b>\$240,168,106</b>
<b>Financial Liabilities</b>		
Financial liabilities at fair value through profit or loss	\$438,397	\$2,380,599
Financial liabilities measured at amortized cost		
Short-term loans	-	1,924,124
Payables	58,893,871	37,657,300
Guarantee deposits (current portion included)	30,757,001	14,369,769
Bonds payable (current portion included)	28,184,687	40,536,658
Long-term loans (current portion included)	19,279,342	36,624,907
Lease liabilities	5,737,095	5,068,754
Other financial liabilities	21,449,487	20,966,209
<b>Total</b>	<b>\$164,739,880</b>	<b>\$159,528,320</b>

Financial Review

**(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. Furthermore, as net investments in foreign subsidiaries are for strategic purposes, they are not hedged by the Company.

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, 2022 and 2021 decreases/increases by NT\$1,305 million and NT\$1,104 million, respectively. When RMB strengthens/weakens against USD by 10%, the profit for the years ended December 31, 2022 and 2021 decreases/increases by NT\$572 million and increases/decreases by NT\$375 million, respectively. When JPY strengthens/weakens against USD by 10%, the profit for the years ended December 31, 2022 and 2021 decreases/increases by NT\$538 million and NT\$434 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(11), 6(13) and 6(14) 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, 2022 and 2021 to decrease/increase by NT\$19 million and NT\$39 million, respectively.

**Equity price risk**

The Company's listed and unlisted equity securities and exchange right of the exchangeable bonds issued 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, while exchange right of the exchangeable bonds issued is classified as financial liabilities at fair value through profit or loss as it does not satisfy the definition of an equity component.

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, 2022 and 2021 by NT\$285 million and NT\$393 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, 2022 and 2021 by NT\$579 million and NT\$867 million, respectively.

Please refer to Note 12(7) for sensitivity analysis information of other equity instruments or derivatives that are linked to such equity instruments whose fair value measurement is categorized under Level 3.

**(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, 2022 and 2021, accounts receivable from the top ten customers represent 56% and 60% 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, 2022				Total
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	
Non-derivative financial liabilities					
Payables	\$58,767,584	\$-	\$-	\$-	\$58,767,584
Guarantee deposits	238,416	3,867,087	169,419	26,482,079	30,757,001
Bonds payable (Note)	322,155	8,742,481	10,593,656	4,151,128	23,809,420
Long-term loans	3,246,153	8,425,744	7,798,280	3,031,293	22,501,470
Lease liabilities	658,092	1,222,822	1,207,385	4,299,914	7,388,213
Other financial liabilities	17,233,129	4,308,513	-	-	21,541,642
Total	\$80,465,529	\$26,566,647	\$19,768,740	\$37,964,414	\$164,765,330

	As of December 31, 2021				Total
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	
Non-derivative financial liabilities					
Short-term loans	\$1,939,109	\$-	\$-	\$-	\$1,939,109
Payables	37,455,640	-	-	-	37,455,640
Guarantee deposits	108,740	3,432,749	-	10,828,280	14,369,769
Bonds payable (Note)	8,612,255	8,869,431	10,656,506	4,178,008	32,316,200
Long-term loans	21,084,795	2,543,611	11,021,076	5,976,645	40,626,127
Lease liabilities	688,613	1,198,528	1,050,786	2,841,010	5,778,937
Other financial liabilities	12,738,246	8,492,466	-	-	21,230,712
Total	\$82,627,398	\$24,536,785	\$22,728,368	\$23,823,943	\$153,716,494

Note: UMC issued unsecured exchangeable bonds where the bondholders may exchange the bonds at any time on or after October 8, 2021 and prior to June 27, 2026 into NOVATEK common shares which UMC holds and accounts for as equity instruments investments measured at fair value through other comprehensive income. The balances of equity instruments investments measured at fair value through other comprehensive income were NT\$3,213 million and NT\$8,482 million as of December 31, 2022 and 2021, respectively. All or any portion of the bonds will be redeemable at put price at the option of bondholders on July 7, 2024 at 98.14% of the principal amount.

(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, 2022 and 2021

None.

(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, 2022			Total
	Level 1	Level 2	Level 3	
<b>Financial assets:</b>				
Financial assets at fair value through profit or loss, current	\$669,444	\$-	\$36,474	\$705,918
Financial assets at fair value through profit or loss, noncurrent	6,626,088	468,164	10,690,399	17,784,651
Financial assets at fair value through other comprehensive income, current	3,213,057	-	-	3,213,057
Financial assets at fair value through other comprehensive income, noncurrent	8,366,276	-	3,610,267	11,976,543
<b>Financial liabilities:</b>				
Financial liabilities at fair value through profit or loss, current	-	-	438,397	438,397

As of December 31, 2021

	As of December 31, 2021			Total
	Level 1	Level 2	Level 3	
<b>Financial assets:</b>				
Financial assets at fair value through profit or loss, current	\$761,320	\$-	\$183,701	\$945,021
Financial assets at fair value through profit or loss, noncurrent	9,323,064	497,751	9,680,459	19,501,274
Financial assets at fair value through other comprehensive income, current	8,482,334	-	-	8,482,334
Financial assets at fair value through other comprehensive income, noncurrent	8,849,869	-	2,503,462	11,353,331
<b>Financial liabilities:</b>				
Financial liabilities at fair value through profit or loss, current	-	-	2,380,599	2,380,599

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, 2022 and 2021, there were no significant transfers between Level 1 and Level 2 fair value measurements.

Reconciliation 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	Total	Common stock	Preferred stock
As of January 1, 2022	\$3,584,326	\$2,580,246	\$3,464,652	\$234,936	\$9,864,160	\$2,351,603	\$151,859
Recognized in profit (loss)	(150,786)	(328,602)	519,572	(53,225)	(13,041)	-	-
Recognized in other comprehensive income (loss)	-	-	-	-	-	1,076,117	30,688
Acquisition	192,258	485,256	625,542	-	1,303,056	-	-
Disposal	(186,579)	(15,782)	(194,572)	(149,850)	(546,783)	-	-
Return of capital	-	-	(26,672)	-	(26,672)	-	-
Transfer out of Level 3	(326,577)	-	-	-	(326,577)	-	-
Exchange effect	86,166	144,140	237,811	4,613	472,750	-	-
As of December 31, 2022	\$3,198,808	\$2,865,258	\$4,626,333	\$36,474	\$10,726,873	\$3,427,720	\$182,547

	Financial liabilities at fair value through profit or loss
As of January 1, 2022	\$2,380,599
Recognized in profit (loss)	(1,433,405)
Derecognition	(508,797)
As of December 31, 2022	\$438,397

	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	Total	Common stock	Preferred stock
As of January 1, 2021	\$3,241,478	\$3,279,003	\$2,314,016	\$216,330	\$9,050,827	\$1,297,627	\$170,145
Recognized in profit (loss)	278,951	(818,848)	1,061,793	(6,895)	515,001	-	-
Recognized in other comprehensive income (loss)	-	-	-	-	-	1,053,976	(18,286)
Acquisition	695,146	829,751	201,649	111,094	1,837,640	-	-
Disposal	(447,915)	(660,904)	-	(83,814)	(1,192,633)	-	-
Return of capital	(252)	-	(69,084)	-	(69,336)	-	-
Transfer out of Level 3	(161,564)	-	-	-	(161,564)	-	-
Exchange effect	(21,518)	(48,756)	(43,722)	(1,779)	(115,775)	-	-
As of December 31, 2021	\$3,584,326	\$2,580,246	\$3,464,652	\$234,936	\$9,864,160	\$2,351,603	\$151,859

	Financial liabilities at fair value through profit or loss
As of January 1, 2021	\$-
Recognized in profit (loss)	360,494
Issuance	2,020,105
As of December 31, 2021	\$2,380,599

The total profit (loss) of NT\$(74) million and NT\$330 million for the years ended December 31, 2022 and 2021, were included in profit or loss that is attributable to the change in unrealized gains or losses relating to those financial assets without quoted market prices held at the end of the reporting period.

The total profit (loss) of NT\$829 million and NT\$(360) million for the years ended December 31, 2022 and 2021, were included in profit or loss that is attributable to the change in unrealized gains or losses relating to those financial liabilities without quoted market prices held at the end of the reporting period.

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 follows:

Category	As of December 31, 2022			Sensitivity analysis of interrelationship between inputs and fair value
	Valuation technique	Significant unobservable inputs	Quantitative information	
Unlisted stock	Market Approach	Discount for lack of marketability	0% - 50%	A change of 5% in the degree of lack of marketability, the lower the estimated fair value is determined. Company's profit (loss) for the year ended December 31, 2022 by NT\$273 million and NT\$198 million, respectively, and decrease/increase the Company's other comprehensive income (loss) for the year ended December 31, 2022 by NT\$248 million.
Embedded derivatives in exchangeable bonds	Binomial tree valuation model	Volatility	36.46%	The higher the volatility, the higher the estimated fair value is determined. A change of 5% in the volatility could decrease/increase the Company's profit (loss) for the year ended December 31, 2022 by NT\$77 million and NT\$67 million, respectively.



As of December 31, 2022

Category	Valuation technique	Significant unobservable inputs	Quantitative information	Interrelationship between inputs and fair value	Sensitivity analysis of 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 marketability of the aforementioned fair values of unlisted stocks could decrease/increase the Company's profit (loss) for the year ended December 31, 2021 by NT\$281 million and NT\$242 million, respectively, and decrease/increase the Company's other comprehensive income (loss) for the year ended December 31, 2021 by NT\$186 million.
Embedded derivatives in exchangeable bonds	Binomial tree valuation model	Volatility	45.84%	The higher the volatility, the higher the estimated fair value is determined.	A change of 5% in the volatility could decrease/increase the Company's profit (loss) for the year ended December 31, 2021 by NT\$283 million and NT\$278 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 cash and cash equivalents, receivables, refundable deposits, other financial assets, short-term loans, payables and guarantee deposits approximate their carrying amount.

Fair value measurements during reporting period using

Items	Fair value	Level 1	Level 2	Level 3	Carrying amount
Bonds payables (current portion included)	\$28,346,985	\$22,916,330	\$5,430,655	\$-	\$28,184,687
Long-term loans (current portion included)	19,279,342	-	19,279,342	-	19,279,342

As of December 31, 2021

Items	Fair value	Level 1	Level 2	Level 3	Carrying amount
Bonds payables (current portion included)	\$41,947,014	\$31,442,469	\$10,504,545	\$-	\$40,536,658
Long-term loans (current portion included)	36,624,907	-	36,624,907	-	36,624,907

(8) Significant financial assets and liabilities denominated in foreign currencies

The following information was summarized by the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

Financial Assets	As of December 31,				
	2022		2021		
	Foreign Currency (thousand)	Exchange Rate	Foreign Currency (thousand)	Exchange Rate	
Monetary items					
USD:NTD	\$1,548,069	30.65	\$47,448,305	\$979,780	27.62
EUR:NTD	72,598	32.54	2,362,354	1,624	31.13
JPY:NTD	6,013,172	0.2305	1,386,036	2,766,458	0.2385
RMB:NTD	1,656	4.384	7,261	1,647	4.320
SGD:USD	64,822	0.7439	1,477,979	61,404	0.7375
USD:RMB	299,074	6.9646	9,131,581	510,165	6.3757
USD:JPY	230,511	132.70	7,050,718	166,107	115.02
					4,556,692

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, 2022 and 2021 were as follows:

	As of December 31,	
	2022	2021
Total liabilities	\$197,601,153	\$183,223,887
Less: Cash and cash equivalents	(173,818,777)	(132,622,131)
Net debt	23,782,376	50,601,756
Total equity	335,450,939	281,202,884
Total capital	\$359,233,315	\$331,804,640
Debt to capital ratios	6.62%	15.25%

### 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:

- Financing provided to others for the year ended December 31, 2022: Please refer to Attachment 2.
- Endorsement/Guarantee provided to others for the year ended December 31, 2022: Please refer to Attachment 3.
- Securities held as of December 31, 2022 (excluding subsidiaries, associates and joint venture): Please refer to Attachment 4.
- 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, 2022: Please refer to 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, 2022: Please refer to Attachment 6.

	As of December 31,					
	2022		2021			
	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)	Exchange Rate		
<u>Financial Assets</u>						
<u>Non-Monetary items</u>						
USD:NTD	\$224,599	30.65	\$6,883,952	\$190,267	27.62	\$5,255,170
<u>Financial Liabilities</u>						
<u>Monetary items</u>						
USD:NTD	1,118,779	30.75	34,402,440	578,045	27.72	16,023,407
EUR:NTD	73,542	32.94	2,422,478	4,887	31.53	154,099
JPY:NTD	6,543,263	0.2346	1,535,050	2,851,383	0.2426	691,856
RMB:NTD (Note C)	4,838,233	4.434	21,452,727	4,798,085	4.370	20,967,632
SGD:USD	207,996	0.7473	4,779,645	102,625	0.7413	2,108,815
USD:RMB	113,269	6.9646	3,497,875	645,684	6.3757	17,989,938
USD:JPY	52,396	132.70	1,631,151	17,916	115.02	499,929

Note A: The foreign currency transactions mentioned above are expressed in terms of the amount before elimination.

Note B: Please refer to the consolidated statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss. Since there were varieties of foreign currency transactions and functional currencies within the subsidiaries of the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

Note C: Please refer to Note 9(6) for more details on other financial liabilities.

(9) Significant intercompany transactions among consolidated entities for the years ended December 31, 2022 and 2021 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 shareholders' value. The Company also ensures its ability to operate continuously to provide returns to shareholders 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 shareholders, return capital to shareholders, issue new shares or dispose assets to redeem liabilities.

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, 2022: 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, 2022: 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, 2022: Please refer to Attachment 9.

i. Names, locations and related information of investees as of December 31, 2022 (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.

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, 3, 8 and 9.

(3) Information of major shareholders as of December 31, 2022: Please refer to Attachment 12.

14. OPERATING SEGMENT INFORMATION

(1) The Company determined its operating segments based on business activities with discrete financial information regularly reported through the Company's internal reporting protocols to the Company's chief operating decision maker. The Company only has wafer fabrication operating segment as the single reporting segment. The primary operating activity of the wafer fabrication segment is the manufacture of chips to the design specifications of our customers by using our own proprietary processes and techniques. There was no material difference between the accounting policies of the operating segment and those described in Note 4. Please refer to the Company's consolidated financial statements for the related segment revenue and operating results.

(2) Geographic non-current assets information

	As of December 31,	
	2022	2021
Taiwan	\$130,812,383	\$81,505,018
Singapore	29,080,766	10,610,974
China (includes Hong Kong)	37,213,538	48,667,135
Japan	10,736,562	10,010,255
USA	2,818	24,116
Europe	17,256	18,210
Others	564	2,489
Total	\$207,863,887	\$150,838,197

Non-current assets include property, plant and equipment, right-of-use assets, intangible assets, prepayment for equipment and other noncurrent assets-others.

(3) Major customers

Individual customers accounting for at least 10% of operating revenues for the years ended December 31, 2022 and 2021 were as follows:

	For the years ended	
	December 31, 2022	December 31, 2021
Customer A	\$24,061,849	\$21,935,208



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, 2022

No. (Note 1)	Related party	Counterparty	Relationship with the Company (Note 2)	Transactions		
				Account	Collection periods (Note 3)	Percentage of consolidated operating revenues or consolidated total assets (Note 4)
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Sales	Net 60 days	2%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Accounts receivable	-	2%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Sales	Net 30 days	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Accounts receivable	-	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	1	Sales	Net 30 days	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	1	Accounts receivable	-	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR JAPAN CO., LTD.	1	Sales	Net 60 days	0%
1	UNITED SEMICONDUCTOR JAPAN CO., LTD.	UNITED SEMICONDUCTOR JAPAN CO., LTD.	3	Accounts receivable	-	0%
1	UNITED SEMICONDUCTOR JAPAN CO., LTD.	UMC GROUP (USA)	3	Sales	Net 60 days	2%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	-	0%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Sales	Net 60 days	1%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UNITED MICROELECTRONICS CORPORATION	2	Accounts receivable	-	0%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UNITED MICROELECTRONICS CORPORATION	2	Sales	Net 30 days - Net 45 days	0%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	3	Accounts receivable	-	0%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	3	Sales	Month-end 30 days	0%
3	WAVETEK MICROELECTRONICS CORPORATION	UMC GROUP (USA)	3	Accounts receivable	-	0%
3	WAVETEK MICROELECTRONICS CORPORATION	UMC GROUP (USA)	3	Sales	Net 60 days	0%
3	WAVETEK MICROELECTRONICS CORPORATION	UMC GROUP (USA)	3	Accounts receivable	-	0%
3	WAVETEK MICROELECTRONICS CORPORATION	UNITED MICROELECTRONICS CORPORATION	2	Sales	Month-end 30 days	0%
4	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Sales	Net 60 days	0%
4	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	-	0%
4	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	3	Sales	Net 60 days	0%
4	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	3	Accounts receivable	-	0%

For the year ended December 31, 2022

No. (Note 1)	Related party	Counterparty	Relationship with the Company (Note 2)	Transactions		
				Account	Collection periods (Note 3)	Percentage of consolidated operating revenues or consolidated total assets (Note 4)
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Sales	Net 60 days	23%
0	UNITED MICROELECTRONICS CORPORATION	UMC GROUP (USA)	1	Accounts receivable	-	1%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Sales	Net 30 days	1%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	1	Accounts receivable	-	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	1	Sales	Net 30 days	0%
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	1	Accounts receivable	-	0%
1	UNITED SEMICONDUCTOR JAPAN CO., LTD.	UMC GROUP (USA)	3	Sales	Net 60 days	1%
1	UNITED SEMICONDUCTOR JAPAN CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	-	0%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Sales	Net 60 days	1%
2	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	UMC GROUP (USA)	3	Accounts receivable	-	0%
3	WAVETEK MICROELECTRONICS CORPORATION	UMC GROUP (USA)	3	Sales	Net 60 days	0%
3	WAVETEK MICROELECTRONICS CORPORATION	UMC GROUP (USA)	3	Accounts receivable	-	0%
4	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UMC GROUP (USA)	3	Sales	Net 60 days	0%
4	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	3	Accounts receivable	-	0%

Note 1: UMC and its subsidiaries are coded as follows:

1. UMC is coded "U".

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 balances sheet items are based on each item's balance at period-end.

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, 2022)  
 (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	WAVE TEK MICROELECTRONICS CORPORATION	Other receivables - related parties	Yes	\$500,000	\$-	\$-	-	The need for short-term financing	\$-	Business turnover	\$-	None	\$-	\$33,510,726	\$134,042,904

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.

ATTACHMENT 3 (Endorsement/Guarantee provided to others for the year ended December 31, 2022)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

No. (Note 1)	Receiving party		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 3.05%	Limit of total guarantee/endorsement amount (Note 4) \$150,798,267
	Endorser/Guarantor	Company name							
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	\$150,798,267	\$17,875,700	\$10,217,964 (Note 5)	\$7,878,368 (Note 5)	\$-	3.05%	\$150,798,267

**HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.**

No. (Note 1)	Receiving party		Limit of guarantee/endorsement amount for receiving party (Note 6)	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 9.52%	Limit of total guarantee/endorsement amount (Note 6) \$14,073,267
	Endorser/Guarantor	Company name							
1	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	\$14,073,267	\$7,547,231	\$2,976,153	\$2,407,152 (Note 5)	\$-	9.52%	\$14,073,267

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 above-mentioned 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, 2022.

Note 5: Total endorsement amount is up to USD 30 million and CNY 2.12 billion. As of December 31, 2022, actual amount provided was NTD\$7.88 billion.

Note 6: Limit of total endorsed/guaranteed amount shall not exceed 45% of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2022.

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, 2022.

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, 2022) (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, 2022			Shares as collateral (thousand)
				Units (thousand) bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Fund	MILLERFUL NO.1 REAL ESTATE INVESTMENT TRUST	-	Financial assets at fair value through profit or loss, current	22,174	\$229,501	1.34	\$229,501
Stock	PIXART IMAGING, INC.	-	Financial assets at fair value through profit or loss, current	1,600	154,240	1.09	154,240
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, current	2,675	96,835	0.22	96,835
Fund	RED ARC GLOBAL INVESTMENTS (IRELAND) ICAV TERM LIQUIDITY FUND	-	Financial assets at fair value through profit or loss, current	57	188,868	0.24	188,868
Fund	TGVEST ASIA PARTNERS II(TAIWAN), L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	182,602	18.00	182,602
Stock	PIXTECH, INC.	-	Financial assets at fair value through profit or loss, noncurrent	9,883	-	17.63	-
Stock	UNITED FU SHEN CHEN TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	17,511	-	15.75	-
Stock	HOLTEK SEMICONDUCTOR INC.	-	Financial assets at fair value through profit or loss, noncurrent	22,144	1,510,238	9.79	1,510,238
Fund	GRANDFULL CONVERGENCE INNOVATION GROWTH FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	176,943	9.38	176,943
Stock	UNITED INDUSTRIAL GASES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	16,680	1,431,868	7.66	1,431,868
Stock	OCTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,530	331,097	6.29	331,097
Stock	AMIC TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,412	-	4.71	-
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	12,521	326,791	4.20	326,791
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	20,483	741,474	1.67	741,474
Stock	ENNOSTAR INC.	-	Financial assets at fair value through profit or loss, noncurrent	5,357	239,748	0.71	239,748
Stock	PROMOS TECHNOLOGIES INC.	-	Financial assets at fair value through profit or loss, noncurrent	324	-	0.72	-
Stock-Preferred stock	TONBU, INC.	-	Financial assets at fair value through profit or loss, noncurrent	938	-	-	-
Stock-Preferred stock	AETAS TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,166	-	-	-
Stock-Preferred stock	TA SHEEF GOLF & COUNTRY CLUB	-	Financial assets at fair value through profit or loss, noncurrent	0	18,000	-	18,000
Stock	NOVATEK MICROELECTRONICS CORP.	-	Financial assets at fair value through other comprehensive income, current	10,184	3,213,057	1.67	3,213,057
Stock	SILICON INTEGRATED SYSTEMS CORP.	The Company's director	Financial assets at fair value through other comprehensive income, noncurrent	142,535	2,316,197	19.02	2,316,197
Stock	UNIMICRON HOLDING LIMITED	Associate	Financial assets at fair value through other comprehensive income, noncurrent	20,000	2,847,385	10.74	2,847,385
Stock	ITE TECH, INC.	-	Financial assets at fair value through other comprehensive income, noncurrent	13,960	1,023,266	8.67	1,023,266
Stock	CHIPBOND TECHNOLOGY CORPORATION	-	Financial assets at fair value through other comprehensive income, noncurrent	53,164	3,051,603	7.20	3,051,603
Stock	NOVATEK MICROELECTRONICS CORP.	-	Financial assets at fair value through other comprehensive income, noncurrent	6,261	1,975,210	1.03	1,975,210
Stock-Preferred stock	MITC HOLDINGS PTE. LTD.	Associate	Financial assets at fair value through other comprehensive income, noncurrent	12,000	182,547	-	182,547

ATTACHMENT 4 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**FORTUNE VENTURE CAPITAL CORP.**

		December 31, 2022					Shares as collateral (thousand)
Type of securities	Name of securities	Relationship	Financial statement account	Units (thousand)/ bonds/ shares (thousand)	Carrying amount \$20,000	Percentage of ownership (%)	Fair value/ Net assets value
Bonds	CRYSTALWISE TECHNOLOGY INC.	-	Financial assets measured at amortized cost, current	20	-	-	N/A
Convertible bonds	GEAR RADIO LTD.	-	Financial assets at fair value through profit or loss, current	-	30,650	-	30,650
Stock	DARCHUN VENTURE CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,514	2,438	19.65	2,438
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	90,449	14.33	90,449
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,500	28,150	10.23	28,150
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	10,719	83,606	9.12	83,606
Stock	EXCELSIUS MEDICAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,500	-	7.50	-
Stock	WIN WIN PRECISION TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,751	112,539	6.80	112,539
Stock	TAIWAN REDEYE BIOMEDIAL INC.	-	Financial assets at fair value through profit or loss, noncurrent	743	5,475	6.46	5,475
Stock	LICO TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	6,609	-	5.32	-
Stock	HYE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,466	54,535	4.88	54,535
Stock	AMPAK TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,000	213,300	4.53	213,300
Stock	EMPASS TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	374	6,621	4.48	6,621
Stock	MERIDIGEN BIOTECH CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,838	-	4.20	-
Stock	TAIWAN AULISA MEDICAL DEVICES TECHNOLOGIES, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,114	11,777	4.01	11,777
Stock	CENTERA PHOTONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,332	13,321	3.43	13,321
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	10,059	262,534	3.37	262,534
Stock	SOLID STATE SYSTEM CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,400	42,480	3.21	42,480
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,416	135,797	3.11	135,797
Stock	UHT UNITECH COMPANY LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,500	18,825	3.01	18,825
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	223,185	2.96	223,185
Stock	BRIGHT SHELAND INTERNATIONAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	36,840	2.87	36,840
Stock	TAIWAN SEMICONDUCTOR CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,741	450,164	2.56	450,164
Stock	CHENFENG OPTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2,214	68,643	2.36	68,643
Fund	VERTEX V (C.I.) FUND L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	177,364	2.07	177,364

ATTACHMENT 4 (Securities held as of December 31, 2022) (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, 2022			Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	
Stock	TERASILIC CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	600	\$8,424	2.05	\$8,424
Stock	CHIPBOND TECHNOLOGY CORPORATION	-	Financial assets at fair value through profit or loss, noncurrent	13,989	802,940	1.89	802,940
Stock	FORMOSA PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,005	104,461	1.76	104,461
Stock	YUEN FOONG YU CONSUMER PRODUCTS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,000	139,800	1.50	139,800
Stock	ACER E-ENABLING SERVICE BUSINESS INC.	-	Financial assets at fair value through profit or loss, noncurrent	550	74,800	1.33	74,800
Fund	VERTEX VI FUND L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	47,866	1.30	47,866
Stock	M3 TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	440	40,964	1.08	40,964
Stock	CRYSTALWISE TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	444	4,570	1.01	4,570
Stock	CUBTEK INC.	-	Financial assets at fair value through profit or loss, noncurrent	850	41,607	0.93	41,607
Stock	POWERTEC ELECTROCHEMICAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	9,930	-	0.70	-
Stock	PRENETICS GLOBAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	736	45,117	0.66	45,117
Stock	ROARING SUCCESS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	317	3,989	0.64	3,989
Stock	CHITEC TECHNOLOGY CORP., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	217	9,192	0.64	9,192
Stock	UNICTRON TECHNOLOGIES CORP.	-	Financial assets at fair value through profit or loss, noncurrent	224	14,806	0.47	14,806
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	847	19,013	0.46	19,013
Stock	EVERGREEN AVIATION TECHNOLOGIES CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,600	130,720	0.45	130,720
Stock	AIROHA TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	400	213,600	0.27	213,600
Stock	CHANG WAH TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,179	64,725	0.23	64,725
Stock	SOLAR APPLIED MATERIALS TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,173	37,599	0.20	37,599
Stock	WALTOP INTERNATIONAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	5	-	0.15	-
Stock	SHINFOX ENERGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	66	5,603	0.03	5,603
Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	21	10	0.02	10
Stock-Preferred Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	311	1,505	-	1,505
Stock-Preferred Stock	FLOODIA CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2	-	-	-
Stock-Preferred Stock	EJOULE INTERNATIONAL LIMITED	-	Financial assets at fair value through profit or loss, noncurrent	23,909	231,194	-	231,194
Stock-Preferred Stock	ACEPODIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,055	46,313	-	46,313

ATTACHMENT 4 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**FORTUNE VENTURE CAPITAL CORP.**

		December 31, 2022					Shares as collateral (thousand)
Type of securities	Name of securities	Relationship	Financial assets at fair value through profit or loss, noncurrent	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value
Stock-Preferred Stock	BRAVOTEK CORP.	-	Financial assets at fair value through profit or loss, noncurrent	3,050	\$99,638	-	\$99,638
Stock-Preferred Stock	GEAR RADIO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,400	14,904	-	14,904
Stock-Preferred Stock	SONATUS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	897	119,985	-	119,985
Stock-Preferred Stock	HAHOW INC.	-	Financial assets at fair value through profit or loss, noncurrent	151,217	122,600	-	122,600
Stock-Preferred Stock	TAISHIN FINANCIAL HOLDING CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,305	56,681	-	56,681
Convertible bonds	BRIGHT SHELAND INTERNATIONAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	170	16,371	-	16,371
Convertible bonds	PHISON ELECTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,140	110,580	-	110,580
Convertible bonds	EPISIL-PRECISION INC.	-	Financial assets at fair value through profit or loss, noncurrent	50	4,800	-	4,800
Convertible bonds	ELITE MATERIAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	300	29,460	-	29,460
Convertible bonds	GIANT MANUFACTURING CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	100	9,630	-	9,630
Convertible bonds	GENESYS LOGIC, INC.	-	Financial assets at fair value through profit or loss, noncurrent	20	2,040	-	2,040
Convertible bonds	CHUNG HWA CHEMICAL INDUSTRIAL WORKS, LTD.	-	Financial assets at fair value through profit or loss, noncurrent	20	2,020	-	2,020
Stock	SHIN-ETSU HANDOTAI TAIWAN CO., LTD.	-	Financial assets at fair value through other comprehensive income, noncurrent	10,500	580,335	7.00	580,335

**TLC CAPITAL CO., LTD.**

		December 31, 2022					Shares as collateral (thousand)
Type of securities	Name of securities	Relationship	Financial assets at fair value through profit or loss, noncurrent	Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value
Fund	EVERYI CAPITAL ASIA FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	\$252,478	18.18	\$252,478
Stock	BEAUTY ESSENTIALS INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	150,500	129,159	13.99	129,159
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	13	379,653	13.16	379,653
Stock	ARTERY TECHNOLOGY CORP.	Associate	Financial assets at fair value through profit or loss, noncurrent	5,112	178,460	9.99	178,460
Fund	EVERYI CAPITAL ASIA FUND II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	133,599	7.14	133,599
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	13,512	4.91	13,512
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	240,460	4.24	240,460
Stock	CHENFENG OPTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	3,321	102,964	3.53	102,964
Stock	WELLYSUN INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	13,690	2.20	13,690
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,387	10,817	1.18	10,817



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(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**TLC CAPITAL CO., LTD.**

Type of securities	Name of securities	Relationship	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	December 31, 2022		Shares as collateral (thousand)		
					Units (thousand)/ bonds/ shares (thousand)	Carrying amount		Percentage of ownership (%)	Fair value/ Net assets value
Stock	PLAYNITRIDE INC.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	1,070	\$106,583	1.00	\$106,583	None
Stock	HANDA PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	1,009	124,605	0.78	124,605	None
Stock	SIMPLO TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	1,422	405,408	0.77	405,408	None
Stock	TXC CORP.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	1,978	163,580	0.64	163,580	None
Stock	POWTEC ELECTROCHEMICAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	6,470	-	0.46	-	None
Stock	YUEN FOONG YU CONSUMER PRODUCTS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	600	20,970	0.22	20,970	None
Stock	EVERGREEN STEEL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	536	27,658	0.13	27,658	None
Convertible bonds	ALL COSMOS BIO-TECH HOLDING CORP.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	200	18,990	-	18,990	None
Capital-Preferred stock	CHIPBETTER MICROELECTRONICS INC.(formerly GUANGXI CHIPBETTER MICROELECTRONICS INC.)	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	672	48,498	-	48,498	None
Capital-Preferred stock	CANAANTEK CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	190	66,992	-	66,992	None
Capital-Preferred stock	HEFEI TBSTEST TECHNOLOGIES CO., LTD	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	168	29,573	-	29,573	None
Capital-Preferred stock	LINSI MICROELECTRONICS (SHENZHEN) CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	459	41,727	-	41,727	None
Capital-Preferred stock	WUHAN JIMU INTELLIGENT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	41	27,020	-	27,020	None
Capital-Preferred stock	ZHEJIANG SAXUM SEMICONDUCTOR TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	280	34,005	-	34,005	None
Capital-Preferred stock	NINGBO JSAB SEMICONDUCTOR CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	115	37,736	-	37,736	None
Capital-Preferred stock	MIZ OPTOELECTRONIC TECHNOLOGY (SHANGHAI) CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	118	26,304	-	26,304	None
Stock-Preferred stock	YOUJIA GROUP LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	2,685	438	-	438	None
Stock-Preferred stock	AL07 LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	2,377	-	-	-	None
Stock-Preferred stock	ADWO MEDIA HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	5,332	-	-	-	None
Stock-Preferred stock	IMO, INC.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	8,519	-	-	-	None
Stock-Preferred stock	GAME VIDEO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	279	-	-	-	None
Stock-Preferred stock	EJOULE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	50,767	543,213	-	543,213	None
Stock-Preferred stock	TURNING POINT LASERS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	2,000	34,606	-	34,606	None
Stock-Preferred stock	SILC TECHNOLOGIES, INC.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	2,393	64,970	-	64,970	None
Stock-Preferred stock	SINO APPLIED TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	855	13,792	-	13,792	None
Stock-Preferred stock	RAMON SPACE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	249	47,184	-	47,184	None
Stock-Preferred stock	XMEMS LABS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	Financial statement account	4,494	121,113	-	121,113	None

ATTACHMENT 4 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UMC CAPITAL CORP.**

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2022		Percentage of ownership (%)	Fair value/ Net assets value	Shares as collateral (thousand)
				Units (thousand)/ bonds/ shares (thousand)	Carrying amount			
Convertible bonds	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, current	- USD	190	- USD	190	None
Capital	TRANSLINK MANAGEMENT III, L.L.C.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,812	14.33 USD	2,812	None
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	21,212	11.47 USD	21,212	None
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	21,845	8.87 USD	21,845	None
Fund	TRANSLINK CAPITAL PARTNERS V, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,862	8.78 USD	2,862	None
Stock	OCTTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	5,594 USD	13,340	7.76 USD	13,340	None
Stock	ALL-STARS SPIV LTD.	-	Financial assets at fair value through profit or loss, noncurrent	7 USD	6,769	5.03 USD	6,769	None
Fund	TRANSLINK CAPITAL PARTNERS II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	4,679	4.53 USD	4,679	None
Stock	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	454	-	4.43	-	None
Fund	GROVE VENTURES II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,784	3.25 USD	2,784	None
Fund	GROVE VENTURES III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	386	2.19 USD	386	None
Fund	SIERRA VENTURES XI, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	16,793	1.76 USD	16,793	None
Fund	STORM VENTURES FUND V, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	10,527	1.69 USD	10,527	None
Stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	237 USD	15	1.39 USD	15	None
Fund	SIERRA VENTURES XII, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	3,660	1.38 USD	3,660	None
Stock	NEUROBLADE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	374 USD	899	0.91 USD	899	None
Stock	APIER GROUP INC.	-	Financial assets at fair value through profit or loss, noncurrent	320 USD	3,270	0.32 USD	3,270	None
Stock-Preferred stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,644 USD	878	- USD	878	None
Stock-Preferred stock	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,349	-	-	-	None
Stock-Preferred stock	ATSCALE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,520 USD	5,006	- USD	5,006	None
Stock-Preferred stock	SENSIFREE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	614	-	-	-	None
Stock-Preferred stock	DCARD HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	30,075 USD	4,818	- USD	4,818	None
Stock-Preferred stock	GCT SEMICONDUCTOR, INC.	-	Financial assets at fair value through profit or loss, noncurrent	175 USD	1	- USD	1	None
Stock-Preferred stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	12,241 USD	5,144	- USD	5,144	None
Stock-Preferred stock	SIFOTONICS TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,500 USD	1,822	- USD	1,822	None
Stock-Preferred stock	NEVO ENERGY, INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,980	-	-	-	None
Stock-Preferred stock	NEXENTA SYSTEMS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	6,555	-	-	-	None

244 ATTACHMENT 4 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UMC CAPITAL CORP.**

Type of securities	Name of securities	Relationship	December 31, 2022				Shares as collateral (thousand)
			Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock-Preferred stock	CLOUDWORDS, INC.	-	9,461	USD 3,573	-	USD 3,573	None
Stock-Preferred stock	EASTVISION TECHNOLOGY LTD.	-	2,770	-	-	-	None
Stock-Preferred stock	BLUESPACE.AI, INC.	-	533	USD 1,818	-	USD 1,818	None
Stock-Preferred stock	REED SEMICONDUCTOR CORP.	-	3,864	USD 1,418	-	USD 1,418	None
Stock-Preferred stock	A.A.A TARANIS VISUAL LTD.	-	490	USD 5,577	-	USD 5,577	None
Stock-Preferred stock	NEUROBLADE LTD.	-	333	USD 1,701	-	USD 1,701	None
Stock-Preferred stock	HYPERLIGHT CORP.	-	249	USD 1,870	-	USD 1,870	None
Stock-Preferred stock	AMMAX BIO, INC.	-	493	USD 1,000	-	USD 1,000	None
Stock-Preferred stock	CLEARMIND BIOMEDICAL, INC.	-	400	USD 1,000	-	USD 1,000	None
Convertible bonds	GLYMPOSE, INC.	-	-	USD -	-	USD -	None

**TERA ENERGY DEVELOPMENT CO., LTD.**

Type of securities	Name of securities	Relationship	December 31, 2022				Shares as collateral (thousand)
			Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Stock	TIAN TAI PHOTOELECTRICITY CO., LTD.	-	357	USD 6,105	1.18	USD 6,105	None

**SINO PARAGON LIMITED**

Type of securities	Name of securities	Relationship	December 31, 2022				Shares as collateral (thousand)
			Units (thousand)/ bonds/ shares (thousand)	Carrying amount	Percentage of ownership (%)	Fair value/ Net assets value	
Fund	SPARKLABS GLOBAL VENTURES FUND I, L.P.	-	-	USD 81,930	11.13	USD 81,930	None
Fund	SPARKLABS KOREA FUND II, L.P.	-	-	42,294	5.00	42,294	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, 2022)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

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	Units (thousand)/ bonds/shares (thousand)	Amount	Units (thousand)/ bonds/shares (thousand)	Amount	Cost	Gain (Loss) from disposal	Units (thousand)/ bonds/shares (thousand)

None

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, 2022)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

Name of properties	Transaction date	Transaction amount	Payment status	Counter-party	Relationship	Former holder of property	Relationship between former holder and acquirer of property		Date of transaction	Transaction amount	Price reference	Date of acquisition and status of utilization	Other commitments
							Third party	N/A					
Fab	2022.03.25 - 2022.12.20	\$1,746,057	By the construction progress	L&K ENGINEERING (SUZHOU) CO., LTD. SINGAPORE BRANCH	Third party	N/A	N/A	N/A	N/A	N/A	Manufacturing purpose	None	
Fab	2022.01.05 - 2022.05.24	688,490	By the construction progress	GANG-WEI CONSTRUCTION CO.,LTD	Third party	N/A	N/A	N/A	N/A	N/A	Manufacturing purpose	None	
Fab	2022.07.05 - 2022.12.20	21,866,256	By the construction progress	L&K ENGINEERING CO.,LTD. (SINGAPORE BRANCH)	Third party	N/A	N/A	N/A	N/A	N/A	Manufacturing purpose	None	

Where counter-party is a related party, details of prior transactions

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, 2022)  
 (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
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None

ATTACHMENT 8 ( Related party transactions for purchases and sales amounts exceeding the lower of NTS\$100 million or 20 percent of capital stock for the year ended December 31, 2022)  
(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			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Subsidiary	Sales	\$68,554,072	33 %	Net 60 days	N/A	N/A	\$9,502,922	34 %	
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	3,648,688	2 %	Month-end 60 days	N/A	N/A	265,994	1 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary	Sales	1,143,280	1 %	Net 30 days	N/A	N/A	16,774	0 %	
UNITEDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Subsidiary	Sales	656,472	0 %	Net 30 days	N/A	N/A	6,734	0 %	
ARTERY TECHNOLOGY CORPORATION, LTD.	Associate	Sales	429,636	0 %	Month-end 60 days	N/A	N/A	56,864	0 %	
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Subsidiary	Sales	164,855	0 %	Net 60 days	N/A	N/A	151,430	1 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary	Purchases	1,036,546	1 %	Net 30 days or 45 days	N/A	N/A	174	0 %	

**UMC GROUP (USA)**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		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	2,232,913	91 %	Net 60 days	N/A	N/A	310,688	88 %	
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Associate	Purchases	134,955	5 %	Net 60 days	N/A	N/A	24,327	7 %	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Associate	Purchases	52,632	2 %	Net 60 days	N/A	N/A	10,175	3 %	
WAVE TEK MICROELECTRONICS CORPORATION	Associate	Purchases	23,631	1 %	Net 60 days	N/A	N/A	2,669	1 %	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	18,121	1 %	Net 60 days	N/A	N/A	4,823	1 %	

**UNITED SEMICONDUCTOR JAPAN CO., LTD.**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	18,773,725	18 %	Net 60 days	N/A	N/A	3,228,122	16 %	

**UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	354,056	6 %	Net 60 days	N/A	N/A	70,810	10 %	
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	293,264	5 %	Month-end 60 days	N/A	N/A	39,273	6 %	
UNITED MICROELECTRONICS CORPORATION	The ultimate parent of the Company	Sales	234,144	4 %	Net 30 days or 45 days	N/A	N/A	39	0 %	
UNITEDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Associate	Sales	33,527	1 %	Month-end 30 days	N/A	N/A	39	0 %	

ATTACHMENT 8 ( Related party transactions for purchases and sales amounts exceeding the lower of NTS\$100 million or 20 percent of capital stock for the year ended December 31, 2022)



(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**WAVETEK MICROELECTRONICS CORPORATION**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	\$716,357	21 %	Net 60 days	N/A	N/A	\$81,819	33 %	
UNITED MICROELECTRONICS CORPORATION	Parent company	Sales	124,178	4 %	Month-end 30 days	N/A	N/A	-	-	

**HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	124,808	3 %	Net 60 days	N/A	N/A	33,591	8 %	
UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Subsidiary	Sales	70,548	2 %	Month-end 30 days	N/A	N/A	2,167	0 %	
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	26,303	1 %	Net 45 days	N/A	N/A	99	0 %	

**UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Parent company	Purchases	68,725	51 %	Month-end 30 days	N/A	N/A	2,167	68 %	
UNITED MICROELECTRONICS CORPORATION	The ultimate parent of the Company	Purchases	54,560	41 %	Net 30 days	N/A	N/A	503	16 %	

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, 2022)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Subsidiary	\$-	\$9,502,922	8.68	\$-	-	\$9,522,598	\$11,819
FARADAY TECHNOLOGY CORPORATION	Associate	-	265,994	13.59	-	-	221,680	222
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Subsidiary	-	151,430	2.02	-	-	151,440	-

**UNITED SEMICONDUCTOR JAPAN CO., LTD.**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Associate	JPY -	3,228,122	7.47	JPY -	-	3,228,122	JPY -

**UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Associate	RMB -	70,810	5.80	RMB -	-	34,285	RMB 55
FARADAY TECHNOLOGY CORPORATION	Associate	RMB -	39,273	6.71	RMB -	-	20,200	RMB 30

**HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Associate	RMB -	33,591	5.25	RMB 0	Collection in subsequent period	33,591	RMB 0

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2022) (Not including investment in Mainland China)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

Investee company	Address	Initial investment		Investment as of December 31, 2022			Investment income (loss) recognized	Note
		Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount		
UMC GROUP (USA)	USA	USD	USD	16,438	16,438	100.00	\$100,308	\$100,308
UMC GROUP (USA)	USA	USD	USD	16,438	16,438	100.00	\$100,308	\$100,308
UNITED MICROELECTRONICS (EUROPE) B.V.	The Netherlands	USD	5,421 USD	5,421	9	100.00	151,501	1,268
UMC CAPITAL CORP.	Cayman Islands	USD	81,500 USD	81,500	71,663	100.00	5,206,591	(648,710)
GREEN EARTH LIMITED	Samoa	USD	977,000 USD	977,000	977,000	100.00	12,563,053	1,061,810
TLC CAPITAL CO., LTD.	Taipei City, Taiwan	USD	4,610,000	4,610,000	433,942	100.00	4,956,399	290,738
UMC INVESTMENT (SAMOA) LIMITED	Samoa	USD	1,520 USD	1,520	1,520	100.00	42,895	4,030
FORTUNE VENTURE CAPITAL CORP.	Taipei City, Taiwan	USD	3,440,053	3,440,053	607,485	100.00	6,542,236	(647,625)
UMC KOREA CO., LTD.	Korea	KRW	550,000 KRW	550,000	110	100.00	23,341	1,877
OMNI GLOBAL LIMITED	Samoa	USD	4,300 USD	4,300	4,300	100.00	749,679	54,871
SINO PARAGON LIMITED	Samoa	USD	2,600 USD	2,600	2,600	100.00	127,018	(11,202)
BEST ELITE INTERNATIONAL LIMITED	British Virgin Islands	USD	309,102 USD	309,102	664,966	100.00	32,001,872	8,372,540
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Japan	JPY	64,421,068 JPY	64,421,068	116,247	100.00	24,786,883	7,159,811
WAVETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	SGD	1,903,741	1,903,741	148,112	79.50	1,281,358	579,486
MTIC HOLDINGS PTE. LTD.	Singapore	SGD	12,000 SGD	12,000	12,000	45.44	-	(74,089)
UNITECH CAPITAL INC.	British Virgin Islands	USD	21,000 USD	21,000	21,000	42.00	426,070	(482,583)
TRIKNIGHT CAPITAL CORPORATION	Taipei City, Taiwan	USD	2,342,800	2,342,800	326,734	40.00	2,117,678	(1,404,409)
HSUN CHIEH INVESTMENT CO., LTD.	Taipei City, Taiwan	USD	336,241	336,241	1,201,774	36.49	9,530,916	(4,139,132)
YANN YUAN INVESTMENT CO., LTD.	Taipei City, Taiwan	USD	2,300,000	2,300,000	138,000	26.78	7,299,414	368,190
FARADAY TECHNOLOGY CORPORATION	Hsinchu City, Taiwan	USD	38,918	38,918	34,240	13.78	1,874,131	328,067
UNIMICRON TECHNOLOGY CORP.	Taoyuan City, Taiwan	USD	2,438,565	2,438,565	196,136	13.27	13,460,838	3,679,607

252 ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2022) (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, 2022			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	7,800	100.00	\$116,787	\$36,293	\$36,293	
PURIUMFIL INC.	Hsinchu City, Taiwan	Chemicals and filtration products & Microcontamination control service	10,000	10,000	1,000	40.00	14,840	18,281	7,783	
UNITED LED CORPORATION HONG KONG LIMITED	Hongkong	Investment holding	USD	22,500 USD	22,500	25.14	97,156	(12,849)	(3,230)	
WAVETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	8,856	8,856	1,194	0.64	11,071	579,486	3,715	

**TLC CAPITAL CO., LTD.**

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2022			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	100.00	\$9,719	\$2,423	\$2,423	
HSUN CHIEH CAPITAL CORP.	Samoa	Investment holding	USD	8,000 USD	8,000	40.00	210,690	(100,907)	(40,363)	
VSENSE CO., LTD.	Taipei City, Taiwan	Medical devices, measuring equipment, reagents and consumables	95,916	95,916	4,251	23.98	-	(18,455)	(0)	

**UMC CAPITAL CORP.**

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2022			Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount	Net income (loss) of investee company		
TRANSLINK CAPITAL PARTNERS I, L.P.	Cayman Islands	Investment holding	USD	3,873 USD	3,934	10.38	USD 1,780	(66,952) USD	(5,561)	

**TERA ENERGY DEVELOPMENT CO., LTD.**

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2022			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	100.00	\$46,301	\$2,669	\$2,669	

**WAVETEK MICROELECTRONICS CORPORATION**

Investee company	Address	Main businesses and products	Initial Investment			Investment as of December 31, 2022			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	1,650 USD	1,650	100.00	\$2,968	\$(13)	\$(13)	

ATTACHMENT 10 (Names, locations and related information of investee companies as of December 31, 2022) (Not including investment in Mainland China)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED**

Investee company	Address	Main businesses and products	Initial investment			Investment as of December 31, 2022			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	Marketing service	USD	60	USD	60	100.00	\$2,931	\$(17)	\$(17)

**BEST ELITE INTERNATIONAL LIMITED**

Investee company	Address	Main businesses and products	Initial investment			Investment as of December 31, 2022			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	\$32,036,736	\$8,372,192	\$8,372,192

**INFOSHINE TECHNOLOGY LIMITED**

Investee company	Address	Main businesses and products	Initial investment			Investment as of December 31, 2022			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	\$32,036,736	\$8,372,192	\$8,372,192

**OMNI GLOBAL LIMITED**

Investee company	Address	Main businesses and products	Initial investment			Investment as of December 31, 2022			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 (CALIFORNIA)	USA	Research & Development	USD	1,000	USD	1,000	100.00	\$40,752	\$1,733	\$1,733
ECP VITA PTE. LTD.	Singapore	Insurance	USD	9,000	USD	9,000	100.00	690,921	51,397	51,397

**GREEN EARTH LIMITED**

Investee company	Address	Main businesses and products	Initial investment			Investment as of December 31, 2022			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 MICROCHIP CORPORATION	Cayman Islands	Investment holding	USD	974,050	USD	974,050	100.00	\$12,535,675	\$1,059,106	\$1,059,106

ATTACHMENT 11 (Investment in Mainland China as of December 31, 2022)  
(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, 2022	Outflow	Inflow	Accumulated outflow of investment from Taiwan as of December 31, 2022	Net income (loss) of investee company	Percentage of ownership	Investment income (loss) recognized (Note 2)	Carrying amount as of December 31, 2022	Accumulated inward remittance of earnings as of December 31, 2022
				Outflow	Inflow									
				Investment flows	Investment flows									
UNITRUTH ADVISOR (SHANGHAI) CO., LTD.	Investment Holding and advisory	(USD) \$24,520 (800)	(i) SOARING CAPITAL CORP.	(USD) \$24,520 (800)	(USD) \$-	(USD) \$24,520 (800)	(USD) \$-	(USD) \$-	(USD) \$2,453	100.00%	(iii) \$2,453	(USD) \$9,616	(USD) \$-	
EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	(USD) 22,988 (750)	(ii) EVERRICH ENERGY INVESTMENT (HK) LIMITED	(USD) 22,988 (750)	(USD) -	(USD) 22,988 (750)	(USD) -	(USD) 22,988 (750)	(USD) 2,695	100.00%	(ii) 2,695	(USD) 45,934	(USD) 134,615 (4,392)	
UNITED LED CORPORATION	Research, manufacturing and sales in LED epitaxial wafers	(USD) 2,574,600 (84,000)	(i) UNITED LED CORPORATION HONG KONG LIMITED	(USD) 620,662 (20,250)	(USD) -	(USD) 620,662 (20,250)	(USD) -	(USD) 620,662 (20,250)	(RMB) (13,661) (3,116)	25.14%	(RMB) (3,433) (783)	(RMB) 93,984 (21,438)	(RMB) 134,615 (4,392)	
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Sales and manufacturing of integrated circuits	(RMB) 13,788,969 (3,145,294)	(ii) YOAKWOOD ASSOCIATES LIMITED	(USD) 9,473,976 (309,102)	(USD) -	(USD) 9,473,976 (309,102)	(USD) -	(USD) 9,473,976 (309,102)	(RMB) 8,218,711 (1,874,706)	99.9985% (Note 4)	(RMB) 8,218,584 (1,874,677)	(RMB) 31,273,453 (7,133,543)	(RMB) 134,615 (4,392)	
UNITEDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Design support of integrated circuits	(RMB) 13,150 (30,000)	(ii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	(USD) -	(USD) -	(USD) -	(USD) -	(USD) -	(RMB) 368,120 (83,969)	99.9985%	(RMB) 368,111 (83,967)	(RMB) 790,953 (180,418)	(RMB) 134,615 (4,392)	
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Sales and manufacturing of integrated circuits	(RMB) 68,819,129 (15,697,794)	(ii) UNITED MICROCHIP CORPORATION and (ii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	(USD) 29,576,208 (964,966)	(USD) -	(USD) 29,576,208 (964,966)	(USD) -	(USD) 29,576,208 (964,966)	(RMB) 2,312,021 (527,377)	71.86%	(RMB) 1,612,904 (367,907)	(RMB) 21,655,570 (4,939,683)	(RMB) 134,615 (4,392)	

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 statements were 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, 2022, 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 2,505,944 thousand. As of December 31, 2022, the amount of investment USD 855,022 thousand has not yet been remitted.

Investment amounts authorized by Investment Commission, MOEA	Upper limit on investment
(USD) 339,718,354	(USD) 201,064,356
(USD) 1,295,868	(USD) 2,911,313

ATTACHMENT 12 (Information of major shareholders as of December 31, 2022)

**UNITED MICROELECTRONICS CORPORATION**

Name	Number of shares	Percentage of ownership (%)
JPMorgan Chase Bank, N.A. acting in its capacity as depositary and representative to the holders of ADRs	674,118,630	5.39





**UNITED MICROELECTRONICS CORPORATION**  
**PARENT COMPANY ONLY**  
**FINANCIAL STATEMENTS**  
**WITH REPORT OF INDEPENDENT AUDITORS**  
**FOR THE YEARS ENDED**  
**DECEMBER 31, 2022 AND 2021**

**Independent Auditors' Report Translated from Chinese**

To United Microelectronics Corporation

**Opinion**

We have audited the accompanying parent company only balance sheets of United Microelectronics Corporation (the "Company") as of December 31, 2022 and 2021, and the related parent company only statements of comprehensive income, changes in equity and cash flows for the years ended December 31, 2022 and 2021, 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, 2022 and 2021, and its financial performance and cash flows for the years ended December 31, 2022 and 2021, 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 the Standards on Auditing of 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 2022 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.

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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.

#### Valuation for slow-moving inventories

As of December 31, 2022, the Company's net inventories amounted to NT\$21,611 million. As the semiconductor industry is characterized by rapid changes in technology, management has 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 the judgmental nature of 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, evaluate the appropriateness of management's methodology to determine inventory aging and inventory reserve percentages, compare slow-moving inventories reserve to historical usage and write-off activities, and test the accuracy and completeness of the underlying data used in such determination. 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\$25,536 million and NT\$39,351 million, representing 5.22% and 9.73% of total assets as of December 31, 2022 and 2021, respectively. The related shares of profit or loss from the subsidiaries, associates and joint ventures under the equity method amounted to NT\$(2,347) million and NT\$8,231 million, representing (2.32)% and 13.56% of the income before tax for the years ended December 31, 2022 and 2021, respectively, and the related shares of other comprehensive income from the subsidiaries, associates and joint ventures under the equity method amounted to NT\$1 million and NT\$3,253 million, representing 0.00% and 5.43% of the comprehensive income for the years ended December 31, 2022 and 2021, respectively.

#### **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 the Standards on Auditing of the Republic of China will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these parent company only financial statements.

As part of an audit in accordance with the Standards on Auditing of the Republic of China, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

1. Identify and assess the risks of material misstatement of the parent company only financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

2. Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the 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 2022 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 22, 2023

#### 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 Standards on Auditing of 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, 2022 and 2021  
 (Expressed in Thousands of New Taiwan Dollars)

	As of December 31,	
	2022	2021
<b>Current assets</b>		
Cash and cash equivalents	\$ 122,490,841	\$ 93,648,701
Financial assets at fair value through profit or loss, current	669,444	761,320
Financial assets at fair value through other comprehensive income, current	3,213,057	8,482,334
Financial assets measured at amortized cost, current	49,258	26,204,535
Contract assets, current	210,569	174,487
Accounts receivable, net	17,625,956	19,348,498
Accounts receivable-related parties, net	10,011,792	6,698,875
Other receivables	1,328,855	578,515
Current tax assets	36,102	-
Inventories, net	21,610,975	15,772,250
Prepayments	2,255,433	1,790,402
Other current assets	544,137	474,970
<b>Total current assets</b>	<b>180,046,419</b>	<b>173,934,887</b>
<b>Non-current assets</b>		
Financial assets at fair value through profit or loss, noncurrent	4,958,761	6,102,595
Financial assets at fair value through other comprehensive income, noncurrent	11,396,208	10,462,826
Financial assets measured at amortized cost, noncurrent	7,491	8,786
Investments accounted for under the equity method	129,114,798	117,053,293
Property, plant and equipment	127,926,250	76,105,085
Right-of-use assets	3,491,673	2,631,205
Intangible assets	3,245,419	3,323,995
Deferred tax assets	3,420,659	3,652,939
Prepayment for equipment	18,059,634	7,193,995
Refundable deposits	2,195,907	2,112,174
Other noncurrent assets-others	5,703,779	1,770,101
<b>Total non-current assets</b>	<b>309,520,579</b>	<b>230,416,994</b>
<b>Total assets</b>	<b>\$ 489,566,998</b>	<b>\$ 404,351,881</b>

(continued)

English Translation of Parent Company Only Financial Statements Originally Issued in Chinese  
 UNITED MICROELECTRONICS CORPORATION  
 PARENT COMPANY ONLY BALANCE SHEETS  
 December 31, 2022 and 2021  
 (Expressed in Thousands of New Taiwan Dollars)

	As of December 31,	
	2022	2021
<b>Liabilities and Equity</b>		
<b>Current liabilities</b>		
Short-term loans	-	277,200
Financial liabilities at fair value through profit or loss, current	438,397	2,380,599
Contract liabilities, current	1,039,075	880,674
Accounts payable	6,194,304	5,590,327
Other payables	25,278,901	16,923,279
Payables on equipment	16,517,720	6,212,564
Current tax liabilities	12,395,366	3,455,689
Lease liabilities, current	283,730	258,010
Other financial liabilities, current	17,226,490	12,718,616
Current portion of long-term liabilities	5,768,258	18,675,626
Other current liabilities	1,457,963	956,100
<b>Total current liabilities</b>	<b>86,600,204</b>	<b>68,328,684</b>
<b>Non-current liabilities</b>		
Contract liabilities, noncurrent	438,188	422,730
Bonds payable	23,083,096	23,077,699
Long-term loans	2,133,333	3,283,333
Deferred tax liabilities	2,871,801	1,316,671
Lease liabilities, noncurrent	3,397,500	2,408,740
Net defined benefit liabilities, noncurrent	2,869,402	3,877,321
Guarantee deposits	28,346,296	12,297,336
Other noncurrent liabilities-others	4,719,918	8,359,664
<b>Total non-current liabilities</b>	<b>67,859,534</b>	<b>55,043,494</b>
<b>Total liabilities</b>	<b>154,459,738</b>	<b>123,372,178</b>
<b>Equity</b>		
<b>Capital</b>		
Common stock		124,832,476
<b>Additional paid-in capital</b>		
Premiums	3,215,160	39,889,798
Treasury stock transactions	4,531,955	4,531,955
The differences between the fair value of the consideration paid or received from acquiring or disposing subsidiaries and the carrying amounts of the subsidiaries	466,457	466,457
Share of changes in net assets of associates and joint ventures accounted for using equity method	196,359	87,889
Restricted stock for employees	2,221,709	2,238,128
Other	1,746,193	683,866
<b>Retained earnings</b>		
Legal reserve		15,734,416
Special reserve	21,566,986	8,164,648
Unappropriated earnings	4,914,214	91,476,725
<b>Other components of equity</b>		
Exchange differences on translation of foreign operations	175,765,824	(16,629,547)
Unrealized gains or losses on financial assets measured at fair value through other comprehensive income	(6,516,198)	11,715,333
Unearned employee compensation	3,782,141	(2,212,441)
<b>Treasury stock</b>	(1,831,030)	-
<b>Total equity</b>	<b>335,107,260</b>	<b>280,979,703</b>
<b>Total liabilities and equity</b>	<b>\$ 489,566,998</b>	<b>\$ 404,351,881</b>

Financial Review

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

UNITED MICROELECTRONICS CORPORATION  
PARENT COMPANY ONLY STATEMENTS OF COMPREHENSIVE INCOME

For the years ended December 31, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars, Except for Earnings per Share)

	Notes	For the years ended December 31,	
		2022	2021
<b>Operating revenues</b>	4, 6(21), 7	\$ 210,083,555	\$ 159,222,834
<b>Operating costs</b>	4, 6(6), 6(10), 6(15), 6(20), 6(21), 6(22), 7	(107,516,115)	(97,027,257)
<b>Gross profit</b>		102,567,440	62,195,577
<b>Operating expenses</b>	4, 6(5), 6(10), 6(15), 6(20), 6(22), 7		
Sales and marketing expenses		(2,782,706)	(3,495,499)
General and administrative expenses		(7,282,887)	(5,692,011)
Research and development expenses		(10,244,940)	(10,016,596)
Expected credit impairment gains (losses)		(3,690)	6,617
Subtotal		(20,314,223)	(19,197,489)
Net other operating income and expenses	4, 6(16), 6(23), 7	473,088	398,775
<b>Operating income</b>		82,726,305	43,396,863
<b>Non-operating income and expenses</b>			
Interest income	4	1,401,110	228,165
Other income	4	1,816,261	726,395
Other gains and losses	4, 6(24)	(224,288)	(806,676)
Finance costs	6(24)	(707,491)	(618,951)
Share of profit or loss of subsidiaries, associates and joint ventures	4, 6(7)	14,526,472	17,876,394
Exchange gain, net	4	1,482,103	-
Exchange loss, net	4	-	(121,242)
Subtotal		18,294,167	17,284,085
<b>Income from continuing operations before income tax</b>		101,020,472	60,680,948
<b>Income tax expense</b>	4, 6(26)	(13,822,181)	(4,900,693)
<b>Net income</b>		87,198,291	55,780,255
<b>Other comprehensive income (loss)</b>	6(25)		
<b>Items that will not be reclassified subsequently to profit or loss</b>			
Remeasurements of defined benefit pension plans	4, 6(15)	296,804	(197,477)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	4	(4,335,894)	5,496,342
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which will not be reclassified subsequently to profit or loss		(3,293,972)	3,676,023
Income tax related to items that will not be reclassified subsequently	4, 6(26)	(342,756)	(104,643)
<b>Items that may be reclassified subsequently to profit or loss</b>			
Exchange differences on translation of foreign operations		8,757,087	(1,827,851)
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss		622,598	(2,936,529)
Income tax related to items that may be reclassified subsequently	4, 6(26)	733,664	25,709
<b>Total other comprehensive income (loss)</b>		2,437,531	4,131,574
<b>Total comprehensive income (loss)</b>		\$ 89,635,822	\$ 59,911,829
<b>Earnings per share (NTD)</b>	4, 6(27)		
Earnings per share-basic		\$ 7.09	\$ 4.57
Earnings per share-diluted		\$ 6.87	\$ 4.48

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, 2022 and 2021

(Expressed in Thousands of New Taiwan Dollars)

	Notes	Capital		Retained Earnings				Other Components of Equity				Total Equity
		Common Stock	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	Unearned Employee Compensation	Treasury Stock		
Balance as of January 1, 2021	6(19)	\$ 124,224,015	\$ 43,211,214	\$ 12,536,526	\$ 11,022,314	\$ 56,617,520	\$ (11,890,876)	\$ 3,726,229	\$ (3,667,395)	\$ (119,801)	\$ 235,659,746	
Appropriation and distribution of 2020 retained earnings	6(19)	-	-	3,197,890	-	(3,197,890)	-	-	-	-	-	
Legal reserve		-	-	-	-	(19,875,842)	-	-	-	-	(19,875,842)	
Cash dividends		-	-	-	(2,857,666)	2,857,666	-	-	-	-	-	
Special reserve reversed		-	-	-	-	-	-	-	-	-	-	
Net income for the year ended December 31, 2021		-	-	-	-	55,780,255	-	-	-	-	55,780,255	
Other comprehensive income (loss) for the year ended December 31, 2021	6(25)	-	-	-	-	(148,768)	(4,738,671)	9,019,013	-	-	4,131,574	
Total comprehensive income (loss)		-	-	-	-	55,631,487	(4,738,671)	9,019,013	-	-	59,911,829	
Share-based payment transaction	4, 6(20)	(2,617)	293,374	-	-	-	-	-	1,454,954	-	1,745,711	
Share of changes in net assets of associates and joint ventures accounted for using equity method		-	(5,991)	-	-	1,029,909	-	(1,029,909)	-	-	(5,991)	
Changes in subsidiaries' ownership	4	-	-	-	-	(1,009,440)	-	-	-	-	(1,009,440)	
Adjustments for dividends subsidiaries received from parent company		-	25,724	-	-	-	-	-	-	-	25,724	
Share exchange	6(19)	611,078	3,930,986	-	-	-	-	-	-	119,801	4,661,865	
Others		-	442,786	-	-	(576,685)	-	-	-	-	(133,899)	
Balance as of December 31, 2021	6(19)	124,832,476	47,898,093	15,734,416	8,164,648	91,476,725	(16,629,547)	11,715,333	(2,212,441)	-	280,979,703	
Impact of retroactive applications	3	-	-	-	-	(153,843)	-	-	-	-	(153,843)	
Adjusted balance as of January 1, 2022	6(19)	124,832,476	47,898,093	15,734,416	8,164,648	91,322,882	(16,629,547)	11,715,333	(2,212,441)	-	280,825,860	
Appropriation and distribution of 2021 retained earnings	6(19)	-	-	5,832,570	-	(5,832,570)	-	-	-	-	-	
Legal reserve		-	-	-	(3,250,434)	3,250,434	-	-	-	-	-	
Special reserve reversed		-	-	-	-	-	-	-	-	-	-	
Cash distributed from additional paid-in capital	6(19)	-	(37,446,370)	-	-	-	-	-	-	-	(37,446,370)	
Net income for the year ended December 31, 2022		-	-	-	-	87,198,291	-	-	-	-	87,198,291	
Other comprehensive income (loss) for the year ended December 31, 2022	6(25)	-	-	-	-	258,171	10,113,349	(7,933,989)	-	-	2,437,531	
Total comprehensive income (loss)		-	-	-	-	87,456,462	10,113,349	(7,933,989)	-	-	89,635,822	
Share-based payment transaction	4, 6(20)	215,014	755,313	-	-	(1,490)	-	-	381,411	-	1,350,248	
Share of changes in net assets of associates and joint ventures accounted for using equity method		-	108,470	-	-	(797)	-	797	-	-	108,470	
Changes in subsidiaries' ownership	4	-	-	-	-	(429,097)	-	-	-	-	(429,097)	
Others		-	1,062,327	-	-	-	-	-	-	-	1,062,327	
Balance as of December 31, 2022	6(19)	\$ 125,047,490	\$ 12,377,833	\$ 21,566,986	\$ 4,914,214	\$ 175,765,824	\$ (6,516,198)	\$ 3,782,141	\$ (1,831,030)	\$ -	\$ 335,107,260	

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

UNITED MICROELECTRONICS CORPORATION  
PARENT COMPANY ONLY STATEMENTS OF CASH FLOWS  
For the years ended December 31, 2022 and 2021  
(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2022	2021
Cash flows from operating activities:		
Net income before tax	\$ 101,020,472	\$ 60,680,948
Adjustments to reconcile net income before tax to net cash provided by operating activities:		
Depreciation	21,755,962	24,674,586
Amortization	2,394,951	2,372,034
Expected credit impairment losses (gains)	3,690	(6,617)
Net loss (gain) of financial assets and liabilities at fair value through profit or loss	233,271	(1,195,142)
Interest expense	645,227	547,988
Interest income	(1,401,110)	(228,165)
Dividend income	(1,816,261)	(726,395)
Share-based payment	1,341,412	1,745,745
Share of profit of subsidiaries, associates and joint ventures	(14,526,472)	(17,876,394)
Gain on disposal of property, plant and equipment	(450,097)	(250,900)
Loss on disposal of investments	-	776
Loss on repurchases of bonds	203,851	-
Exchange loss (gain) on financial assets and liabilities	1,264,412	(114,215)
Gain on lease modification	(9)	-
Amortization of deferred income	(1,134,314)	(1,188,811)
Others	-	192,734
Income and expense adjustments	8,514,513	7,947,224
Changes in operating assets and liabilities:		
Financial assets and liabilities at fair value through profit or loss	(62,303)	684,820
Contract assets	(26,481)	(65,236)
Accounts receivable	(818,498)	(6,003,704)
Other receivables	(768,455)	66,090
Inventories	(5,421,396)	958,972
Prepayments	(4,117,531)	(967,574)
Other current assets	-	71,566
Contract fulfillment costs	(57,844)	(39,030)
Contract liabilities	73,988	146,727
Accounts payable	462,256	108,549
Other payables	7,791,162	3,485,059
Other current liabilities	423,572	(491,098)
Net defined benefit liabilities	(711,115)	(482,809)
Other noncurrent liabilities-others	9,207	10,688
Cash generated from operations	106,311,547	66,111,192
Interest received	1,257,700	233,626
Dividend received	3,781,544	2,202,578
Interest paid	(339,829)	(301,825)
Income tax paid	(2,773,181)	(1,318,511)
Net cash provided by operating activities	108,237,781	66,927,060



## 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, 2022 and 2021  
(Expressed in Thousands of New Taiwan Dollars)

	For the years ended December 31,	
	2022	2021
Cash flows from investing activities:		
Acquisition of financial assets at fair value through profit or loss	\$ (368,664)	\$ -
Acquisition of financial assets measured at amortized cost	-	(34,760,279)
Proceeds from redemption of financial assets measured at amortized cost	26,632,637	21,265,088
Proceeds from liquidation of investments	-	369,576
Acquisition of property, plant and equipment	(72,318,450)	(37,629,809)
Proceeds from disposal of property, plant and equipment	557,983	311,084
Increase in refundable deposits	(110,794)	(33,497)
Decrease in refundable deposits	28,780	174,094
Increase in other receivables	-	(500,000)
Decrease in other receivables	-	500,000
Acquisition of intangible assets	(1,747,816)	(1,700,951)
Government grants related to assets acquisition	60,547	45,651
Increase in other noncurrent assets-others	(243,036)	(125,799)
Net cash used in investing activities	<u>(47,508,813)</u>	<u>(52,084,842)</u>
Cash flows from financing activities:		
Increase in short-term loans	-	3,779,450
Decrease in short-term loans	(287,700)	(4,757,950)
Proceeds from bonds issued	-	25,760,800
Bonds issuance costs	-	(57,108)
Redemption of bonds	(13,305,050)	(2,000,000)
Proceeds from long-term loans	1,550,000	2,250,000
Repayments of long-term loans	(3,250,000)	(6,250,000)
Increase in guarantee deposits	15,701,075	12,862,911
Decrease in guarantee deposits	(794,146)	(547,259)
Cash payments for the principal portion of the lease liability	(342,621)	(317,301)
Cash dividends and cash distributed from additional paid-in capital	(37,445,300)	(19,871,129)
Others	-	65
Net cash provided by (used in) financing activities	<u>(38,173,742)</u>	<u>10,852,479</u>
Effect of exchange rate changes on cash and cash equivalents	6,286,914	(1,095,892)
Net increase in cash and cash equivalents	28,842,140	24,598,805
Cash and cash equivalents at beginning of year	93,648,701	69,049,896
Cash and cash equivalents at end of year	<u>\$ 122,490,841</u>	<u>\$ 93,648,701</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, 2022 and 2021  
 (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 2nd Road, Hsinchu Science Park, Hsinchu, 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 22, 2023.

**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, 2022. Except for the standards and interpretations disclosed below, there are no newly adopted or revised ones that have a material impact on the Company's financial position and performance.

**a. Onerous Contracts - Cost of Fulfilling a Contract (Amendments to IAS 37)**

The amendments clarify what costs a company should include as the cost of fulfilling a contract when assessing whether a contract is onerous, which specifying that the cost of fulfilling a contract comprises the costs that relate directly to the contract. The amendments are effective for contracts for which the Company has not yet fulfilled all its obligations on or after January 1, 2022 (the date of initial application). In accordance with the transitional provisions of IAS 37, the Company did not restate the comparative information. The amendments have no material impact on the Company. The Company recognized the cumulative effect from subsidiary accounted for using the equity method upon initial application, which resulted in a decrease of investments accounted for under the equity method of NT\$154 million and a decrease of retained earnings of NT\$154 million, respectively, as of January 1, 2022.

(2) Standards issued by International Accounting Standards Board ("IASB") which are endorsed by FSC, but not yet adopted by the Company are listed below:

New, Revised or Amended Standards and Interpretations	Effective Date issued by IASB
Amendments to IAS 1 "Presentation of Financial Statements" - Disclosure Initiative - Accounting Policies	January 1, 2023
Amendments to IAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors" - Definition of Accounting Estimates	January 1, 2023
Amendment to IAS 12 "Income Taxes" - Deferred Tax related to Assets and Liabilities arising from a Single Transaction	January 1, 2023

**a. IAS 1 "Presentation of Financial Statements" ("IAS 1") - Disclosure Initiative - Accounting Policies (Amendment)**

The amendments improve accounting policy disclosures that to provide more useful information to investors and other primary users of the financial statements.

**b. IAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors" ("IAS 8") - Definition of Accounting Estimates (Amendment)**

The amendments introduce the definition of accounting estimates and included other amendments to IAS 8 Accounting Policies, Changes in Accounting Estimates and Errors to help companies distinguish changes in accounting estimates from changes in accounting policies.

**c. IAS 12 "Income Taxes" ("IAS 12") - Deferred Tax related to Assets and Liabilities arising from a Single Transaction (Amendment)**

The amendments narrow the scope of the recognition exemption in paragraphs 15 and 24 of IAS 12 so that it no longer applies to transactions that, on initial recognition, give rise to equal taxable and deductible temporary differences.

The abovementioned standards and interpretations were issued by IASB and endorsed by FSC so that they are applicable for annual periods beginning on or after January 1, 2023. The standards and interpretations listed (a) - (c) have no material impact on the Company's financial position and performance.

(3) Standards issued by IASB but not yet endorsed by FSC (the effective dates are to be determined by FSC) are listed below:

New, Revised or Amended Standards and Interpretations	Effective Date issued by IASB
IFRS 10 "Consolidated Financial Statements" and IAS 28 "Investments in Associates and Joint Ventures" - Sale or Contribution of Assets between an Investor and its Associate or Joint Ventures	To be determined by IASB
IFRS 17 "Insurance Contracts"	January 1, 2023
Amendments to IAS 1 "Presentation of Financial Statements" - Classification of Liabilities as Current or Non-current	January 1, 2024
Amendments to IFRS 16 "Leases" - Lease Liability in a Sale and Leaseback	January 1, 2024
Amendments to IAS 1 "Presentation of Financial Statements" - Non-current Liabilities with Covenants	January 1, 2024

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:

a. 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 "Business Combinations" ("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.

b. IFRS 17 "Insurance Contracts" ("IFRS 17")

IFRS 17 provides a comprehensive model for insurance contracts, covering all relevant accounting aspects (including recognition, measurement, presentation and disclosure requirements). The core of IFRS 17 is the General (building block) Model, under this model, on initial recognition, an entity shall measure a group of insurance contracts at the total of the fulfilment cash flows and the contractual service margin. The carrying amount of a group of insurance contracts at the end of each reporting period shall be the sum of the liability for remaining coverage and the liability for incurred claims.

Other than the General Model, the standard also provides a specific adaptation for contracts with direct participation features (the Variable Fee Approach) and a simplified approach (Premium Allocation Approach) mainly for short-duration contracts.

IFRS 17 was issued in May 2017 and it was amended in 2020 and 2021. The amendments include deferral of the date of initial application of IFRS 17 by two years to annual beginning on or after 1 January 2023 (from the original effective date of 1 January 2021); provide additional transition reliefs; simplify some requirements to reduce the costs of applying IFRS 17 and revise some requirements to make the results easier to explain. IFRS 17 replaces an interim Standard - IFRS 4 Insurance Contracts - from annual reporting periods beginning on or after 1 January 2023.

c. IAS 1 "Presentation of Financial Statements" ("IAS 1") - Classification of Liabilities as Current or Non-current (Amendment)

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.

d. IFRS 16 "Leases" ("IFRS 16") - Lease Liability in a Sale and Leaseback (Amendment)

The amendments add seller-lessee additional requirements for the sale and leaseback transactions in IFRS 16, thereby supporting the consistent application of the standard.

e. IAS 1 "Presentation of Financial Statements" ("IAS 1") - Non-current Liabilities with Covenants (Amendment)

The amendments improved the information companies provide about long-term debt with covenants. The amendments specify that covenants to be complied within twelve months after the reporting period do not affect the classification of debt as current or non-current at the end of the reporting period.

The Company is currently evaluating the potential impact of the aforementioned standards and interpretations listed (a) - (e) 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).

(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 shareholders 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.

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.

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.

(8) 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.

(9) 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 are recognized directly in the Company's profit or loss and other comprehensive income, respectively. 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.

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 resulting in decrease in 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 or other appropriate account(s). 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.

(10) Property, Plant and Equipment

Property, plant and equipment are stated at cost, net of accumulated depreciation and accumulated impairment losses, if any. The cost of an item of property, plant and equipment comprises the acquisition cost, the costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management, and the initial estimate of costs for dismantling, removing the item and restoring the site on which it is located. 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 depreciation of the assets is calculated mainly over the following estimated useful lives: buildings - 20 to 56 years; machinery and equipment - 6 years; transportation equipment - 6 years; furniture and fixtures - 6 years.



(11) Lease

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 of:
- 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.

(12) 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.

(14) 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.

Exchangeable bonds

In accordance with IFRS 9, if the economic characteristics and risks of the embedded derivative are not closely related to the economic characteristics and risks of the host, the derivative financial instruments embedded in exchangeable bonds would be separated from the host and accounted for as financial assets or liabilities at fair value through profit or loss.

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.

(13) 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.

The Company has issued exchangeable bonds where the bondholders may exchange the bonds into ordinary shares of certain public entities which the Company holds as financial assets (“reference shares”). When exchangeable bondholders exercise their right to exchange their bonds for reference shares, the carrying amount of the bonds and the related assets or liabilities accounts will be derecognized, and the difference will be recognized in profit or loss.

Both the host and embedded derivative financial instrument in exchangeable bonds are classified as current liabilities as the bondholders have the right to demand settlement by exercising the exchange option of the bonds within 12 months.

(15) 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.

(16) 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.

(17) Decommissioning Liabilities

The amount of the decommissioning liability, arising from dismantling, removing the items of property, plant and equipment and restoring the site on which they are located, are provided at the present value of expected costs to settle the obligation using estimated cash flows, while the decommissioning costs are recognized as part of the cost of the particular items. The discount rate shall be a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the decommissioning liability. The periodic unwinding of the discount shall be recognized in profit or loss as a finance cost as it occurs. The estimated future costs of decommissioning are reviewed at the end of each reporting period and adjusted as appropriate. Changes in the estimated future costs or in the discount rate applied are added to or deducted from the cost of the items of property, plant and equipment.

(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

Equity-settled share-based payment transactions

The compensation cost of equity-settled transactions between the Company and its employees is measured at the fair value of the equity instruments on the grant date, and is recognized as expense, together with a corresponding increase in equity, over the vesting period. When issuing restricted stocks for employees, the unvested restricted stocks issued on the grant date for employees are recognized in unearned employee compensation as a transitional contra equity account and such account shall be amortized as compensation expense over the vesting period. The cumulative expense recognized for equity-settled transactions at each reporting date until the vesting 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 movement in cumulative cost recognized at the beginning and end of the period is recognized through profit or loss for the period.

No expense is recognized for awards that do not ultimately vest, except for equity-settled transactions where vesting is conditional upon a market or non-vesting condition. The Company shall recognize the services received in expense irrespective of whether or not 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.

Cash-settled share-based payment transactions

The compensation cost of cash-settled share-based payment transactions between the Company and its employees is measured at the fair value of the liability incurred and recognized as expense with corresponding liability over the vesting period. The fair value of the liability is remeasured at the end of each reporting period and at the settlement date with the movement in fair value recognized through profit or loss for the period until the liability is settled.

(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 shareholders 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 shareholders' 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.

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 shares outstanding 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. Given the global economic climate and unforeseen effects from COVID-19 pandemic, the process of estimation has become more challenging. Actual results could differ from those estimates, and as such, differences may be material to the consolidated financial statements.

(1) The Fair Value of Level 3 Financial Instruments

Where the fair values of the level 3 financial assets recorded on the balance sheet cannot be derived from active markets, they are determined by the application of an appropriate valuation method which was mainly the market approach. The valuation of these financial assets involves significant judgments such as the selection of comparable companies or equity transaction prices and the application of assumptions such as discounts for lack of marketability, 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(6). 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.

6. CONTENTS OF SIGNIFICANT ACCOUNTS

(1) Cash and Cash Equivalents

	As of December 31,	
	2022	2021
Cash on hand and petty cash	\$5,032	\$4,695
Checking and savings accounts	8,544,789	4,274,821
Time deposits	109,822,073	80,552,701
Repurchase agreements collateralized by government bonds and corporate notes	4,118,947	8,816,484
Total	\$122,490,841	\$93,648,701

(2) Financial Assets at Fair Value through Profit or Loss

	As of December 31,	
	2022	2021
Financial assets mandatorily measured at fair value through profit or loss		
Common stocks	\$4,832,291	\$6,443,260
Preferred stocks	18,000	22,375
Funds	777,914	398,280
Total	\$5,628,205	\$6,863,915
Current	\$669,444	\$761,320
Non-current	4,958,761	6,102,595
Total	\$5,628,205	\$6,863,915

(3) Financial Assets at Fair Value through Other Comprehensive Income

	As of December 31,	
	2022	2021
Equity instruments		
Common stocks	\$14,426,718	\$18,793,301
Preferred stocks	182,547	151,859
Total	<u>\$14,609,265</u>	<u>\$18,945,160</u>
Current	\$3,213,057	\$8,482,334
Non-current	11,396,208	10,462,826
Total	<u>\$14,609,265</u>	<u>\$18,945,160</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. The Company exchanged shares with CHIPBOND on November 5, 2021, and obtained 53 million common shares newly issued by CHIPBOND for the strategic cooperation between the Company and CHIPBOND. Please refer to Note 6(19) for further information.

b. Dividend income recognized in profit or loss from equity instruments designated as fair value through other comprehensive income were listed below:

	For the years ended	
	December 31,	
	2022	2021
Held at end of period	\$1,395,181	\$436,279
Derecognized during the period	-	-
Total	<u>\$1,395,181</u>	<u>\$436,279</u>

c. The Company issued unsecured exchangeable bonds where the bondholders may exchange the bonds at any time on or after October 8, 2021 and prior to June 27, 2026 into NOVATEK common shares which the Company holds and accounts for as equity instruments investments measured at fair value through other comprehensive income. Please refer to Note 6(13) for the Company's unsecured exchangeable bonds.

(4) Financial assets measured at amortized cost

	As of December 31,	
	2022	2021
Financial assets measured at amortized cost		
Time deposits with original maturities over three months	\$56,749	\$26,213,321
Current	\$49,258	\$26,204,535
Non-current	7,491	8,786
Total	<u>\$56,749</u>	<u>\$26,213,321</u>

(5) Accounts Receivable, Net

	As of December 31,	
	2022	2021
Accounts receivable	\$17,819,943	\$19,526,881
Less: loss allowance	(193,987)	(178,383)
Net	<u>\$17,625,956</u>	<u>\$19,348,498</u>

Aging analysis of accounts receivable:

	As of December 31,	
	2022	2021
Neither past due	\$13,316,547	\$16,501,919
Past due:		
≤ 30 days	3,750,727	2,361,178
31 to 60 days	85,148	94,847
61 to 90 days	2,078	528
91 to 120 days	7,610	-
≥ 121 days	657,833	568,409
Subtotal	<u>4,503,396</u>	<u>3,024,962</u>
Total	<u>\$17,819,943</u>	<u>\$19,526,881</u>



Movement of loss allowance for accounts receivable:

	For the years ended	
	December 31, 2022	2021
Beginning balance	\$178,383	\$187,602
Net recognition (reversal) for the period	15,604	(9,219)
Ending balance	\$193,987	\$178,383

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 the receivables past due within 60 days, including not past due, the Company estimates an expected credit loss rate to calculate ECLs. For the years ended December 31, 2022 and 2021, the expected credit loss rates were not greater than 0.09%. The rate is determined based on the Company's historical credit loss experience and customer's current financial condition, adjusted for forward-looking factors such as customer's economic environment. For the receivables past due over 60 days, the Company applies the aforementioned rate and assesses individually whether to recognize additional expected credit losses by considering customer's operating condition and debt-paying ability.

(6) Inventories, Net

	As of December 31,	
	2022	2021
Raw materials	\$5,176,841	\$2,603,170
Supplies and spare parts	4,413,659	3,005,609
Work in process	10,314,064	9,853,320
Finished goods	1,706,411	310,151
Total	\$21,610,975	\$15,772,250

a. For the years ended December 31, 2022 and 2021, the Company recognized NT\$102,132 million and NT\$93,597 million, respectively, in operating costs, of which NT\$388 million was related to write-down of inventories and NT\$269 million was related to reversal of write-down of inventories.

b. None of the aforementioned inventories were pledged.

(7) Investments Accounted for Under the Equity Method

a. Details of investments accounted for under the equity method are as follows:

	As of December 31,		Investee companies	Amount	Percentage of ownership or voting rights	Amount	Percentage of ownership or voting rights
	2022	2021					
<u>Listed companies</u>							
<u>Investments in associates</u>							
FARADAY TECHNOLOGY CORP. (FARADAY) (Note A)	\$1,874,131	\$1,779,618			13.78	\$1,779,618	13.78
UNIMICRON TECHNOLOGY CORP. (UNIMICRON) (Note B)	13,460,838	10,418,777			13.27	10,418,777	13.30
Subtotal	15,334,969	12,198,395					
<u>Unlisted companies</u>							
<u>Investments in subsidiaries</u>							
UMC GROUP (USA)	2,017,903	1,732,285			100.00	1,732,285	100.00
UNITED MICROELECTRONICS (EUROPE) B.V.	151,501	136,051			100.00	136,051	100.00
UMC CAPITAL CORP.	5,206,591	5,314,580			100.00	5,314,580	100.00
GREEN EARTH LIMITED	12,563,053	10,277,015			100.00	10,277,015	100.00
TLC CAPITAL CO., LTD.	4,956,399	4,648,384			100.00	4,648,384	100.00
UMC INVESTMENT (SAMOA) LIMITED	42,895	38,865			100.00	38,865	100.00
FORTUNE VENTURE CAPITAL CORP.	6,542,236	7,498,124			100.00	7,498,124	100.00
UMC KOREA CO., LTD.	23,341	20,575			100.00	20,575	100.00
OMNI GLOBAL LIMITED	749,679	626,457			100.00	626,457	100.00
SINO PARAGON LIMITED	127,018	138,220			100.00	138,220	100.00
BEST ELITE INTERNATIONAL LIMITED	32,001,872	25,139,523			100.00	25,139,523	100.00
UNITED SEMICONDUCTOR JAPAN CO., LTD.	24,786,883	18,222,094			100.00	18,222,094	100.00
WAVETEK MICROELECTRONICS CORPORATION	1,281,358	805,037			79.50	805,037	79.73
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. (Note C)	3,955,022	1,325,146			-	1,325,146	-
Subtotal	94,405,751	75,922,356					
<u>Investments in associates</u>							
MTIC HOLDINGS PTE. LTD. (Note D)	-	-			45.44	-	45.44
UNITECH CAPITAL INC.	426,070	976,559			42.00	976,559	42.00
TRIKNIGHT CAPITAL CORPORATION	2,117,678	4,122,087			40.00	4,122,087	40.00
HSUN CHIEH INVESTMENT CO., LTD.	9,530,916	14,092,662			36.49	14,092,662	36.49
YANN YUAN INVESTMENT CO., LTD.	7,299,414	9,741,234			26.78	9,741,234	28.22
Subtotal	19,374,078	28,932,542					
Total	\$129,114,798	\$117,053,293					

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, 2022 and 2021 were NT\$82 million and NT\$(25) million, respectively, which were not included in the following table.

The aggregate amount of the Company's share of all its individually immaterial associates that are accounted for using the equity method were as follows:

	For the years ended	
	2022	2021
Income (loss) from continuing operations	\$ (1,650,260)	\$ 8,341,191
Other comprehensive income (loss)	(2,996,996)	3,367,714
Total comprehensive income (loss)	<u>\$ (4,647,256)</u>	<u>\$ 11,708,905</u>

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, 2022 and 2021. Another associate, YANN YUAN INVESTMENT CO., LTD., held 193 million shares and 160 million shares of the Company's stock as of December 31, 2022 and 2021, respectively.

(8) Property, Plant and Equipment

2022

a. Assets Used by the Company:

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2022	\$861,487	\$25,437,274	\$768,828,799	\$43,780	\$6,099,850	\$19,548,207	\$820,819,397
Additions	-	325,943	-	-	-	64,965,065	65,291,008
Disposals	-	(69,360)	(6,275,855)	-	(17,194)	(14,889)	(6,377,298)
Transfers and reclassifications	-	64,904	39,455,671	7,790	645,597	(33,163,212)	7,010,750
Exchange effect	-	259,345	14,626,030	574	37,861	61,972	14,985,782
As of December 31, 2022	<u>\$861,487</u>	<u>\$26,018,106</u>	<u>\$816,634,645</u>	<u>\$52,144</u>	<u>\$6,766,114</u>	<u>\$51,397,143</u>	<u>\$901,729,639</u>

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: Beginning from June 2020, the Company accounts for its investment in UNIMICRON as an associate given the fact that the Company obtained the ability to exercise significant influence over UNIMICRON through representation on its Board of Directors.

Note C: Please refer to Note 9(5).

Note D: When the Company's share of losses of an associate equals or exceeds its interest in that associate, the Company discontinues recognizing its share of further losses. Additional losses and liabilities are recognized only to the extent that the Company has incurred legal or constructive obligations or made payments on behalf of that associate.

The carrying amount of investments accounted for using the equity method for which there are published price quotations amounted to NT\$15,335 million and NT\$12,198 million, as of December 31, 2022 and 2021, respectively. The fair value of these investments were NT\$28,416 million and NT\$53,491 million, as of December 31, 2022 and 2021, 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\$(2,347) million and NT\$8,231 million for the years ended December 31, 2022 and 2021, respectively. Share of other comprehensive income of these subsidiaries, associates and joint ventures amounted to NT\$1 million and NT\$3,253 million for the years ended December 31, 2022 and 2021, respectively. The balances of investments accounted for under the equity method were NT\$25,536 million and NT\$39,351 million as of December 31, 2022 and 2021, respectively.

Although the Company is the largest shareholder of some associates, after comprehensive assessment, the Company does not own the major voting rights as the remaining voting rights holders are able to align and prevent the Company from ruling the relevant operation. Therefore, the Company does not control but owns significant influence over the aforementioned associates.

None of the aforementioned investments accounted for using the equity method were pledged.

2021

Accumulated Depreciation and Impairment:

a. Assets Used by the Company:

Cost:

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2022	\$-	\$17,965,001	\$723,007,778	\$37,546	\$5,411,346	\$-	\$746,421,671
Depreciation	-	882,105	20,129,778	2,523	279,339	-	21,293,745
Disposals	-	(693,600)	(6,219,731)	-	(17,161)	-	(6,306,252)
Transfers and reclassifications	-	-	(6,380)	-	(176)	-	(6,556)
Exchange effect	-	160,836	13,813,231	320	35,172	-	14,009,559
As of December 31, 2022	\$-	\$18,938,582	\$750,724,676	\$40,389	\$5,708,520	\$-	\$775,412,167
Net carrying amount:							
As of December 31, 2022	\$861,487	\$7,079,524	\$65,909,969	\$11,755	\$1,057,594	\$51,397,143	\$126,317,472

b. Assets Subject to Operating Leases:

Cost:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2022	\$452,915	\$2,295,125	\$-	\$1,148,860	\$3,896,900
Disposals	-	-	-	(660)	(660)
Transfers and reclassifications	-	-	6,345	15,562	21,907
Exchange effect	-	20,254	-	4,260	24,514
As of December 31, 2022	\$452,915	\$2,315,379	\$6,345	\$1,168,022	\$3,942,661

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2022	\$-	\$1,074,111	\$-	\$1,115,430	\$2,189,541
Depreciation	-	89,197	-	32,150	121,347
Disposals	-	-	-	(660)	(660)
Transfers and reclassifications	-	-	6,345	2,111	6,556
Exchange effect	-	12,958	-	4,141	17,099
As of December 31, 2022	\$-	\$1,176,266	\$6,345	\$1,151,272	\$2,333,883
Net carrying amount:					
As of December 31, 2022	\$452,915	\$1,139,113	\$-	\$16,750	\$1,608,778

	Land	Buildings	Machinery and equipment	Transportation equipment	Furniture and fixtures	Construction in progress and equipment awaiting inspection	Total
As of January 1, 2021	\$861,487	\$25,487,904	\$754,903,233	\$43,540	\$5,819,803	\$7,355,208	\$794,471,175
Additions	-	-	-	-	-	29,726,755	29,726,755
Disposals	-	(20,455)	(3,908,279)	(791)	(3,759)	(7,751)	(3,941,035)
Transfers and reclassifications	-	34,800	21,718,380	1,185	293,381	(17,508,168)	4,539,578
Exchange effect	-	(64,975)	(3,884,535)	(154)	(9,575)	(17,837)	(3,977,076)
As of December 31, 2021	\$861,487	\$25,437,274	\$768,828,799	\$43,780	\$6,099,850	\$19,548,207	\$820,819,397

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, 2021	\$-	\$17,181,784	\$707,387,272	\$34,825	\$5,065,881	\$-	\$729,669,762
Depreciation	-	842,772	23,042,668	3,577	357,955	-	24,246,972
Disposals	-	(20,455)	(3,901,321)	(791)	(3,759)	-	(3,926,326)
Transfers and reclassifications	-	-	125,413	-	-	-	125,413
Exchange effect	-	(39,100)	(3,646,254)	(65)	(8,731)	-	(3,694,150)
As of December 31, 2021	\$-	\$17,965,001	\$723,007,778	\$37,546	\$5,411,346	\$-	\$746,421,671
Net carrying amount:							
As of December 31, 2021	\$861,487	\$7,472,273	\$45,821,021	\$6,234	\$688,504	\$19,548,207	\$74,397,726

b. Assets Subject to Operating Leases:

Cost:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2021	\$452,915	\$2,302,745	\$125,413	\$1,150,463	\$4,031,536
Transfers and reclassifications	-	-	(125,413)	-	(125,413)
Exchange effect	-	(7,620)	-	(1,603)	(9,223)
As of December 31, 2021	\$452,915	\$2,295,125	\$-	\$1,148,860	\$3,896,900

Accumulated Depreciation and Impairment:

	Land	Buildings	Machinery and equipment	Furniture and fixtures	Total
As of January 1, 2021	\$-	\$989,966	\$125,413	\$1,077,298	\$2,192,677
Depreciation	-	88,755	-	39,668	128,423
Transfers and reclassifications	-	-	(125,413)	-	(125,413)
Exchange effect	-	(4,610)	-	(1,536)	(6,146)
As of December 31, 2021	\$-	\$1,074,111	\$-	\$1,115,430	\$2,189,541
Net carrying amount:					
As of December 31, 2021	\$452,915	\$1,221,014	\$-	\$33,430	\$1,707,359

c. Details of interest expense capitalized were as follows:

	For the years ended December 31,	
	2022	2021
Interest expense capitalized	\$1,661	\$-
Interest rates applied	1.44% - 1.61%	-

d. Property, plant and equipment were not pledged as collateral.

(9) Leases

The Company leases various properties, such as land, buildings, machinery and equipment, transportation equipment and other equipment with lease terms of 2 to 31 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,	
	2022	2021
Land	\$3,254,693	\$2,365,172
Buildings	14,815	10,971
Machinery and equipment	201,090	237,083
Transportation equipment	19,273	14,302
Other equipment	1,802	3,677
Net	\$3,491,673	\$2,631,205

For the years ended  
December 31,

	2022	2021
<u>Depreciation</u>		
Land	\$269,983	\$237,632
Buildings	14,782	9,770
Machinery and equipment	44,174	42,754
Transportation equipment	9,455	6,872
Other equipment	2,476	2,163
Total	\$340,870	\$299,191

i. For the years ended December 31, 2022 and 2021, the Company's addition to right-of-use assets amounted to NT\$1,114 million and NT\$136 million, respectively.

ii. Right-of-use assets were not pledged as collateral.

(b) Lease Liabilities

	As of December 31,	
	2022	2021
Current	\$283,730	\$258,010
Non-current	3,397,500	2,408,740
Total	\$3,681,230	\$2,666,750

Please refer to Note 6(24) 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(8) for relevant disclosure of property, plant and equipment for operating leases.

(10) Intangible Assets

2022

Cost:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2022	\$3,556,833	\$4,558,777	\$3,196,368	\$11,311,978
Additions	1,678,264	-	475,973	2,154,237
Disposals	(1,194,172)	(1,344,682)	(869,940)	(3,408,794)
Reclassifications	(12,646)	-	-	(12,646)
Exchange effect	7,405	103,741	-	111,146
As of December 31, 2022	\$4,035,684	\$3,317,836	\$2,802,401	\$10,155,921

Accumulated Amortization and Impairment:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2022	\$1,995,153	\$3,305,088	\$2,687,742	\$7,987,983
Amortization	1,286,619	427,596	535,797	2,250,012
Disposals	(1,194,172)	(1,344,682)	(869,940)	(3,408,794)
Exchange effect	3,090	78,211	-	81,301
As of December 31, 2022	\$2,090,690	\$2,466,213	\$2,353,599	\$6,910,502
Net carrying amount:				
As of December 31, 2022	\$1,944,994	\$851,623	\$448,802	\$3,245,419

2021

Cost:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2021	\$2,778,327	\$4,539,730	\$3,337,834	\$10,655,891
Additions	1,149,247	46,780	316,829	1,512,856
Disposals	(363,776)	-	(458,295)	(822,071)
Reclassifications	(5,282)	-	-	(5,282)
Exchange effect	(1,683)	(27,733)	-	(29,416)
As of December 31, 2021	\$3,556,833	\$4,558,777	\$3,196,368	\$11,311,978

Accumulated Amortization and Impairment:

2021

Cost:

	Software	Patents and technology license fees	Others	Total
As of January 1, 2021	\$1,221,083	\$2,836,832	\$2,430,603	\$6,488,518
Amortization	1,138,397	486,822	715,434	2,340,653
Disposals	(363,776)	-	(458,295)	(822,071)
Exchange effect	(551)	(18,566)	-	(19,117)
As of December 31, 2021	\$1,995,153	\$3,305,088	\$2,687,742	\$7,987,983
Net carrying amount:				
As of December 31, 2021	\$1,561,680	\$1,253,689	\$508,626	\$3,323,995

The amortization amounts of intangible assets were as follows:

	For the years ended	
	December 31,	
	2022	2021
Operating costs	\$1,061,997	\$618,220
Operating expenses	\$1,188,015	\$1,722,433

(11) Short-Term Loans

	As of December 31,	
	2022	2021
Unsecured bank loans	\$-	\$277,200

	For the years ended	
	December 31,	
	2022	2021
Interest rates applied	0.33% - 0.54%	0.35% - 0.60%

(12) Financial Liabilities at Fair Value through Profit or Loss: Current

	As of December 31,	
	2022	2021
Embedded derivatives in exchangeable bonds	\$438,397	\$2,380,599

(13) Bonds Payable

	As of December 31,	
	2022	2021
Unsecured domestic bonds payable	\$23,100,000	\$31,300,000
Unsecured exchangeable bonds payable	5,757,373	10,817,047
Less: Discounts on bonds payable	(672,686)	(1,580,389)
Total	28,184,687	40,536,658
Less: Current or exchangeable portion due within one year	(5,101,591)	(17,458,959)
Net	\$23,083,096	\$23,077,699

a. The Company issued domestic unsecured corporate bonds. The terms and conditions of the bonds are as follows:

Term	Issuance date	Issued amount	Coupon rate	Repayment
Seven-year	In mid-June 2014	NT\$2,000 million	1.70%	Interest was paid annually and the principal was fully repaid in June 2021.
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 was paid annually and the principal was fully repaid in March 2022.
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 was paid annually and the principal was fully repaid in October 2022.
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.
Five-year	In late April 2021	NT\$5,500 million	0.57%	Interest will be paid annually and the principal will be repayable in April 2026 upon maturity.
Seven-year	In late April 2021	NT\$2,000 million	0.63%	Interest will be paid annually and the principal will be repayable in April 2028 upon maturity.
Ten-year (green bond)	In late April 2021	NT\$2,100 million	0.68%	Interest will be paid annually and the principal will be repayable in April 2031 upon maturity.
Five-year	In mid-December 2021	NT\$5,000 million	0.63%	Interest will be paid annually and the principal will be repayable in December 2026 upon maturity.

b. On July 7, 2021, the Company issued SGX-ST listed currency linked zero coupon exchangeable bonds. In accordance with IFRS 9, the value of the exchange right, call option and put option (together referred to as Option) of the exchangeable bonds was separated from the host and accounted for as “financial liabilities at fair value through profit or loss, current”. The effective rate of the host bond was 3.49%. The terms and conditions of the bonds are as follows:

i. Issue Amount: US\$400 million

ii. Period: July 7, 2021 - July 7, 2026 (Maturity Date)

iii. Redemption:

- (i) The Company may, at its option, redeem in whole or in part at the principal amount of the bonds with an interest calculated at the rate of -0.625% per annum (the Early Redemption Amount) at any time after the third anniversary from the issue date and prior to the Maturity Date, if the closing price of the common shares of NOVATEK MICROELECTRONICS CORPORATION (“NOVATEK”) on the Taiwan Stock Exchange (the “TWSE”), converted into U.S. dollars at the prevailing exchange rate, for 20 out of 30 consecutive trading days prior to the publication of the redemption notice is at least 130% of the quotient of the Early Redemption Amount multiplied by the then exchange price (converted into U.S. dollars at the Fixed Exchange Rate), divided by the principal amount of the bonds. The Early Redemption Amount will be converted into NTD based on the Fixed Exchange Rate (NTD 27.902=USD 1.00), and this fixed NTD amount will then be converted using the prevailing exchange at the time of redemption for payment in USD.
- (ii) The Company may redeem the outstanding bonds in whole, but not in part, at the Early Redemption Amount, in the event that over 90% of the bonds have been previously redeemed, repurchased and cancelled or exchanged.
- (iii) In the event of any change in ROC taxation resulting in increase of tax obligation or the necessity to pay additional interest expense or increase of additional costs to the Company, the Company may redeem the outstanding bonds in whole, but not in part, at the Early Redemption Amount. Bondholders may elect not to have their bonds redeemed but with no entitlement to any additional amounts or reimbursement of additional taxes.
- (iv) All or any portion of the bonds will be redeemable at put price at the option of bondholders on July 7, 2024 at 98.14% of the principal amount.
- (v) In the event that the common shares of NOVATEK cease to be listed or are suspended from trading for a period equal to or exceeding 30 consecutive trading days on the TWSE, each bondholder shall have the right to require the Company to redeem the bonds, in whole but not in part, at the Early Redemption Amount.
- (vi) Upon the occurrence of a change of control (as defined in the indenture) of the Company, each bondholder shall have the right to require the Company to redeem the bonds, in whole but not in part, at the Early Redemption Amount.



(14) Long-Term Loans

Details of long-term loans as of December 31, 2022 and 2021 were as follows:

Lenders	As of December 31,		Redemption
	2022	2021	
Unsecured Long-Term Loan from Bank of Taiwan (1)	\$-	\$500,000	Repayable quarterly from March 10, 2022 to December 10, 2024 with monthly interest payments.
Unsecured Long-Term Loan from Bank of Taiwan (2)	2,000,000	450,000	Repayable quarterly from March 24, 2023 to March 24, 2025 with monthly interest payments.
Unsecured Revolving Loan from Mega International Commercial Bank (Note A)	-	500,000	Repayable semi-annually from October 16, 2020 to April 16, 2022 with monthly interest payments.
Unsecured Revolving Loan from Taipei Fubon Bank (Note B)	-	200,000	Repayable annually from August 9, 2020 to August 9, 2023 with monthly interest payments.
Unsecured Revolving Loan from Chang Hwa Commercial Bank (Note C)	-	550,000	Repayable quarterly from January 27, 2021 to October 27, 2022 with monthly interest payments.
Unsecured Revolving Loan from KGI Bank (Note D)	-	500,000	Repayable annually from August 10, 2023 to August 10, 2026 with monthly interest payments.
Unsecured Revolving Loan from First Commercial Bank (1) (Note E and F)	300,000	300,000	Settlement due on February 25, 2026 with monthly interest payments.
Unsecured Revolving Loan from First Commercial Bank (2) (Note E and F)	300,000	300,000	Settlement due on March 15, 2026 with monthly interest payments.
Unsecured Revolving Loan from First Commercial Bank (3) (Note E and F)	200,000	200,000	Settlement due on June 15, 2026 with monthly interest payments.
Unsecured Revolving Loan from Yuanta Commercial Bank (Note G)	-	1,000,000	Repayable annually from March 2, 2023 to March 2, 2026 with monthly interest payments.
Subtotal	2,800,000	4,500,000	
Less: Current portion	(666,667)	(1,216,667)	
Total	\$2,133,333	\$3,283,333	
	For the years ended		
	December 31,		
	2022	2021	
Interest rates applied	0.86% - 1.78%	0.85% - 1.20%	

iv. Terms of Exchange:

- (i) Underlying Securities: Common Shares of NOVATEK
- (ii) Exchange Period: The bonds are exchangeable at any time on or after October 8, 2021 and prior to June 27, 2026, into NOVATEK common shares. If for any reason the Company does not have sufficient NOVATEK common shares to deliver upon the exchange of any bond, then, the Company will pay to the exchanging bondholder an amount in U.S. dollars equal to the product of the volume-weighted average closing price per NOVATEK common share on the TWSE for five consecutive trading days starting from and including the applicable exercise date (as defined in the indenture) (or such fewer number of trading days as are available within ten days starting from and including the applicable exercise date) each converted into USD at the prevailing rate on the day preceding the applicable trading day and the number of NOVATEK common shares that the Company is unable to deliver. 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) Exchange Price and Adjustment: The exchange price was originally NT\$731.25 per NOVATEK common share. The exchange price will be subject to adjustments upon the occurrence of certain events set out in the indenture. The exchange price was NT\$583.3 per NOVATEK common share on December 31, 2022.

v. Redemption on the Maturity Date:

- The bonds will be redeemed with 96.92% principal amount on the maturity date unless:
- (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 exchange right before maturity; or
- (iii) The bonds shall have been redeemed or repurchased by the Company and cancelled.

For the year ended December 31, 2022, the Company has repurchased and cancelled the outstanding principal amount of exchangeable bonds totaling US\$187.1 million with derecognition of the related derivative financial liabilities. The difference between the repurchased amount and the carrying amount recognized in non-operating other gains and losses was immaterial.



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. As of December 31, 2021, the line of credit was fully used. The expiration date of the agreement was April 16, 2022.

Note B: The Company entered into a 5-year loan agreement with Taipei Fubon Bank, effective from February 9, 2018. The agreement offered the Company a revolving line of credit of NT\$2 billion. This line of credit will be reduced starting from the end of the two years after the first use and every twelve months thereafter, with a total of four adjustments. The expiration date of the agreement is August 9, 2023. As of December 31, 2022 and 2021, the unused line of credit were NT\$0.5 billion and NT\$0.8 billion, respectively.

Note C: 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. As of December 31, 2021, the unused line of credit was NT\$0.8 billion. The expiration date of the agreement was October 27, 2022.

Note D: The Company entered into a 5-year loan agreement with KGI Commercial Bank, effective from May 10, 2021. 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 second year after the first use and every twelve months thereafter, with a total of four adjustments. The expiration date of the agreement is August 10, 2026. As of December 31, 2022 and 2021, the unused line of credit were NT\$3 billion and NT\$2.5 billion, respectively.

Note E: First Commercial Bank approved the 1-year credit loan on January 18, 2021, which offered the Company a revolving line of credit of NT\$2 billion starting from the approval date to January 17, 2022. As of December 31, 2021, the unused line of credit was NT\$1.2 billion.

Note F: First Commercial Bank approved the 1-year credit loan on April 14, 2022, which offered the Company a revolving line of credit of NT\$2 billion starting from the approval date to April 13, 2023. As of December 31, 2022, the unused line of credit was NT\$1.2 billion.

Note G: The Company entered into a 5-year loan agreement with Yuanta Commercial Bank, effective from March 3, 2021. The agreement offered the Company a revolving line of credit of NT\$4 billion. This line of credit will be reduced starting from the end of the second year after the contract date and every twelve months thereafter, with a total of four adjustments. The expiration date of the agreement is March 2, 2026. As of December 31, 2022 and 2021, the unused line of credit were NT\$4 billion and NT\$3 billion, respectively.

(15) 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\$1,099 million and NT\$992 million were contributed by the Company for the years ended December 31, 2022 and 2021, 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, 2022 and 2021, total pension expenses of NT\$34 million and NT\$23 million, respectively, were recognized by the Company.

ii. Movements in present value of defined benefit obligation and fair value of plan assets were as follows:

	For the years ended	
	December 31, 2022	2021
Defined benefit obligation at beginning of year	\$ (5,458,333)	\$ (5,561,999)
Items recognized as profit or loss:		
Service cost	(9,911)	(11,009)
Interest cost	(33,842)	(16,130)
Subtotal	(43,753)	(27,139)
Remeasurements recognized in other comprehensive income (loss):		
Arising from changes in demographic assumptions	-	(4,537)
Arising from changes in financial assumptions	227,790	(123,140)
Experience adjustments	(56,959)	(91,268)
Subtotal	170,831	(218,945)
Benefits paid	224,632	349,750
Defined benefit obligation at end of year	\$ (5,106,623)	\$ (5,458,333)

Movements in fair value of plan assets during the year:

	For the years ended	
	December 31, 2022	2021
Beginning balance of fair value of plan assets	\$ 1,581,012	\$ 1,399,345
Items recognized as profit or loss:		
Interest income on plan assets	9,802	4,059
Contribution by employer	745,066	505,890
Benefits paid	(224,632)	(349,750)
Remeasurements recognized in other comprehensive income (loss):		
Return on plan assets, excluding amounts included in interest income	125,973	21,468
Fair value of plan assets at end of year	\$ 2,237,221	\$ 1,581,012

The actual returns on plan assets of the Company for the years ended December 31, 2022 and 2021 were NT\$136 million and NT\$26 million, respectively.

iii. The defined benefit plan recognized on the parent company only balance sheets were as follows:

	As of December 31,	
	2022	2021
Present value of the defined benefit obligation	\$ (5,106,623)	\$ (5,458,333)
Fair value of plan assets	2,237,221	1,581,012
Funded status	(2,869,402)	(3,877,321)
Net defined benefit liabilities, noncurrent recognized on the parent company only balance sheets	\$ (2,869,402)	\$ (3,877,321)

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,	
	2022	2021
Cash	20%	24%
Equity instruments	47%	43%
Debt instruments	22%	23%
Others	11%	10%

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,	
	2022	2021
Discount rate	1.24%	0.62%
Rate of future salary increase	4.25%	4.25%

vi. Expected future benefit payments are as follows:

Year	As of December 31, 2022
2023	\$481,492
2024	450,628
2025	466,474
2026	454,835
2027	454,663
2028 and thereafter	3,270,344
Total	\$5,578,436

The Company expects to make pension fund contribution of NT\$337 million in 2023. The weighted-average durations of the defined benefit obligation were 7 years and 8 years as of December 31, 2022 and 2021, respectively.

vii. Sensitivity analysis:

	As of December 31, 2022	
	Discount rate	Rate of future salary increase
Decrease (increase) in defined benefit obligation	0.5% increase	0.5% decrease
	\$172,801	\$(182,478)
		\$(151,050)
		\$145,000

	As of December 31, 2021	
	Discount rate	Rate of future salary increase
Decrease (increase) in defined benefit obligation	0.5% increase	0.5% decrease
	\$207,999	\$(220,561)
		\$(184,551)
		\$176,567

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.

(16) Deferred Government Grants

	As of December 31,	
	2022	2021
Beginning balance	\$138,510	\$206,099
Arising during the period	60,547	45,657
Recorded in profit or loss:		
Other operating income	(54,333)	(108,831)
Exchange effect	11,133	(4,415)
Ending balance	\$155,857	\$138,510
Current (classified under other current liabilities)	\$57,290	\$47,898
Non-current (classified under other noncurrent liabilities-others)	98,567	90,612
Total	\$155,857	\$138,510

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.

(17) Refund Liabilities (classified under other current liabilities)

	As of December 31,	
	2022	2021
Refund liabilities	\$724,615	\$678,260

(18) Decommissioning liabilities (classified under other noncurrent liabilities-others)

	As of December 31,	
	2022	2021
Decommissioning liabilities	\$366,863	\$-

Under certain applicable agreement, the Company is obligated to dismantling and removing the items of property, plant and equipment and restoring the site on which they are located. Accordingly, the Company recognized the liability pursuant to the present value of the estimated decommissioning and restoration cost for the year ended December 31, 2022.

(19) Equity

a. Capital stock:

- i. The Company had 26,000 million common shares authorized to be issued as of December 31, 2022 and 2021, of which 12,505 million shares and 12,483 million shares were issued as of December 31, 2022 and 2021, respectively, each at a par value of NT\$10.
- ii. The Company had 135 million and 149 million ADSs, which were traded on the NYSE as of December 31, 2022 and 2021, respectively. The total number of common shares of the Company represented by all issued ADSs were 674 million shares and 746 million shares as of December 31, 2022 and 2021, respectively. One ADS represents five common shares.
- iii. On December 5, 2022 and June 9, 2021, the Company issued restricted stocks for its employees in a total of 23 million shares and 1 million shares with a par value of NT\$10 each, respectively. The aforementioned issuance of new shares was approved by the competent authority and the registration was completed. Please refer to Note 6(20) for the information of restricted stocks.

iv. For the years ended December 31, 2022 and 2021, the Company has recalled and cancelled 2 million shares and 2 million shares, respectively of unvested restricted stocks issued for employees according to the issuance plan. The aforementioned reduction of capital was approved by the competent authority and the registration was completed.

v. On September 3, 2021, the Board of Directors' meeting approved the share exchange transaction with CHIPBOND. The Company issued 61 million common shares with a par value of NT\$10 and obtained 53 million common shares newly issued by CHIPBOND. The aforementioned issuance of new shares was approved by the competent authority and the change in share registration was completed. The share exchanged date was November 5, 2021. Please refer to Note 6(3) for further information.

b. Treasury stock:

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. On September 3, 2021, the share exchange transaction with CHIPBOND was approved by FORTUNE's Board of Directors meeting. The 16 million shares of the Company held by FORTUNE were exchanged for 14 million common shares newly issued by CHIPBOND.

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:

- 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 the Company's paid-in capital.
- iv. Appropriating or reversing special reserve by government officials or other regulations.
- v. The remaining, if applicable, may be distributed preferentially as preferred shares dividends for the current year, and if there is still a remaining balance, in addition to the previous year's unappropriated earnings, the Company shall distribute it according to the distribution plan proposed by the Board of Directors according to the dividend policy and submitted to the shareholders' 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 shareholders' 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 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%.

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 appropriation of earnings for 2021 was approved by the shareholders' meeting held on May 27, 2022, while the appropriation of earnings for 2022 was proposed by the Board of Directors' meeting on February 22, 2023. The details of appropriation were as follows:

	Appropriation of earnings (in thousand NT dollars)		Cash dividend per share (NT dollars)	
	2022	2021	2022	2021
Legal reserve	\$8,905,139	\$5,832,570		
Special reserve	(2,180,156)	(3,250,434)		
Cash dividends	45,017,096	-	\$3.60	\$-

In addition, the shareholders' meeting held on May 27, 2022 approved to distribute cash from additional paid-in capital of NT\$37,446 million, at NT\$3 per share.

The aforementioned 2021 appropriation approved by shareholders' meeting was consistent with the resolutions of the Board of Directors' meeting held on February 24, 2022.

The appropriation of 2022 unappropriated retained earnings has not yet been approved by the shareholders' meeting as of the reporting date. Information relevant to the Board of Directors' meeting resolutions and shareholders' meeting approval can be obtained from the "Market Observation Post System" on the website of the TWSE.

Please refer to Note 6(22) for information on the employees and directors' compensation.

(20) Share-Based Payment

## a. Treasury stock plan for employees

In September 2020, the Company executed a compensation plan to offer 105 million shares of treasury stock to qualified employees of the Company and subsidiaries. The compensation cost for the share-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\$21.45 per share. For the stocks vested on the date of grant, the Company recognized the entire compensation cost once granted, whereas for the stocks with requisite service conditions to vest at the end of one year from the date of grant, the Company recognizes the compensation cost over the period in which the services conditions are fulfilled, together with a corresponding increase in equity. The compensation plan had expired in September 2021. For the year ended December 31, 2021, the compensation costs of NT\$226 was recognized in expenses by the Company.

## b. Restricted stock plan for employees

On May 27, 2022, the shareholders approved a compensation plan in their meeting to issue restricted stocks to qualified employees of the Company and subsidiaries without consideration. The maximum shares to be issued are 50 million common shares. The Company is authorized to issue restricted stocks in one tranche or in installments, under the custody of trust institution, within two years from the date of receiving the effective declaration from the competent authority.

The issuance plan was authorized for effective registration by the Securities and Futures Bureau of the FSC and accordingly, 23 million shares of restricted stock for employees were issued without consideration on December 5, 2022. The life of the plan is four years. Beginning from the end of two years since the date of grant, those employees who fulfill both service period and performance conditions set by the Company are gradually eligible to the vested restricted stocks at certain percentage and time frame. For those employees who fail to fulfill the vesting conditions, the Company will recall and cancel their stocks without consideration. During the vesting period, the restricted stock holders are entitled the same rights as those of common stock holders including the right to receive dividends, but are restricted to sell, pledge, set guarantee, transfer, grant, or dispose the restricted stocks in any other ways. Related information can be obtained from the "Market Observation Post System" on the website of the TWSE.

On June 10, 2020, the shareholders approved a compensation plan in their meeting to issue restricted stocks to qualified employees of the Company without consideration. The maximum shares to be issued are 233 million common shares. The Company is authorized to issue restricted stocks in one tranche or in installments, under the custody of trust institution, within one year from the date of receiving the effective declaration from the competent authority.

The issuance plan was authorized for effective registration by the Securities and Futures Bureau of the FSC and accordingly, 1 million shares and 200 million shares of restricted stock for employees were issued without consideration on June 9, 2021 and September 1, 2020, respectively. The life of the plan is four years. Beginning from the end of two years since the date of grant, those employees who fulfill both service period and performance conditions set by the Company are gradually eligible to the vested restricted stocks at certain percentage and time frame. For those employees who fail to fulfill the vesting conditions, the Company will recall and cancel their stocks without consideration. During the vesting period, the restricted stock holders are entitled the same rights as those of common stock holders including the right to receive dividends, but are restricted to sell, pledge, set guarantee, transfer, grant, or dispose the restricted stocks in any other ways. Related information can be obtained from the "Market Observation Post System" on the website of the TWSE.

The aforementioned compensation costs for the equity-settled share-based payment issued in 2022 and 2020 were measured at fair value based on the closing quoted market price of the shares on the grant date, NT\$44.4, NT\$53.0 and NT\$21.8 per share, respectively. The unvested restricted stocks issued on the grant date for employees are recognized in unearned employee compensation as a transitional contra equity account and such account shall be amortized as compensation expense over the vesting period. For the years ended December 31, 2022 and 2021, the compensation costs of NT\$1,341 million and NT\$1,520 million, respectively, were recognized in expenses by the Company.

## c. Stock appreciation right plan for employees

In September 2020, the Company executed a compensation plan to grant 3 million units of cash-settled stock appreciation right to qualified employees of the Company without consideration. One unit of stock appreciation right to employees represents a right to the intrinsic value of one common share of the Company. The life of the plan is four years. Beginning from the end of two years since the date of grant, those employees who fulfill both service period and performance conditions set by the Company are gradually eligible to the vested stock appreciation right at certain percentage and time frame. For those employees who fail to fulfill the vesting conditions, the Company will withdraw their rights without consideration. During the vesting period, the holders of the stock appreciation right are not entitled the same rights as those of common stock holders of the Company.



The compensation cost for the cash-settled share-based payment was measured at fair value initially by using Black-Scholes Option Pricing Model and will be remeasured at the end of each reporting period until settlement. As of December 31, 2022, the assumptions used are as follows:

	Granted in September 2020
Share price of measurement date (NT\$/ per share)	\$40.70
Expected volatility	38.96% - 40.38%
Expected life	0.67 - 1.67 years
Expected dividend yield	5.50%
Risk-free interest rate	0.95% - 1.08%

For the years ended December 31, 2022 and 2021, the compensation costs of NT\$26 million and NT\$32 million, respectively, were recognized in expenses by the Company. The liabilities for stock appreciation right recognized which were classified under other payables and other noncurrent liabilities-others amounted to NT\$38 million and NT\$43 million as of December 31, 2022 and 2021, respectively. The intrinsic value for the liabilities of vested rights was nil.

(21) Operating Revenues

a. Disaggregation of revenue

i. By Product

	For the years ended December 31,	
	2022	2021
Wafer	\$198,452,148	\$152,566,022
Others	11,631,407	6,656,812
Total	\$210,083,555	\$159,222,834

	For the years ended December 31,	
	2022	2021
At a point in time	\$208,583,433	\$158,259,774
Over time	1,500,122	963,060
Total	\$210,083,555	\$159,222,834

ii. By the timing of revenue recognition

b. Contract balances

i. Contract assets, current

	As of December 31,	
	2022	2021
Sales of goods and services	\$565,962	\$494,741
Less: Loss allowance	(355,393)	(320,254)
Net	\$210,569	\$174,487

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 suspension of the joint technology development agreement as disclosed in Note 9(6).

ii. Contract liabilities

	As of December 31,	
	2022	2021
Sales of goods and services	\$1,477,263	\$1,303,404
Current	\$1,039,075	\$880,674
Non-current	438,188	422,730
Total	\$1,477,263	\$1,303,404

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\$781 million and NT\$551 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, 2022 and 2021.

c. The Company's transaction price allocated to unsatisfied performance obligations amounted to NT\$223 million and NT\$167 million as of December 31, 2022 and 2021, 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. 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, 2022 and 2021, the Company recognized costs to fulfill engineering service contracts eligible for capitalization as other current assets which amounted to NT\$544 million and NT\$475 million, respectively. Subsequently, the Company will expense from costs to fulfill a contract to operating costs when the related obligations are satisfied.

(22) Operating Costs and Expenses

a. The Company's employee benefit, depreciation and amortization expenses are summarized as follows:

	For the years ended December 31,					
	2022		2021			
	Operating costs	Operating expenses	Operating costs	Operating expenses		
Employee benefit expenses				Total		
Salaries	\$24,600,829	\$11,228,595	\$35,829,424	\$18,754,654	\$9,144,899	\$27,899,553
Labor and health insurance	1,081,338	350,607	1,431,945	927,634	316,437	1,244,071
Pension	887,883	245,551	1,133,434	775,842	239,049	1,014,891
Remuneration to directors	-	52,330	52,330	-	31,054	31,054
Other employee benefit expenses	268,297	105,634	373,931	244,266	90,240	334,506
Depreciation	20,460,129	1,140,574	21,600,703	23,201,714	1,316,776	24,518,490
Amortization	1,196,263	1,198,688	2,394,951	644,471	1,727,563	2,372,034

b. The Company's policy for compensation of directors, managers and employees is as follows:

The Company set the policy for directors and employees' compensation in the Company's Articles of Incorporation and established the Remuneration Committee to evaluate and monitor the Company's remuneration system for its directors and executive officers. The Company shall assess the performance of directors and executive officers according to the Rules for Performance Assessment of the Board of Directors and the Performance Appraisal for employees of the Company, in order to determine 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 Company developed a comprehensive employee welfare system in accordance with laws, government regulations and regional needs to provide employees with competitive salary and welfare conditions. Employees' compensation includes monthly salary, bonus based on operation performance, and the compensation based on the Company's earnings performance and regulated by the articles. The Company conducts a performance evaluation of all employees every year to understand their job performance and uses such information as a reference for promotions, training and distributing compensation.

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 0.2% 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 Company recognized the employees and directors' compensation in the profit or loss with corresponding other payables during the periods when earned for the years ended December 31, 2022 and 2021. 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 2021 were reported to the shareholders' meeting on May 27, 2022, while the distributions of employees and directors' compensation for 2022 were approved through the Board of Directors' meeting on February 22, 2023. The details of distribution were as follows:

	2022	2021
Employees' compensation – Cash	\$9,160,485	\$4,770,909
Directors' compensation	45,000	25,264



The aforementioned employees and directors' compensation for 2021 reported during the shareholders' meeting was consistent with the resolutions of the Board of Directors' meeting held on February 24, 2022.

Information relevant to the aforementioned employees and directors' compensation can be obtained from the "Market Observation Post System" on the website of the TWSE.

- c. The number of the Company's employees were 15,360 and 14,578, both including 6 non-employee directors as of December 31, 2022 and 2021.
- d. The Company's average employee benefit expenses for the years ended December 31, 2022 and 2021 were NT\$3 million and NT\$2 million, respectively. The Company's average salary expenses for the years ended December 31, 2022 and 2021 were NT\$2 million and NT\$2 million, respectively. The Company's average salary expense adjustment for the year ended December 31, 2022 increased by 21.9%.
- e. The Company has established the Audit Committee in replace of supervisors and therefore the supervisors' remuneration for the years ended December 31, 2022 and 2021 were both nil.

(23) Net Other Operating Income and Expenses

	For the years ended December 31,	
	2022	2021
Net rental loss from property	\$(155,182)	\$(131,790)
Government grants	90,352	173,632
Gain on disposal of property, plant and equipment	450,097	250,900
Others	87,821	106,033
Total	<u>\$473,088</u>	<u>\$398,775</u>

(24) Non-Operating Income and Expenses

	For the years ended December 31,	
	2022	2021
a. Other gains and losses	\$(233,271)	\$1,195,142
Gain (loss) on valuation of financial assets and liabilities at fair value through profit or loss	-	(776)
Loss on disposal of investments	8,983	(2,001,042)
Others	<u>\$(224,288)</u>	<u>\$(806,676)</u>
Total		

Others included the one-time payment to MICRON TECHNOLOGY, INC (MICRON) due to the worldwide settle agreement between the Company and MICRON (Please refer to Note 9(6)) and the losses of financial instrument transaction recognized in 2021.

b. Finance costs

	For the years ended December 31,	
	2022	2021
Interest expenses		
Bonds payable	\$486,079	\$437,055
Bank loans	34,270	47,492
Lease liabilities	93,414	63,317
Others	31,464	124
Financial expenses	62,264	70,963
Total	<u>\$707,491</u>	<u>\$618,951</u>

(25) Components of Other Comprehensive Income (Loss)

	For the year ended December 31, 2022			
	Arising during the period	Reclassification adjustments during the period	Other comprehensive income (loss), before tax effect	Other comprehensive income (loss), net of tax
Items that will not be reclassified subsequently to profit or loss:				
Remeasurements of defined benefit pension plans	\$296,804	\$-	\$296,804	\$(59,361)
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	(4,335,894)	-	(4,335,894)	(283,395)
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which will not be reclassified subsequently to profit or loss	(3,293,972)	-	(3,293,972)	-

For the year ended December 31, 2022

	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	\$8,757,087	\$8,757,087	\$-
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss	622,598	622,598	733,664
Total other comprehensive income (loss)	\$2,046,623	\$2,046,623	\$390,908
			\$2,437,531

For the year ended December 31, 2021

	Other		Other comprehensive income (loss), net of tax
	Reclassification adjustments during the period	comprehensive income (loss), before tax effect	
Items that will not be reclassified subsequently to profit or loss:			
Remeasurements of defined benefit pension plans	\$(197,477)	\$(197,477)	\$39,495
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	5,496,342	5,496,342	(144,138)
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which will not be reclassified subsequently to profit or loss	3,676,023	3,676,023	-
Total other comprehensive income (loss)	\$4,074,888	\$4,074,888	\$3,676,023

For the year ended December 31, 2021

	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	\$(1,827,851)	\$(1,827,851)	\$-
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss	(2,936,135)	(2,936,529)	25,709
Total other comprehensive income (loss)	\$4,210,902	\$4,210,508	\$(78,934)
			\$4,131,574

(26) Income Tax

a. The major components of income tax expense (benefit) for the years ended December 31, 2022 and 2021 were as follows:

i. Income tax expense (benefit) recorded in profit or loss

	For the years ended	
	December 31, 2022	2021
Current income tax expense (benefit):		
Current income tax charge	\$12,245,035	\$4,110,403
Adjustments in respect of current income tax of prior periods	(609,495)	(35,676)
Deferred income tax expense (benefit):		
Deferred income tax related to origination and reversal of temporary differences	2,176,035	494,792
Deferred income tax related to recognition and derecognition of tax losses and unused tax credits	-	447,372
Adjustment of prior year's deferred income tax	10,606	(116,198)
Income tax expense recorded in profit or loss	\$13,822,181	\$4,900,693

b. A reconciliation between income tax expense (benefit) and income before tax at the Company's applicable tax rate were as follows:

	For the years ended December 31,	
	2022	2021
Income before tax	\$101,020,472	\$60,680,948
At statutory income tax rate	20,204,094	12,136,190
Adjustments in respect of current income tax of prior periods	(609,495)	(35,676)
Net changes in loss carry-forward and investment tax credits	(592,586)	(517,930)
Adjustment of deferred tax assets/liabilities for write-downs/reversals and different jurisdictional tax rates	25,754	(117,998)
Tax effect of non-taxable income and non-deductible expenses:		
Tax exempt income	(4,355,008)	(2,995,452)
Investment gain	(892,487)	(3,656,172)
Dividend income	(361,868)	(143,823)
Others	205,080	82,516
Taxes withheld in other jurisdictions	35,979	24,868
Others	162,718	124,170
Income tax expense recorded in profit or loss	\$13,822,181	\$4,900,693

c. Significant components of deferred income tax assets and liabilities were as follows:

	As of December 31,	
	2022	2021
Deferred income tax assets		
Depreciation	\$1,030,969	\$988,934
Pension	566,238	767,822
Refund liabilities	138,617	140,861
Allowance for inventory valuation losses	414,024	360,872
Investment loss	161,054	111,379
Unrealized profit on intercompany sales	906,793	1,125,370
Others	202,964	157,701
Total deferred income tax assets	3,420,659	3,652,939
Deferred income tax liabilities		
Unrealized exchange gain	(534,541)	(580,191)
Investment gain	(2,326,938)	(730,127)
Bonds	(10,322)	(6,353)
Total deferred income tax liabilities	(2,871,801)	(1,316,671)
Net deferred income tax assets	\$548,858	\$2,336,268

ii. Deferred income tax related to components of other comprehensive income (loss)

	For the years ended December 31,	
	2022	2021
(i) Items that will not be reclassified subsequently to profit or loss:		
Remeasurements of defined benefit pension plans	\$(59,361)	\$39,495
Unrealized gains or losses from equity instruments investments measured at fair value through other comprehensive income	(283,395)	(144,138)
Income tax related to items that will not be reclassified subsequently to profit or loss	\$(342,756)	\$(104,643)

(ii) Items that may be reclassified subsequently to profit or loss:

	For the years ended December 31,	
	2022	2021
Share of other comprehensive income (loss) of subsidiaries, associates and joint ventures which may be reclassified subsequently to profit or loss	\$733,664	\$25,709

iii. Income tax charged directly to equity

	For the years ended December 31,	
	2022	2021
Adjustments of changes in net assets of subsidiaries, associates and joint ventures accounted for using equity method	\$(196)	\$-

d. Movement of deferred tax

	For the years ended	
	December 31, 2022	2021
Balance as of January 1	\$2,336,268	\$3,243,415
Amounts recognized in profit or loss during the period	(2,186,641)	(825,966)
Amounts recognized in other comprehensive income (loss)	390,908	(78,934)
Amounts recognized in equity	(196)	-
Exchange adjustments	8,519	(2,247)
Balance as of December 31	\$548,858	\$2,336,268

e. The Company is subject to taxation in Taiwan and other foreign jurisdictions. As of December 31, 2022, the Company's income tax returns for all the fiscal years up to 2020 have been assessed and approved by the R.O.C. Tax Authority. Income tax returns of Singapore branch has been examined by the tax authorities through 2016.

f. Singapore branch obtained two tax incentives granted by the Singapore government for a period of five years from August 2020. The qualifying incomes are either tax-exempt or taxed at concessionary tax rate. The incentive period will end in July 2025.

g. As of December 31, 2022 and 2021, the taxable temporary differences of unrecognized deferred tax liabilities associated with investments in subsidiaries amounted to NT\$21,658 million and NT\$14,904 million, respectively.

(27) Earnings Per Share

	For the years ended	
	December 31, 2022	2021
a. Earnings per share-basic	\$87,198,291	\$55,780,255
Net income attributable to the Company's shareholders	12,305,519	12,218,347
Weighted-average number of ordinary shares for basic earnings per share (thousand shares)	\$7.09	\$4.57
Earnings per share-basic (NTD)		

b. Earnings per share-diluted

	For the years ended	
	December 31, 2022	2021
Net income attributable to the Company's shareholders	\$87,198,291	\$55,780,255
Weighted-average number of ordinary shares for basic earnings per share (thousand shares)	12,305,519	12,218,347
Effect of dilution		
Restricted stocks for employees	156,098	159,478
Employees' compensation	238,242	80,243
Weighted-average number of ordinary shares after dilution (thousand shares)	12,699,859	12,458,068
Earnings per share-diluted (NTD)	\$6.87	\$4.48

(28) Reconciliation of Liabilities Arising from Financing Activities

For the year ended December 31, 2022:

Items	As of		
	January 1, 2022	Cash Flows	December 31, 2022
Short-term loans	\$277,200	\$(287,700)	\$-
Long-term loans (current portion included)	4,500,000	(1,700,000)	-
Bonds payable (current portion included)	40,536,658	(13,305,050)	953,079
Guarantee deposits (current portion included)	12,405,460	14,906,929	1,207,662
Lease liabilities	2,666,750	(342,621)	151,245
Other financial liabilities (Note C)	20,966,209	-	306,902
Non-cash changes			
Foreign exchange (Note A)		\$10,500	\$-
Others (Note B)			-
			2,800,000

(2) Significant Related Party Transactions

a. Operating transactions

	For the years ended	
	December 31,	2021
<u>Operating revenues</u>		
UMC-USA	\$68,554,072	\$48,440,369
Subsidiaries	2,004,783	1,481,020
Associates	4,138,804	2,070,236
Others	40,474	38,797
Total	\$74,738,133	\$52,030,422

Accounts receivable, net

	As of December 31,	
	2022	2021
UMC-USA	\$9,514,735	\$6,298,464
Subsidiaries	184,960	70,202
Associates	323,127	331,258
Others	1,053	11,284
Total	10,023,875	6,711,208
Less: Loss allowance	(12,083)	(12,333)
Net	\$10,011,792	\$6,698,875

The sales price to the above related parties was determined through mutual agreement in reference to market conditions. The collection periods for domestic sales to related parties were month-end 30 - 60 days, while the collection periods for overseas sales were month-end or net 30 - 60 days.

Refund liabilities (classified under other current liabilities)

	As of December 31,	
	2022	2021
UMC-USA	\$107,489	\$49,448
Subsidiaries	56	79
Associates	965	1,442
Others	7	27
Total	\$108,517	\$50,996

For the year ended December 31, 2021:

Items	Non-cash changes			As of December 31, 2021
	As of January 1, 2021	Cash Flows	Foreign exchange (Note A)	
Short-term loans	\$1,283,850	\$(978,500)	\$-	\$277,200
Long-term loans (current portion included)	8,500,000	(4,000,000)	-	4,500,000
Bonds payable (current portion included)	18,690,384	23,703,692	(1,857,418)	40,536,658
Guarantee deposits (current portion included)	162,973	12,315,652	(73,165)	12,405,460 (Note D)
Lease liabilities	2,831,564	(317,301)	185,898	2,666,750
Other financial liabilities (Note C)	20,746,624	-	(163,387)	20,966,209

Note A: Other non-cash changes mainly consisted of discount amortization measured by the effective interest method.

Note B: Please refer to Note 6(13) for the Company's exchangeable bonds.

Note C: Please refer to Note 9(5) for more details on other financial liabilities.

Note D: Guarantee deposits mainly consisted of deposits of capacity reservation.

Note E: Mainly due to the increase in land lease.

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
UNITED MICROELECTRONICS (EUROPE) B.V.	Subsidiary
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Subsidiary
WAVETEK MICROELECTRONICS CORPORATION	Subsidiary
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Subsidiary
UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Subsidiary
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary
FARADAY TECHNOLOGY CORP. and its Subsidiaries (FARADAY)	Associate
UNIMICRON TECHNOLOGY CORP.	Associate
SILICON INTEGRATED SYSTEMS CORP.	The Company's director
PHOTRONICS DNP MASK CORPORATION	Other related parties

## b. Significant asset transactions

Disposal of property, plant and equipment

Item	For the year ended December 31, 2022	
	Disposal amount	Disposal/Deferred gain
Subsidiaries		
Disposal of property, plant and equipment	\$58,289	\$13,723
	For the year ended December 31, 2021	
Item	Disposal amount	Disposal/Deferred gain
Subsidiaries		
Disposal of property, plant and equipment	\$84,112	\$79,615
Others	5,650	5,650
	\$89,762	\$85,265

Acquisition of intangible assets

	Purchase price	
	For the years ended December 31,	
	2022	2021
FARADAY	\$266,053	\$181,254

Acquisition of investments accounted for under the equity method

Please refer to Major Accounting Item 10.

## c. Others

Mask expenditure

	For the years ended December 31,	
	2022	2021
Others	\$2,462,094	\$1,781,017

Other payables of mask expenditure

	As of December 31,	
	2022	2021
Others	\$775,436	\$540,781

## 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,	
	2022	2021
Short-term employee benefits	\$1,738,330	\$426,866
Post-employment benefits	2,782	2,322
Share-based payment	667,955	884,294
Total	\$2,409,067	\$1,313,482

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
	2022	2021		
Refundable Deposits (Time deposit)	\$812,248	\$811,660	Customs	Customs duty guarantee
Refundable Deposits (Time deposit)	218,423	216,140	Science Park Bureau	Collateral for land lease
Refundable Deposits (Time deposit)	29,371	20,619	Science Park Bureau	Collateral for dormitory lease
Refundable Deposits (Time deposit)	64,950	-	National Property Administration, Ministry of Finance	Guarantee for the application of national non-public use land for development
Refundable Deposits (Time deposit)	8,118	-	Bureau of Land Administration, Tainan City Government	Guarantee for the application of national non-public use land for development
Refundable Deposits (Time deposit)	33,526	26,026	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	\$2,166,636	\$2,074,445		



9. SIGNIFICANT CONTINGENCIES AND UNRECOGNIZED CONTRACT COMMITMENTS

- (1) As of December 31, 2022, the Company entrusted financial institutes to open performance guarantee, mainly related to the litigations and customs tax guarantee, amounting to NT\$1.6 billion.
- (2) The Company entered into several patent license agreements and development contracts of intellectual property for a total contract amount of approximately NT\$3.2 billion. As of December 31, 2022, the portion of royalties and development fees not yet recognized was NT\$1.1 billion.
- (3) The Company entered into several construction contracts for the expansion of its operations. As of December 31, 2022, these construction contracts amounted to approximately NT\$63.9 billion and the portion of the contracts not yet recognized was approximately NT\$37.6 billion.
- (4) The Company entered into several wafer-processing contracts with its customers. According to the contracts, the Company shall provide agreed production capacity with the customers.
- (5) 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. The Company and subsidiaries obtained R.O.C. government authority's approval for the investment and invested RMB 8.3 billion in UNITED SEMICONDUCTOR (XIAMEN) CO., LTD. (hereinafter referred to as USCXM) in instalments from January 2015 to September 2018, according to the agreement that the Company obtained the ability to exercise control. Furthermore, based on the agreement, the Company recognized a financial liability in other financial liabilities, current and other noncurrent liabilities-others, respectively for the purchase from the other investors of their investments in USCXM at their original investment cost plus interest totally amounting to RMB 4.9 billion, beginning from the seventh year (2022) following the last instalment payment made by the other investors.

On April 27, 2022, the Board of Directors of The Company approved an investment to increase capital of RMB 4.12 billion or equivalent US dollars (approximately US\$0.66 billion) in its Cayman Islands subsidiary, UNITED MICROCHIP CORPORATION, for its Samoa subsidiary, GREEN EARTH LIMITED, to purchase the shares of USCXM from XIAMEN JINYUAN INDUSTRIAL DEVELOPMENT CO., LTD.; in addition, the Company's subsidiary, HEJIAN TECHNOLOGY (SUZHOU) CO., LTD., plans to purchase shares of USCXM with RMB 0.74 billion or equivalent US dollars (approximately US\$0.12 billion) from FUJIAN ELECTRONICS & INFORMATION INDUSTRY ENTREPRENEURSHIP INVESTMENT LIMITED PARTNERSHIP. As a result, the total investment amount is RMB 4.9 billion. The transaction will be completed in three times from 2022 to 2025 at the ratio of 60%, 20% and 20%, respectively.

- (6) 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") and of MICRON MEMORY TAIWAN CO., LTD.. On June 12, 2020, an adverse ruling issued by the District Court of Taichung in a suit alleged that The Company, two of its current employees and a former employee engaged in the misappropriation of trade secrets. The Company appealed against the sentence. On November 26, 2021, The Company and MICRON announced a settlement agreement between the two companies for all legal proceedings worldwide (the "Settlement Agreement"). Accordingly, MICRON submitted a motion to withdraw the case. On January 27, 2022, the Intellectual Property and Commercial Court announced its ruling of this case and The Company was sentenced to a fine of NT\$20 million, subject to a two-year term of probation.
- 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. In accordance with the Settlement Agreement, the court issued a dismissal of the case with prejudice in January 2022.

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 question, 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 the Company. The court approved withdrawal of one of the patent infringement actions on our motion while the other two actions are still on trial. In accordance with the Settlement Agreement, the Company submitted a motion to withdraw the case, and the motion is currently pending.

The amounts of aforementioned fine from ruling of the Intellectual Property and Commercial Court and the worldwide settlement between the Company and MICRON were recorded in non-operating other losses and have no material financial and operational effect on the Company's business for the years presented.

10. SIGNIFICANT DISASTER LOSS

None.

11. SIGNIFICANT SUBSEQUENT EVENTS

None.



12. OTHERS

(1) Categories of financial instruments

	As of December 31,	
	2022	2021
<b>Financial Assets</b>		
Financial assets at fair value through profit or loss	\$5,628,205	\$6,863,915
Financial assets at fair value through other comprehensive income	14,609,265	18,945,160
Financial assets measured at amortized cost		
Cash and cash equivalents (cash on hand excluded)	122,485,809	93,644,006
Receivables	28,966,603	26,625,888
Refundable deposits	2,195,907	2,112,174
Other financial assets	56,749	26,213,321
<b>Total</b>	<b>\$173,942,538</b>	<b>\$174,404,464</b>
<b>Financial Liabilities</b>		
Financial liabilities at fair value through profit or loss	\$438,397	\$2,380,599
Financial liabilities measured at amortized cost		
Short-term loans	-	277,200
Payables	47,990,925	28,726,170
Guarantee deposits (current portion included)	28,520,051	12,405,460
Bonds payable (current portion included)	28,184,687	40,536,658
Long-term loans (current portion included)	2,800,000	4,500,000
Lease liabilities	3,681,230	2,666,750
Other financial liabilities	21,449,487	20,966,209
<b>Total</b>	<b>\$133,064,777</b>	<b>\$112,459,046</b>

(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. Furthermore, as net investments in foreign subsidiaries are for strategic purposes, they are not hedged by the Company.

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, 2022 and 2021 decreases/increases by NT\$1,161 million and NT\$930 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(11), 6(13) and 6(14) 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, 2022 and 2021 to decrease/increase by NT\$3 million and NT\$5 million, respectively.

#### Equity price risk

The Company's listed and unlisted equity securities and exchange right of the exchangeable bonds issued 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, while exchange right of the exchangeable bonds issued is classified as financial liabilities at fair value through profit or loss as it does not satisfy the definition of an equity component.

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, 2022 and 2021 by NT\$165 million and NT\$241 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, 2022 and 2021 by NT\$579 million and NT\$867 million, respectively.

Please refer to Note 12(7) for sensitivity analysis information of other equity instruments or derivatives that are linked to such equity instruments whose fair value measurement is categorized under Level 3.

#### (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, 2022 and 2021, accounts receivable from the top ten customers represent 81% and 78% 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, 2022				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Payables	\$47,884,530	\$-	\$-	\$-	\$47,884,530
Guarantee deposits	173,755	1,995,445	-	26,350,851	28,520,051
Bonds payable (Note)	322,155	8,742,481	10,593,656	4,151,128	23,809,420
Long-term loans	704,547	1,389,653	821,120	-	2,915,320
Lease liabilities	342,088	688,966	705,842	3,307,730	5,044,626
Other financial liabilities	17,233,129	4,308,513	-	-	21,541,642
<b>Total</b>	<b>\$66,660,204</b>	<b>\$17,125,058</b>	<b>\$12,120,618</b>	<b>\$33,809,709</b>	<b>\$129,715,589</b>
	As of December 31, 2021				
	Less than 1 year	2 to 3 years	4 to 5 years	> 5 years	Total
Non-derivative financial liabilities					
Short-term loans	\$278,538	\$-	\$-	\$-	\$278,538
Payables	28,559,864	-	-	-	28,559,864
Guarantee deposits	108,124	1,756,860	-	10,540,476	12,405,460
Bonds payable (Note)	8,612,255	8,869,431	10,656,506	4,178,008	32,316,200
Long-term loans	1,264,055	900,730	2,500,291	-	4,665,076
Lease liabilities	315,684	571,275	523,081	1,606,883	3,016,923
Other financial liabilities	12,738,246	8,492,466	-	-	21,230,712
<b>Total</b>	<b>\$51,876,766</b>	<b>\$20,590,762</b>	<b>\$13,679,878</b>	<b>\$16,325,367</b>	<b>\$102,472,773</b>

Note : The Company issued unsecured exchangeable bonds where the bondholders may exchange the bonds at any time on or after October 8, 2021 and prior to June 27, 2026 into NOVATEK common shares which the Company holds and accounts for as equity instruments investments measured at fair value through other comprehensive income. The balances of equity instruments investments measured at fair value through other comprehensive income were NT\$3,213 million and NT\$8,482 million as of December 31, 2022 and 2021, respectively. All or any portion of the bonds will be redeemable at put price at the option of bondholders on July 7, 2024 at 98.14% of the principal amount.

(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, 2022 and 2021

None.

(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, 2022		
	Level 1	Level 2	Level 3
Financial assets:			Total
Financial assets at fair value through profit or loss, current	\$669,444	\$-	\$-
Financial assets at fair value through profit or loss, noncurrent	2,818,251	18,000	2,122,510
Financial assets at fair value through other comprehensive income, current	3,213,057	-	-
Financial assets at fair value through other comprehensive income, noncurrent			
Financial assets at fair value through other comprehensive income, noncurrent	8,366,276	-	3,029,932
Financial liabilities:			
Financial liabilities at fair value through profit or loss, current	-	-	438,397
Financial liabilities at fair value through profit or loss, current			
Financial liabilities at fair value through profit or loss, current			438,397

Reconciliation for fair value measurement in Level 3 fair value hierarchy were as follows:

	As of December 31, 2021			
	Level 1	Level 2	Level 3	Total
Financial assets:				
Financial assets at fair value through profit or loss, current	\$761,320	\$-	\$-	\$761,320
Financial assets at fair value through profit or loss, noncurrent	4,234,209	22,375	1,846,011	6,102,595
Financial assets at fair value through other comprehensive income, current	8,482,334	-	-	8,482,334
Financial assets at fair value through other comprehensive income, noncurrent	8,849,869	-	1,612,957	10,462,826
Financial liabilities:				
Financial liabilities at fair value through profit or loss, current	-	-	2,380,599	2,380,599

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, 2022 and 2021, there were no significant transfers between Level 1 and Level 2 fair value measurements.

	Financial assets at fair value through profit or loss		Financial assets at fair value through other comprehensive income	
	Common stock	Funds	Common stock	Preferred stock
As of January 1, 2022	\$1,846,011	\$-	\$1,846,011	\$151,859
Recognized in profit (loss)	(83,046)	(9,119)	(92,165)	-
Recognized in other comprehensive income (loss)	-	-	-	30,688
Acquisition	-	368,664	368,664	-
As of December 31, 2022	\$1,762,965	\$359,545	\$2,122,510	\$182,547

	Financial liabilities at fair value through profit or loss	
	Common stock	Preferred stock
As of January 1, 2022	\$2,380,599	-
Recognized in profit (loss)	(1,433,405)	-
Derecognition	(508,797)	-
As of December 31, 2022	\$438,397	-

	Financial assets at fair value through profit or loss		Financial assets at fair value through other comprehensive income	
	Common stock	Funds	Common stock	Preferred stock
As of January 1, 2021	\$1,913,641	-	\$722,122	\$170,145
Recognized in profit (loss)	186,181	-	-	-
Recognized in other comprehensive income (loss)	-	-	738,976	(18,286)
Disposal	-	-	-	-
As of December 31, 2021	\$1,846,011	-	\$1,461,098	\$151,859

As of December 31, 2022

Category	Valuation technique	Significant unobservable inputs	Interrelationship between inputs and fair value	Sensitivity analysis of interrelationship between inputs and fair value
Embedded derivatives in exchangeable bonds	Binomial tree valuation model	Volatility	The higher the volatility, the higher the estimated fair value is determined.	A change of 5% in the volatility could decrease/increase the Company's profit (loss) for the year ended December 31, 2022 by NT\$77 million and NT\$67 million, respectively.

As of December 31, 2021

Category	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, 2021 by NT\$95 million and NT\$97 million, respectively.

Financial liabilities at fair value through profit or loss

	Derivatives
As of January 1, 2021	\$-
Recognized in profit (loss)	360,494
Issuance	2,020,105
As of December 31, 2021	\$2,380,599

The total profit (loss) of NT\$(92) million and NT\$84 million for the years ended December 31, 2022 and 2021, were included in profit or loss that is attributable to the change in unrealized gains or losses relating to those financial assets without quoted market prices held at the end of the reporting period.

The total profit (loss) of NT\$829 million and NT\$(360) million for the years ended December 31, 2022 and 2021, were included in profit or loss that is attributable to the change in unrealized gains or losses relating to those financial liabilities without quoted market prices held at the end of the reporting period.

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 follows:

As of December 31, 2022

Category	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, 2022 by NT\$98 million and NT\$190 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 cash and cash equivalents, receivables, refundable deposits, other financial assets, short-term loans, payables and guarantee deposits approximate their carrying amount.

As of December 31, 2022

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$28,346,985	\$22,916,330	\$5,430,655	\$-	\$28,184,687
Long-term loans (current portion included)	2,800,000	-	2,800,000	-	2,800,000

As of December 31, 2021

Items	Fair value	Fair value measurements during reporting period using			Carrying amount
		Level 1	Level 2	Level 3	
Bonds payables (current portion included)	\$41,947,014	\$31,442,469	\$10,504,545	\$-	\$40,536,658
Long-term loans (current portion included)	4,500,000	-	4,500,000	-	4,500,000

(8) Significant financial assets and liabilities denominated in foreign currencies

The following information was summarized by the foreign currencies other than the functional currency of the Company. The exchange rates disclosed were used to translate the foreign currencies into the functional currency. The significant financial assets and liabilities denominated in foreign currencies were as follows:

	As of December 31,					
	2022			2021		
	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)	Foreign Currency (thousand)	Exchange Rate	NTD (thousand)
<u>Financial Assets</u>						
<u>Monetary items</u>						
USD:NTD	\$1,464,839	30.65	\$44,897,319	\$882,176	27.62	\$24,365,697
EUR:NTD	71,968	32.54	2,341,854	1,550	31.13	48,258
JPY:NTD	5,993,436	0.2305	1,381,487	2,682,470	0.2385	639,769
SGD:USD	64,752	0.7439	1,476,372	61,404	0.7375	1,250,787
<u>Non-Monetary items</u>						
USD:NTD	115,638	30.65	3,544,293	73,929	27.62	2,041,923
<u>Financial Liabilities</u>						
<u>Monetary items</u>						
USD:NTD	1,082,485	30.75	33,286,419	543,658	27.72	15,070,204
EUR:NTD	72,907	32.94	2,401,543	4,758	31.53	150,009
JPY:NTD	6,519,219	0.2346	1,529,409	2,769,713	0.2426	671,932
RMB:NTD (Note C)	4,838,233	4.434	21,452,727	4,798,085	4.370	20,967,632
SGD:USD	207,996	0.7473	4,779,645	102,625	0.7413	2,108,815

Note A: The foreign currency transactions mentioned above are expressed in terms of the amount before elimination.

Note B: Please refer to the parent company only statements of comprehensive income for the total of realized and unrealized foreign exchange gain and loss. Since there were varieties of foreign currency transactions within the Company, the Company was unable to disclose foreign exchange gain (loss) towards each foreign currency with significant impact.

Note C: Please refer to Note 9(5) for more details on other financial liabilities.



- c. Securities held as of December 31, 2022 (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, 2022: 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, 2022: 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, 2022: 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, 2022: 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, 2022: Please refer to Attachment 8.
  - i. Names, locations and related information of investees as of December 31, 2022 (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 2, 7 and 8.
- (3) Information of major shareholders as of December 31, 2022: Please refer to Attachment 11.

(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 shareholders' value. The Company also ensures its ability to operate continuously to provide returns to shareholders 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 shareholders, return capital to shareholders, 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, 2022 and 2021 were as follows:

	As of December 31,	
	2022	2021
Total liabilities	\$154,459,738	\$123,372,178
Less: Cash and cash equivalents	(122,490,841)	(93,648,701)
Net debt	31,968,897	29,723,477
Total equity	335,107,260	280,979,703
Total capital	\$367,076,157	\$310,703,180
Debt to capital ratios	8.71%	9.57%

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, 2022: Please refer to Attachment 1.
  - b. Endorsement/Guarantee provided to others for the year ended December 31, 2022: Please refer to Attachment 2.



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.

ATTACHMENT 1 (Financing provided to others for the year ended December 31, 2022)  
(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	WAVETEK MICROELECTRONICS CORPORATION	Other receivables - related parties	Yes	\$500,000	\$-	\$-	-	The need for short-term financing	\$-	Business turnover	\$-	None	\$-	\$33,510,726	\$134,042,904

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.

ATTACHMENT 2 (Endorsement/Guarantee provided to others for the year ended December 31, 2022)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

No. (Note 1)	Receiving party		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)
	Endorser/Guarantor	Relationship (Note 2)							
0	UNITED MICROELECTRONICS CORPORATION	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	\$150,798,267	\$17,875,700	\$10,217,964	\$7,878,368	\$-	3.05%	\$150,798,267

**HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.**

No. (Note 1)	Receiving party		Limit of guarantee/endorsement amount for receiving party (Note 6)	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 6)
	Endorser/Guarantor	Relationship (Note 2)							
1	HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	\$14,073,267	\$7,547,231	\$2,976,153	\$2,407,152	\$-	9.52%	\$14,073,267

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, 2022.

Note 5: Total endorsement amount is up to USD 30 million and CNY 2.12 billion. As of December 31, 2022, actual amount provided was NT\$7.88 billion.

Note 6: Limit of total endorsed/guaranteed amount shall not exceed 45% of HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.'s net assets value as of December 31, 2022.

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, 2022.

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, 2022) (Excluding subsidiaries, associates and joint ventures)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

							December 31, 2022		
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)	
Fund	MILLERFUL NO.1 REAL ESTATE INVESTMENT TRUST	-	Financial assets at fair value through profit or loss, current	22,174	\$229,501	1.34	\$229,501	None	
Stock	PIXART IMAGING, INC.	-	Financial assets at fair value through profit or loss, current	1,600	154,240	1.09	154,240	None	
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, current	2,675	96,835	0.22	96,835	None	
Fund	RED ARC GLOBAL INVESTMENTS (IRELAND) ICAV TERM LIQUIDITY FUND	-	Financial assets at fair value through profit or loss, current	57	188,868	0.24	188,868	None	
Fund	TGVEST ASIA PARTNERS II(TAIWAN), L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	182,602	18.00	182,602	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	1,510,238	9.79	1,510,238	None	
Fund	GRANDFULL CONVERGENCE INNOVATION GROWTH FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	176,943	9.38	176,943	None	
Stock	UNITED INDUSTRIAL GASES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	16,680	1,431,868	7.66	1,431,868	None	
Stock	OCTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,530	331,097	6.29	331,097	None	
Stock	AMIC TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,412	-	4.71	-	None	
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	12,521	326,791	4.20	326,791	None	
Stock	KING YUAN ELECTRONICS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	20,483	741,474	1.67	741,474	None	
Stock	ENNOSTAR INC.	-	Financial assets at fair value through profit or loss, noncurrent	5,357	239,748	0.71	239,748	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	18,000	-	18,000	None	
Stock	NOVATEK MICROELECTRONICS CORP.	-	Financial assets at fair value through other comprehensive income, current	10,184	3,213,057	1.67	3,213,057	None	
Stock	SILICON INTEGRATED SYSTEMS CORP.	The Company's director	Financial assets at fair value through other comprehensive income, noncurrent	142,535	2,316,197	19.02	2,316,197	None	
Stock	UNIMICRON HOLDING LIMITED	Associate	Financial assets at fair value through other comprehensive income, noncurrent	20,000	2,847,385	10.74	2,847,385	None	
Stock	ITE TECH, INC.	-	Financial assets at fair value through other comprehensive income, noncurrent	13,960	1,023,266	8.67	1,023,266	None	
Stock	CHIPBOND TECHNOLOGY CORPORATION	-	Financial assets at fair value through other comprehensive income, noncurrent	53,164	3,051,603	7.20	3,051,603	None	
Stock	NOVATEK MICROELECTRONICS CORP.	-	Financial assets at fair value through other comprehensive income, noncurrent	6,261	1,975,210	1.03	1,975,210	None	
Stock-Preferred stock	MTIC HOLDINGS PTE. LTD.	Associate	Financial assets at fair value through other comprehensive income, noncurrent	12,000	182,547	-	182,547	None	

ATTACHMENT 3 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
 (Amount in thousand; Currency denomination in NT dollar or in foreign currencies)

**FORTUNE VENTURE CAPITAL CORP.**

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2022			Shares as collateral (thousand)
				Units (thousand)/bonds/shares (thousand)	Carrying amount	Percentage of ownership (%)	
Bonds	CRYSTALWISE TECHNOLOGY INC.	-	Financial assets measured at amortized cost, current	20	\$20,000	-	N/A
Convertible bonds	GEAR RADIO LTD.	-	Financial assets at fair value through profit or loss, current	-	30,650	-	30,650
Stock	DARCHUN VENTURE CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,514	2,438	19.65	2,438
Stock	SOLARGATE TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	957	-	15.94	-
Fund	TRENDFORCE CAPITAL FUND SPV-TRENDFORCE CAPITAL FUND I SP	-	Financial assets at fair value through profit or loss, noncurrent	15	90,449	14.33	90,449
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,500	28,150	10.23	28,150
Stock	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	10,719	83,606	9.12	83,606
Stock	EXCELSIUS MEDICAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,500	-	7.50	-
Stock	WIN WIN PRECISION TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,751	112,539	6.80	112,539
Stock	TAIWAN REDEYE BIOMEDICAL INC.	-	Financial assets at fair value through profit or loss, noncurrent	743	5,475	6.46	5,475
Stock	LICO TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	6,609	-	5.32	-
Stock	HYE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,466	54,535	4.88	54,535
Stock	AMPAK TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	3,000	213,300	4.53	213,300
Stock	EMPASS TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	374	6,621	4.48	6,621
Stock	MERIDIGEN BIOTECH CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,838	-	4.20	-
Stock	TAIWAN AULISA MEDICAL DEVICES TECHNOLOGIES, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,114	11,777	4.01	11,777
Stock	CENTERA PHOTONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,332	13,321	3.43	13,321
Stock	SUBTRON TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	10,059	262,534	3.37	262,534
Stock	SOLID STATE SYSTEM CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,400	42,480	3.21	42,480
Stock	TOPOINT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,416	135,797	3.11	135,797
Stock	UHT UNITECH COMPANY LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,500	18,825	3.01	18,825
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	223,185	2.96	223,185
Stock	BRIGHT SHELAND INTERNATIONAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	36,840	2.87	36,840
Stock	TAIWAN SEMICONDUCTOR CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	6,741	450,164	2.56	450,164
Stock	CHENFENG OPTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2,214	68,643	2.36	68,643
Fund	VERTEX V (C.I.) FUND L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	177,364	2.07	177,364

ATTACHMENT 3 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**FORTUNE VENTURE CAPITAL CORP.**

		December 31, 2022						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	None
Stock	TERASILIC CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	600	\$8,424	2.05	\$8,424	None
Stock	CHIPBOND TECHNOLOGY CORPORATION	-	Financial assets at fair value through profit or loss, noncurrent	13,989	802,940	1.89	802,940	None
Stock	FORMOSA PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,005	104,461	1.76	104,461	None
Stock	YUEN FOONG YU CONSUMER PRODUCTS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	4,000	139,800	1.50	139,800	None
Stock	ACER E-ENABLING SERVICE BUSINESS INC.	-	Financial assets at fair value through profit or loss, noncurrent	550	74,800	1.33	74,800	None
Fund	VERTEX VI FUND L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	47,866	1.30	47,866	None
Stock	M3 TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	440	40,964	1.08	40,964	None
Stock	CRYSTALWISE TECHNOLOGY INC.	-	Financial assets at fair value through profit or loss, noncurrent	444	4,570	1.01	4,570	None
Stock	CUBTEK INC.	-	Financial assets at fair value through profit or loss, noncurrent	850	41,607	0.93	41,607	None
Stock	POWERTEC ELECTROCHEMICAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	9,930	-	0.70	-	None
Stock	PRENETICS GLOBAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	736	45,117	0.66	45,117	None
Stock	ROARING SUCCESS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	317	3,989	0.64	3,989	None
Stock	CHITEC TECHNOLOGY CORP., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	217	9,192	0.64	9,192	None
Stock	UNICTRON TECHNOLOGIES CORP.	-	Financial assets at fair value through profit or loss, noncurrent	224	14,806	0.47	14,806	None
Stock	EXCELLENCE OPTOELECTRONICS INC.	-	Financial assets at fair value through profit or loss, noncurrent	847	19,013	0.46	19,013	None
Stock	EVERGREEN AVIATION TECHNOLOGIES CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,600	130,720	0.45	130,720	None
Stock	AIROHA TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	400	213,600	0.27	213,600	None
Stock	CHANG WAH TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,179	64,725	0.23	64,725	None
Stock	SOLAR APPLIED MATERIALS TECHNOLOGY CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,173	37,599	0.20	37,599	None
Stock	WALTOP INTERNATIONAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	5	-	0.15	-	None
Stock	SHINFOX ENERGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	66	5,603	0.03	5,603	None
Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	21	10	0.02	10	None
Stock-Preferred Stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	311	1,505	-	1,505	None
Stock-Preferred Stock	FLOODIA CORP.	-	Financial assets at fair value through profit or loss, noncurrent	2	-	-	-	None
Stock-Preferred Stock	EJOULE INTERNATIONAL LIMITED	-	Financial assets at fair value through profit or loss, noncurrent	23,909	231,194	-	231,194	None
Stock-Preferred Stock	ACEPODIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,055	46,313	-	46,313	None

ATTACHMENT 3 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

**FORTUNE VENTURE CAPITAL CORP.**

		December 31, 2022						
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)
Stock-Preferred Stock	BRA VOTEK CORP.	-	Financial assets at fair value through profit or loss, noncurrent	3,050	\$99,638	-	\$99,638	None
Stock-Preferred Stock	GEAR RADIO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,400	14,904	-	14,904	None
Stock-Preferred Stock	SONATUS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	897	119,985	-	119,985	None
Stock-Preferred Stock	HAHOW INC.	-	Financial assets at fair value through profit or loss, noncurrent	151,217	122,600	-	122,600	None
Stock-Preferred Stock	TAISHIN FINANCIAL HOLDING CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,305	56,681	-	56,681	None
Convertible bonds	BRIGHT SHELAND INTERNATIONAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	170	16,371	-	16,371	None
Convertible bonds	PHISON ELECTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,140	110,580	-	110,580	None
Convertible bonds	EPISIL-PRECISION INC.	-	Financial assets at fair value through profit or loss, noncurrent	50	4,800	-	4,800	None
Convertible bonds	ELITE MATERIAL CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	300	29,460	-	29,460	None
Convertible bonds	GIANT MANUFACTURING CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	100	9,630	-	9,630	None
Convertible bonds	GENESYS LOGIC, INC.	-	Financial assets at fair value through profit or loss, noncurrent	20	2,040	-	2,040	None
Convertible bonds	CHUNG HWA CHEMICAL INDUSTRIAL WORKS,LTD.	-	Financial assets at fair value through profit or loss, noncurrent	20	2,020	-	2,020	None
Stock	SHIN-ETSU HANDOTAI TAIWAN CO., LTD.	-	Financial assets at fair value through other comprehensive income, noncurrent	10,500	580,335	7.00	580,335	None

**TILC CAPITAL CO., LTD.**

		December 31, 2022						
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)
Fund	EVERY I CAPITAL ASIA FUND, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	\$252,478	18.18	\$252,478	None
Stock	BEAUTY ESSENTIALS INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	150,500	129,159	13.99	129,159	None
Fund	OAK HILL OPPORTUNITIES FUND, SEGREGATED PORTFOLIO	-	Financial assets at fair value through profit or loss, noncurrent	13	379,653	13.16	379,653	None
Stock	ARTERY TECHNOLOGY CORP.	Associate	Financial assets at fair value through profit or loss, noncurrent	5,112	178,460	9.99	178,460	None
Fund	EVERY I CAPITAL ASIA FUND II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	133,599	7.14	133,599	None
Stock	EVERGLORY RESOURCE TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,200	13,512	4.91	13,512	None
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	240,460	4.24	240,460	None
Stock	CHENFENG OPTRONICS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	3,321	102,964	3.53	102,964	None
Stock	WELLYSUN INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,000	13,690	2.20	13,690	None



ATTACHMENT 3 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

**TLC CAPITAL CO., LTD.**

		December 31, 2022						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	ADVANCE MATERIALS CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,387	\$10,817	1.18	\$10,817	
Stock	PLAYNITRIDE INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,070	106,583	1.00	106,583	
Stock	HANDA PHARMACEUTICALS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,009	124,605	0.78	124,605	
Stock	SIMPLO TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	1,422	405,408	0.77	405,408	
Stock	TXC CORP.	-	Financial assets at fair value through profit or loss, noncurrent	1,978	163,580	0.64	163,580	
Stock	POWTEC ELECTROCHEMICAL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	6,470	-	0.46	-	
Stock	YUEN FOONG YU CONSUMER PRODUCTS CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	600	20,970	0.22	20,970	
Stock	EVERGREEN STEEL CORP.	-	Financial assets at fair value through profit or loss, noncurrent	536	27,658	0.13	27,658	
Convertible bonds	ALL COSMOS BIO-TECH HOLDING CORP.	-	Financial assets at fair value through profit or loss, noncurrent	200	18,990	-	18,990	
Capital-Preferred stock	CHIPBETTER MICROELECTRONICS INC. (formerly GUANGXI CHIPBETTER MICROELECTRONICS INC.)	-	Financial assets at fair value through profit or loss, noncurrent	672	48,498	-	48,498	
Capital-Preferred stock	CANAANTEK CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	190	66,992	-	66,992	
Capital-Preferred stock	HEFEI TBSTEST TECHNOLOGIES CO., LTD	-	Financial assets at fair value through profit or loss, noncurrent	168	29,573	-	29,573	
Capital-Preferred stock	LINSI MICROELECTRONICS (SHENZHEN) CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	459	41,727	-	41,727	
Capital-Preferred stock	WUHAN JIMU INTELLIGENT TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	41	27,020	-	27,020	
Capital-Preferred stock	ZHEJIANG SAXUM SEMICONDUCTOR TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	280	34,005	-	34,005	
Capital-Preferred stock	NINGBO JSAB SEMICONDUCTOR CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	115	37,736	-	37,736	
Capital-Preferred stock	MZ OPTOELECTRONIC TECHNOLOGY (SHANGHAI) CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	118	26,304	-	26,304	
Stock-Preferred stock	YOUJIA GROUP LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,685	438	-	438	
Stock-Preferred stock	AL07 LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,377	-	-	-	
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	GAME VIDEO LTD.	-	Financial assets at fair value through profit or loss, noncurrent	279	-	-	-	
Stock-Preferred stock	EJOULE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	50,767	543,213	-	543,213	
Stock-Preferred stock	TURNING POINT LASERS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,000	34,606	-	34,606	
Stock-Preferred stock	SILC TECHNOLOGIES, INC.	-	Financial assets at fair value through profit or loss, noncurrent	2,393	64,970	-	64,970	
Stock-Preferred stock	SINO APPLIED TECHNOLOGY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	855	13,792	-	13,792	
Stock-Preferred stock	RAMON SPACE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	249	47,184	-	47,184	
Stock-Preferred stock	XMEMS LABS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,494	121,113	-	121,113	

316 ATTACHMENT 3 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UMC CAPITAL CORP.**

Type of securities	Name of securities	Relationship	Financial statement account	December 31, 2022		Shares as collateral (thousand)
				Units (thousand) bonds/ shares (thousand)	Fair value/ Net assets value	
Convertible bonds	CLOUDWORDS, INC.	-	Financial assets at fair value through profit or loss, current	- USD	190	None
Capital	TRANSLINK MANAGEMENT III, L.L.C.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,812	2,812
Fund	TRANSLINK CAPITAL PARTNERS III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	21,212	21,212
Fund	TRANSLINK CAPITAL PARTNERS IV, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	21,845	21,845
Fund	TRANSLINK CAPITAL PARTNERS V, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,862	2,862
Stock	OCTTASIA INVESTMENT HOLDING INC.	-	Financial assets at fair value through profit or loss, noncurrent	5,594 USD	13,340	13,340
Stock	ALL-STARS SP IV LTD.	-	Financial assets at fair value through profit or loss, noncurrent	7 USD	6,769	6,769
Fund	TRANSLINK CAPITAL PARTNERS II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	4,679	4,679
Stock	CNEX LABS, INC.	-	Financial assets at fair value through profit or loss, noncurrent	454	-	None
Fund	GROVE VENTURES II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	2,784	2,784
Fund	GROVE VENTURES III, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	386	386
Fund	SIERRA VENTURES XI, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	16,793	16,793
Fund	STORM VENTURES FUND V, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	10,527	10,527
Stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	237 USD	15	15
Fund	SIERRA VENTURES XII, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	- USD	3,660	3,660
Stock	NEUROBLADE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	374 USD	899	899
Stock	APIER GROUP INC.	-	Financial assets at fair value through profit or loss, noncurrent	320 USD	3,270	3,270
Stock-Preferred stock	ACHIEVE MADE INTERNATIONAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,644 USD	878	878
Stock-Preferred stock	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	1,349	-	None
Stock-Preferred stock	ATSCALE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	8,520 USD	5,006	5,006
Stock-Preferred stock	SENSIFREE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	614	-	None
Stock-Preferred stock	DCARD HOLDINGS LTD.	-	Financial assets at fair value through profit or loss, noncurrent	30,075 USD	4,818	4,818
Stock-Preferred stock	GCT SEMICONDUCTOR, INC.	-	Financial assets at fair value through profit or loss, noncurrent	175 USD	1	1
Stock-Preferred stock	FORTEMEDIA, INC.	-	Financial assets at fair value through profit or loss, noncurrent	12,241 USD	5,144	5,144
Stock-Preferred stock	SIFOTONICS TECHNOLOGIES CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	3,500 USD	1,822	1,822
Stock-Preferred stock	NEVO ENERGY, INC.	-	Financial assets at fair value through profit or loss, noncurrent	4,980	-	None

ATTACHMENT 3 (Securities held as of December 31, 2022) (Excluding subsidiaries, associates and joint ventures)

(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UMC CAPITAL CORP.**

							December 31, 2022				
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)			
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	3,573	USD	3,573			
Stock-Preferred stock	EAST VISION TECHNOLOGY LTD.	-	Financial assets at fair value through profit or loss, noncurrent	2,770	-	-	-	-			
Stock-Preferred stock	BLUESPACE.AI, INC.	-	Financial assets at fair value through profit or loss, noncurrent	533	USD	1,818	USD	1,818			
Stock-Preferred stock	REED SEMICONDUCTOR CORP.	-	Financial assets at fair value through profit or loss, noncurrent	3,864	USD	1,418	USD	1,418			
Stock-Preferred stock	A.A.A TARANIS VISUAL LTD.	-	Financial assets at fair value through profit or loss, noncurrent	490	USD	5,577	USD	5,577			
Stock-Preferred stock	NEUROBLADE LTD.	-	Financial assets at fair value through profit or loss, noncurrent	333	USD	1,701	USD	1,701			
Stock-Preferred stock	HYPERLIGHT CORP.	-	Financial assets at fair value through profit or loss, noncurrent	249	USD	1,870	USD	1,870			
Stock-Preferred stock	AMMAX BIO, INC.	-	Financial assets at fair value through profit or loss, noncurrent	493	USD	1,000	USD	1,000			
Stock-Preferred stock	CLEARMIND BIOMEDICAL, INC.	-	Financial assets at fair value through profit or loss, noncurrent	400	USD	1,000	USD	1,000			
Convertible bonds	GLYMPSE, INC.	-	Financial assets at fair value through profit or loss, noncurrent	-	USD	-	USD	-			

**TERA ENERGY DEVELOPMENT CO., LTD.**

							December 31, 2022				
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)			
Stock	TIAN TAI PHOTOELECTRICITY CO., LTD.	-	Financial assets at fair value through profit or loss, noncurrent	357	\$6,105	1.18	\$6,105	None			

**SINO PARAGON LIMITED**

							December 31, 2022				
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)			
Fund	SPARKLABS GLOBAL VENTURES FUND I, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	\$81,930	11.13	\$81,930	None			
Fund	SPARKLABS KOREA FUND II, L.P.	-	Financial assets at fair value through profit or loss, noncurrent	-	42,294	5.00	42,294	None			

ATTACHMENT 4 (Individual securities acquired or disposed of with accumulated amount exceeding the lower of NT\$500 million or 20 percent of the capital stock for the year ended December 31, 2022)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

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	Units (thousand)/ bonds/shares (thousand)	Amount	Units (thousand)/ bonds/shares (thousand)	Amount	Units (thousand)/ bonds/shares (thousand)	Amount

None

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, 2022)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

Where counter-party is a related party, details of prior transactions												
Name of properties	Transaction date	Transaction amount	Payment status	Counter-party	Relationship	Former holder of property	Relationship between former holder and acquirer of property	Date of transaction	Transaction amount	Price reference	Date of acquisition and status of utilization	Other commitments
Fab	2022.03.25 - 2022.12.20	\$1,746,057	By the construction progress	L&K ENGINEERING (SUZHOU) CO., LTD. SINGAPORE BRANCH	Third party	N/A	N/A	N/A	N/A	Negotiation	Manufacturing purpose	None
Fab	2022.01.05 - 2022.05.24	688,490	By the construction progress	GANG-WEI CONSTRUCTIO N CO.,LTD	Third party	N/A	N/A	N/A	N/A	Negotiation	Manufacturing purpose	None
Fab	2022.07.05 - 2022.12.20	21,866,256	By the construction progress	L&K ENGINEERING CO.,LTD. (SINGAPORE BRANCH)	Third party	N/A	N/A	N/A	N/A	Negotiation	Manufacturing purpose	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, 2022)  
 (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
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None

ATTACHMENT 7 ( Related party transactions for purchases and sales amounts exceeding the lower of NTD\$100 million or 20 percent of capital stock for the year ended December 31, 2022)  
(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				Notes and accounts receivable (payable)	
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note	
UMC GROUP (USA)	Subsidiary	Sales	\$68,554,072	33 %	Net 60 days	N/A	N/A	\$9,502,922	34 %		
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	3,648,688	2 %	Month-end 60 days	N/A	N/A	265,994	1 %		
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary	Sales	1,143,280	1 %	Net 30 days	N/A	N/A	16,774	0 %		
UNITEDDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Subsidiary	Sales	656,472	0 %	Net 30 days	N/A	N/A	6,734	0 %		
ARTERY TECHNOLOGY CORPORATION, LTD.	Associate	Sales	429,636	0 %	Month-end 60 days	N/A	N/A	56,864	0 %		
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Subsidiary	Sales	164,855	0 %	Net 60 days	N/A	N/A	151,430	1 %		
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Subsidiary	Purchases	1,036,546	1 %	Net 30 days or 45 days	N/A	N/A	174	0 %		

**UMC GROUP (USA)**

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				Notes and accounts receivable (payable)	
		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 (Sales)	2,232,913	91 %	Net 60 days	N/A	N/A	310,688	88 %		
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Associate	Purchases	134,955	5 %	Net 60 days	N/A	N/A	24,327	7 %		
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Associate	Purchases	52,632	2 %	Net 60 days	N/A	N/A	10,175	3 %		
WAVETEK MICROELECTRONICS CORPORATION	Associate	Purchases	23,631	1 %	Net 60 days	N/A	N/A	2,669	1 %		
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Associate	Purchases	18,121	1 %	Net 60 days	N/A	N/A	4,823	1 %		

**UNITED SEMICONDUCTOR JAPAN CO., LTD.**

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				Notes and accounts receivable (payable)	
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note	
UMC GROUP (USA)	Associate	Sales	18,773,725	18 %	Net 60 days	N/A	N/A	3,228,122	16 %		

**UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.**

Counter-party	Relationship	Transactions				Details of non-arm's length transaction				Notes and accounts receivable (payable)	
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note	
UMC GROUP (USA)	Associate	Sales	354,056	6 %	Net 60 days	N/A	N/A	70,810	10 %		
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	293,264	5 %	Month-end 60 days	N/A	N/A	39,273	6 %		
UNITED MICROELECTRONICS CORPORATION	The ultimate parent of the Company	Sales	234,144	4 %	Net 30 days or 45 days	N/A	N/A	39	0 %		
UNITEDDDS SEMICONDUCTOR (SHANDONG) CO., LTD.	Associate	Sales	33,527	1 %	Month-end 30 days	N/A	N/A	39	0 %		



ATTACHMENT 7 ( Related party transactions for purchases and sales amounts exceeding the lower of NTD\$100 million or 20 percent of capital stock for the year ended December 31, 2022)  
 (Amount in thousand; Currency denomination in NTD or in foreign currencies)

**WAYTEK MICROELECTRONICS CORPORATION**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	\$716,357	21 %	Net 60 days	N/A	N/A	\$81,819	33 %	
UNITED MICROELECTRONICS CORPORATION	Parent company	Sales	124,178	4 %	Month-end 30 days	N/A	N/A	-	-	

**HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
UMC GROUP (USA)	Associate	Sales	124,808	3 %	Net 60 days	N/A	N/A	RMB 33,591	8 %	
UNITEDPS SEMICONDUCTOR (SHANDONG) CO., LTD.	Subsidiary	Sales	70,548	2 %	Month-end 30 days	N/A	N/A	RMB 2,167	0 %	
FARADAY TECHNOLOGY CORPORATION	Associate	Sales	26,303	1 %	Net 45 days	N/A	N/A	RMB 99	0 %	

**UNITEDDS SEMICONDUCTOR (SHANDONG) CO., LTD.**

Counter-party	Relationship	Transactions			Details of non-arm's length transaction			Notes and accounts receivable (payable)		
		Purchases (Sales)	Amount	Percentage of total purchases (sales)	Term	Unit price	Term	Balance	Percentage of total receivables (payable)	Note
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Parent company	Purchases	68,725	51 %	Month-end 30 days	N/A	N/A	RMB 2,167	68 %	
UNITED MICROELECTRONICS CORPORATION	The ultimate parent of the Company	Purchases	54,560	41 %	Net 30 days	N/A	N/A	RMB 503	16 %	

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, 2022)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**UNITED MICROELECTRONICS CORPORATION**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Subsidiary	\$-	\$9,502,922	8.68	\$-	-	\$9,522,598	\$11,819
FARADAY TECHNOLOGY CORPORATION	Associate	-	265,994	13.59	-	-	221,680	222
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Subsidiary	-	151,430	2.02	-	-	151,440	-

**UNITED SEMICONDUCTOR JAPAN CO., LTD.**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Associate	JPY -	3,228,122 JPY	7.47	JPY -	-	3,228,122 JPY	-

**UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Associate	RMB -	70,810 RMB	5.80	RMB -	-	34,285 RMB	55
FARADAY TECHNOLOGY CORPORATION	Associate	RMB -	39,273 RMB	6.71	RMB -	-	20,200 RMB	30

**HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.**

Counter-party	Relationship	Ending balance		Turnover rate (times)	Overdue receivables		Amount received in subsequent period	Loss allowance
		Notes receivable	Accounts receivable		Amount	Collection status		
UMC GROUP (USA)	Associate	RMB -	33,591 RMB	5.25	RMB 0	Collection in subsequent period	33,591 RMB	0

ATTACHMENT 9 (Names, locations and related information of investee companies as of December 31, 2022) (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, 2022			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	\$2,017,903	\$100,308		
UNITED MICROELECTRONICS (EUROPE) B.V.	The Netherlands	Marketing support activities	USD 5,421	USD 5,421	9	100.00	151,501	1,268	1,268	
UMC CAPITAL CORP.	Cayman Islands	Investment holding	USD 81,500	USD 81,500	71,663	100.00	5,206,591	(648,710)	(672,708)	
GREEN EARTH LIMITED	Samoa	Investment holding	USD 977,000	USD 977,000	977,000	100.00	12,563,053	1,061,810	1,061,810	
TLC CAPITAL CO., LTD.	Taipei City, Taiwan	Venture capital	USD 4,610,000	USD 4,610,000	433,942	100.00	4,956,399	290,738	290,738	
UMC INVESTMENT (SAMOA) LIMITED	Samoa	Investment holding	USD 1,520	USD 1,520	1,520	100.00	42,895	4,030	4,030	
FORTUNE VENTURE CAPITAL CORP.	Taipei City, Taiwan	Consulting and planning for venture capital	USD 3,440,053	USD 3,440,053	607,485	100.00	6,542,236	(701,144)	(647,625)	
UMC KOREA CO., LTD.	Korea	Marketing support activities	KRW 550,000	KRW 550,000	110	100.00	23,341	1,877	1,877	
OMNI GLOBAL LIMITED	Samoa	Investment holding	USD 4,300	USD 4,300	4,300	100.00	749,679	54,871	54,871	
SINO PARAGON LIMITED	Samoa	Investment holding	USD 2,600	USD 2,600	2,600	100.00	127,018	(11,202)	(11,202)	
BEST ELITE INTERNATIONAL LIMITED	British Virgin Islands	Investment holding	USD 309,102	USD 309,102	664,966	100.00	32,001,872	8,372,540	8,372,540	
UNITED SEMICONDUCTOR JAPAN CO., LTD.	Japan	Sales and manufacturing of integrated circuits	JPY 64,421,068	JPY 64,421,068	116,247	100.00	24,786,883	7,159,811	7,159,811	
WAYTEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	USD 1,903,741	USD 1,903,741	148,112	79.50	1,281,358	579,486	461,014	
MITC HOLDINGS PTE. LTD.	Singapore	Investment holding	SGD 12,000	SGD 12,000	12,000	45.44	-	(74,089)	-	
UNITECH CAPITAL INC.	British Virgin Islands	Investment holding	USD 21,000	USD 21,000	21,000	42.00	426,070	(1,149,007)	(482,583)	
TRIKNIGHT CAPITAL CORPORATION	Taipei City, Taiwan	Investment holding	USD 2,342,800	USD 2,342,800	326,734	40.00	2,117,678	(3,511,023)	(1,404,409)	
HSUN CHIEH INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding	USD 336,241	USD 336,241	1,201,774	36.49	9,530,916	(11,190,316)	(4,139,132)	
YANN YUAN INVESTMENT CO., LTD.	Taipei City, Taiwan	Investment holding	USD 2,300,000	USD 2,300,000	138,000	26.78	7,299,414	1,325,247	368,190	
FARADAY TECHNOLOGY CORPORATION	Hsinchu City, Taiwan	Design of application-specific integrated circuit	USD 38,918	USD 38,918	34,240	13.78	1,874,131	2,381,449	328,067	
UNIMICRON TECHNOLOGY CORP.	Taoyuan City, Taiwan	Manufacturing of PCB	USD 2,438,565	USD 2,438,565	196,136	13.27	13,460,838	27,518,508	3,679,607	

ATTACHMENT 9 (Names, locations and related information of investee companies as of December 31, 2022) (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, 2022				Investment income (loss) recognized	Note	
			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	7,800	100.00	\$116,787	\$36,293	\$36,293
PURIUMFIL INC.	Hsinchu City, Taiwan	Chemicals and filtration products & Microcontamination control service	10,000	10,000	1,000	40.00	14,840	18,281	7,783
UNITED LED CORPORATION HONG KONG LIMITED	Hongkong	Investment holding	USD	22,500 USD	22,500	25.14	97,156	(12,849)	(3,230)
WAVETEK MICROELECTRONICS CORPORATION	Hsinchu County, Taiwan	Sales and manufacturing of integrated circuits	8,856	8,856	1,194	0.64	11,071	579,486	3,715

**TILC CAPITAL CO., LTD.**

Investee company	Address	Main businesses and products	Investment as of December 31, 2022				Investment income (loss) recognized	Note	
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)			Carrying amount
SOARING CAPITAL CORP.	Samoa	Investment holding	USD	900 USD	900	100.00	\$9,719	\$2,423	\$2,423
HSUN CHIEF CAPITAL CORP.	Samoa	Investment holding	USD	8,000 USD	8,000	40.00	210,690	(100,907)	(40,363)
YSENSE CO., LTD.	Taipei City, Taiwan	Medical devices, measuring equipment, reagents and consumables	95,916	95,916	4,251	23.98	-	(18,455)	(0)

**UMC CAPITAL CORP.**

Investee company	Address	Main businesses and products	Investment as of December 31, 2022				Investment income (loss) recognized	Note		
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)			Carrying amount	Net income (loss) of investee company
TRANSLINK CAPITAL PARTNERS I, L.P.	Cayman Islands	Investment holding	USD	3,873 USD	3,934	10.38	USD	1,780	USD	(5,561)

**TERA ENERGY DEVELOPMENT CO., LTD.**

Investee company	Address	Main businesses and products	Investment as of December 31, 2022				Investment income (loss) recognized	Note	
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)			Carrying amount
EVERRICH ENERGY INVESTMENT (HK) LIMITED	Hongkong	Investment holding	USD	750 USD	750	100.00	\$46,301	\$2,669	\$2,669

**WAVETEK MICROELECTRONICS CORPORATION**

Investee company	Address	Main businesses and products	Investment as of December 31, 2022				Investment income (loss) recognized	Note	
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)			Carrying amount
WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED	Samoa	Investment holding	USD	1,650 USD	1,650	100.00	\$2,968	\$(13)	\$(13)

ATTACHMENT 9 (Names, locations and related information of investee companies as of December 31, 2022) (Not including investment in Mainland China)  
(Amount in thousand; Currency denomination in NTD or in foreign currencies)

**WAVETEK MICROELECTRONICS INVESTMENT (SAMOA) LIMITED**

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2022			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
WAVETEK MICROELECTRONICS CORPORATION (USA)	USA	Marketing service	USD 60	USD 60	60	100.00	\$2,931	\$(17)	\$(17)	

**BEST ELITE INTERNATIONAL LIMITED**

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2022			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
INFOSHINE TECHNOLOGY LIMITED	British Virgin Islands	Investment holding	USD 354,000	USD 354,000	-	100.00	\$32,036,736	\$8,372,192	\$8,372,192	

**INFOSHINE TECHNOLOGY LIMITED**

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2022			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
OAKWOOD ASSOCIATES LIMITED	British Virgin Islands	Investment holding	USD 354,000	USD 354,000	-	100.00	\$32,036,736	\$8,372,192	\$8,372,192	

**OMNI GLOBAL LIMITED**

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2022			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
UNITED MICROTTECHNOLOGY CORPORATION (CALIFORNIA)	USA	Research & Development	USD 1,000	USD 1,000	0	100.00	\$40,752	\$1,733	\$1,733	
ECP VITA PTE. LTD.	Singapore	Insurance	USD 9,000	USD 9,000	9,000	100.00	690,921	51,397	51,397	

**GREEN EARTH LIMITED**

Investee company	Address	Main businesses and products	Initial Investment		Investment as of December 31, 2022			Net income (loss) of investee company	Investment income (loss) recognized	Note
			Ending balance	Beginning balance	Number of shares (thousand)	Percentage of ownership (%)	Carrying amount			
UNITED MICROCHIP CORPORATION	Cayman Islands	Investment holding	USD 974,050	USD 974,050	974,050	100.00	\$12,535,675	\$1,059,106	\$1,059,106	

ATTACHMENT 10 (Investment in Mainland China as of December 31, 2022)  
(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, 2022	Accumulated outflow of investment from Taiwan as of December 31, 2022	Net income (loss) of investee company	Percentage of ownership	Investment income (loss) recognized (Note 2)	Carrying amount as of December 31, 2022	Accumulated inward remittance of earnings as of December 31, 2022
				Outflow	Inflow							
UNITRUTH ADVISOR (SHANGHAI) CO., LTD.	Investment Holding and advisory	\$24,520 (USD)	(i) SOARING CAPITAL CORP.	\$-	\$-	(USD) 800	(USD) 800	\$24,520	100.00%	\$2,453 (iii)	\$9,616	\$-
EVERRICH (SHANDONG) ENERGY CO., LTD.	Solar engineering integrated design services	22,988 (USD)	(ii) EVERRICH ENERGY INVESTMENT (HK) LIMITED	-	-	(USD) 750	(USD) 750	22,988	100.00%	2,695 (ii)	45,934	134,615 (USD) 4,392
UNITED LED CORPORATION	Research, manufacturing and sales in LED epitaxial wafers	2,574,600 (USD)	(i) UNITED LED CORPORATION HONG KONG LIMITED	-	-	(USD) 20,250	(USD) 20,250	620,662	25.14%	(3,433) (RMB) (783)	93,984 (RMB) 21,438	-
HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	Sales and manufacturing of integrated circuits	13,788,969 (RMB)	(ii) OAKWOOD ASSOCIATES LIMITED	-	-	(USD) 309,102	(USD) 309,102	9,473,976	99.9985% (Note 4)	8,218,584 (RMB) 1,874,677	31,273,453 (RMB) 7,133,543	-
UNITED SEMICONDUCTOR (SHANDONG) CO., LTD.	Design support of integrated circuits	131,520 (RMB)	(iii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	-	-	-	-	368,120 (RMB) 83,969	99.9985%	368,111 (RMB) 83,967	790,953 (RMB) 180,418	-
UNITED SEMICONDUCTOR (XIAMEN) CO., LTD.	Sales and manufacturing of integrated circuits	68,819,129 (RMB)	(ii) UNITED MICROCHIP CORPORATION and (iii) HEJIAN TECHNOLOGY (SUZHOU) CO., LTD.	-	-	(USD) 964,966	(USD) 964,966	29,576,208	71.86%	2,312,021 (RMB) 527,377	21,655,570 (RMB) 4,939,683	-
Accumulated investment in Mainland China as of December 31, 2022				\$39,718,354 (USD) 1,295,868	\$-	\$-	\$201,064,356	\$2,453				
Investment amounts authorized by Investment Commission, MOEA				\$89,231,743 (USD) 2,911,313	Upper limit on investment		\$201,064,356					

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 statements were 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, 2022, 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 2,505,944 thousand. As of December 31, 2022, the amount of investment USD 855,022 thousand has not yet been remitted.

ATTACHMENT 11 (Information of major shareholders as of December 31, 2022)

UNITED MICROELECTRONICS CORPORATION

Name	Number of shares	Percentage of ownership (%)
JPMorgan Chase Bank, N.A. acting in its capacity as depository and representative to the holders of ADRs	674,118,630	5.39



## **UMC and its Affiliated Enterprises have Not Faced Financial Difficulties during Recent Years up to the Annual Report Printing Date**

**UNITED MICROELECTRONICS CORPORATION**

**REPRESENTATIVE: STAN HUNG**



*Stan Hung*

**UMC**